



IE UNIVERSITY  
TESIS DOCTORAL / DOCTORAL  
DISSERTATION

ESSAYS ON IT VALUE COCREATION IN DIGITAL PLATFORMS  
"ENSAYOS SOBRE COCREACIÓN DE VALOR DE TECNOLOGÍA  
DE LA INFORMACIÓN EN PLATAFORMAS DIGITALES"

Yasalde Oldaír Jiménez Acosta

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## Resumen

La cocreación de valor de la tecnología de la información (IT) es cada vez más importante a medida que más empresas exploran diferentes lugares para ser ágiles e innovadoras al participar en ecosistemas de plataformas digitales colaborativas. Las empresas están estableciendo alianzas interorganizacionales con otras empresas, incluidos clientes y competidores directos, para cocrear valor de TI e innovar más rápidamente que la competencia. A los efectos de esta tesis, la cocreación de valor basada en TI (cocreación de valor de TI) y los ecosistemas de plataformas digitales desempeñan un papel central. *La cocreación de valor de TI* se refiere a donde dos o más empresas colaboran y cocrean productos y servicios habilitados para TI (Grover y Kohli, 2012). *Los ecosistemas de plataformas digitales* se conocen como "plataformas externas basadas en software que consisten en la base de código extensible de un sistema basado en software que proporciona la funcionalidad central compartida por los módulos que interoperan con él y las interfaces a través de las cuales interoperan" (de Reuver et al., 2018, p. 3).

A medida que los ecosistemas de plataformas digitales continúan creciendo y a medida que más propietarios de plataformas impulsan el valor y la innovación mediante la creación conjunta de productos y servicios con otras empresas en sus ecosistemas de plataformas, argumentamos la necesidad de comprender mejor cómo las empresas cocrean valor de TI y las rutinas y procesos organizacionales subyacentes, y las estrategias y prácticas de gestión asociadas para hacer frente a las inevitables tensiones paradójicas. particularmente en entornos cooperativos. El fenómeno de los ecosistemas de plataformas digitales, combinado con la falta de un trabajo académico específico centrado en el papel de las plataformas digitales en la cocreación de valor de TI, ha motivado nuestro enfoque de investigación. Para investigar estos temas importantes, adoptamos un enfoque cualitativo para explorar el fenómeno de la cocreación de valor de TI y la tesis tiene

como objetivo ampliar nuestra comprensión de los procesos de cocreación de valor de TI en ecosistemas de plataformas digitales altamente complejos y competitivos. En los dos estudios empíricos, empleamos la metodología de la teoría fundamentada y realizamos un estudio de caso múltiple de dos ecosistemas de plataformas digitales.

En primer lugar, investigamos cómo las empresas cocrean valor de TI recurriendo a la teoría de las capacidades dinámicas para desentrañar los procesos clave de la cocreación de valor basada en TI en los ecosistemas de plataformas digitales. Avanzamos en un marco teórico que nos ayuda a comprender cómo las empresas gestionan el viaje de cocreación de TI detectando, aprovechando y reconfigurando las competencias para abordar entornos que cambian rápidamente. Esta investigación proporciona un modelo emergente y conocimientos teóricos sobre la literatura existente sobre los nueve procesos involucrados en la cocreación de valor de TI en los ecosistemas de plataformas digitales.

En segundo lugar, cuando las empresas persiguen inversiones en TI en plataformas digitales y establecen alianzas con otras empresas, incluidos los competidores, para cocrear valor de TI e impulsar la innovación plantea tensiones desafiantes. Cómo y por qué surgen las tensiones sigue siendo objeto de investigación, especialmente cuando las empresas cocrean soluciones digitales en entornos cooperativos. Motivados por el marco de Grover y Kohli (2012) para cocrear valor de TI, empleamos la literatura de paradojas como una lente teórica para desarrollar un modelo integral para examinar cómo las empresas equilibran la coopetición al cocrear valor de TI en ecosistemas de plataformas digitales. Nos encontramos con tres paradojas anidadas de la cocreación de valor de TI en entornos cooperativos: estrategia empresarial (transaccional-transformacional), gestión de la tecnología (crecimiento de la plataforma-estabilidad de la plataforma) e intercambio de información (secreto a puerta cerrada (novedad) vs transparencia

abierta (eficiencia). Basándonos en la literatura sobre paradojas, arrojamos luz sobre lo que desencadena tales tensiones y teorizamos cómo las estrategias y tácticas de gestión ayudan a gestionar estas paradojas entrelazadas para ofrecer resultados comerciales.

## Abstract

Information technology (IT) value cocreation is of increasing importance as more firms explore different venues to be agile and innovative by participating in collaborative digital platform ecosystems. Firms are establishing interorganizational alliances with other firms – including customers and direct competitors – to cocreate IT value and innovate more quickly than the competition. For the purpose of this dissertation, IT-based value cocreation (*IT value cocreation*) and digital platform ecosystems play a central role. *IT value cocreation* refers to where two or more firms collaborate and cocreate IT-enabled products and services (Grover & Kohli, 2012). *Digital platform ecosystems* are known as “software-based external platforms consisting of the extensible codebase of a software-based system that provides core functionality shared by the modules that interoperate with it and the interfaces through which they interoperate” (de Reuver et al., 2018, p. 3).

As digital platform ecosystems continue to grow and as more platform owners drive value and innovation by co-creating products and services with other firms in their platform ecosystems, we argue the need to further understand how firms cocreate IT value and the underlying organizational routines and processes, and associated strategies and management practices to cope with inevitable paradoxical tensions, particularly in cooperative environments. The phenomenon of digital platform ecosystems, combined with the lack of specific scholarly work focus on the role of digital platforms in IT value cocreation, has motivated our research focus. To investigate these important topics, we took a qualitative approach to explore the phenomenon of IT value cocreation and the dissertation aims to extend our understanding of the processes of IT value cocreation in highly complex and competitive digital platform ecosystems. In the two empirical studies, we

employed grounded theory methodology and conducted a multi case study of two digital platform ecosystems.

First, we investigate how firms cocreate IT value by drawing on dynamic capabilities theory to tease out key processes of IT-based value cocreation in digital platform ecosystems. We advance a theoretical framework that helps us understand how firms manage the IT cocreation journey by sensing, seizing, and reconfiguring competencies to address rapidly changing environments. This research provides an emerging model and theoretical insights into extant literature about the nine processes involved in IT value cocreation in digital platform ecosystems.

Second, when firms pursue IT investments in digital platforms and establishing alliances with other firms – including competitors – to cocreate IT value and to drive innovation raises challenging tensions. How and why tensions emerge remains under research particularly when firms cocreate digital solutions in cooperative environments. Motivated by Grover and Kohli's (2012) framework for cocreating IT value, we employ the paradox literature as a theoretical lens to develop a comprehensive model for examining how firms balance cooperation when cocreating IT value in digital platform ecosystems. We encountered three nested paradoxes of IT value cocreation in cooperative environments: business strategy (transactional-transformational), technology management (platform growth-platform stability), and information sharing (closed door-secrecy (novelty) vs open-transparency (efficiency)). Building on paradox literature, we shed light on what triggers such tensions and theorize how management strategies and tactics help manage these intertwined paradoxes to deliver business outcomes.

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## 2 Chapter 1: Introduction

The topics of interest in this doctoral dissertation explore the phenomenon of Information technology (IT)-based value cocreation in digital platform ecosystems. The purpose of our two empirical studies is to examine how firms cocreate IT value and what are the key *processes* that emerge when firms cocreate IT-based solutions in digital platform ecosystems, and to analyze how firms balance cooperative environments and relationships, using the paradox theoretical lens.

IT-based value cocreation and digital platform ecosystems play a central role in this dissertation. We use “IT-based value cocreation” to refer to IT value cocreation where two or more firms collaborate and cocreate IT-enabled products and services. Kohli and Grover (2008) defined *IT-based cocreation of value* as (a) IT value is increasingly being created and realized through actions of multiple parties, (b) value emanates from robust collaborative relationships among firms, and (c) structures and incentives for parties to partake in and equitably share emergent value are necessary to sustain cocreation. (p. 28). The literature in information systems has been using different terms for digital platforms. We adopted Ghazawneh and Henfridsson’s (2015) definition of digital platforms, which is known as “software-based external platforms consisting of the extensible codebase of a software-based system that provides core functionality shared by the modules that interoperate with it and the interfaces through which they interoperate” (de Reuver et al., 2018, p. 3).

Developing global and scalable solutions in isolation – without collaborative partner networks and digital platform ecosystems – that are cost-effective and competitive in the market is extremely challenging. Therefore, IT value cocreation is of increasing importance as more firms seek to be agile and innovative by participating in collaborative environments (Grover & Kohli, 2012). Firms are actively working in digital-platform ecosystems, cooperating, and establishing

interorganizational alliances with other firms – including their customers and direct competitors – to cocreate IT value and innovate more quickly than the competition but it is becoming increasingly challenging as multi-firm cooperation increases among modern firms (Mandrella et al., 2020). In this study, the unit of analysis is at the digital platforms level, thereby serving the purpose of generating explanations of the phenomena through a study that captures the essence of IT-based value cocreation projects in digital platform ecosystems. The multiple case study is outlined below, following more detailed overview of the research’s purpose, research questions, and empirical contributions.

## **2.1 Phenomena of IT value cocreation and digital platform ecosystems**

The World Bank projects that an emerging set of digital ecosystems in retail and institutional spaces could account for more than \$60 trillion in revenue by 2025, or more than 30% of global corporate revenue (Atluri et al., 2017). Further, five innovation platforms<sup>4</sup> (Microsoft, Oracle, Intel, SAP, and Salesforce) alone have a total market cap of \$911 billion – and six integrated platform companies<sup>5</sup> (Apple, Google, Facebook, Amazon, Alibaba and Xiaomi) have a market cap of \$2 trillion (Evans & Gawer, 2016).

Digital platform ecosystems will continue to grow as more platform owners drive value and innovation by co-creating products and services with other firms in their platform ecosystems (Evans & Gawer, 2016). For instance, thousands of independent software vendors (ISVs) are building solutions on top of Amazon Web Services (AWS) cloud platform infrastructure and many of those ISVs are direct competitors of AWS. Many of these ISVs offer their solutions on AWS Marketplace<sup>1</sup>, which is sort of an online store, a digital catalog of on-demand software available

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<sup>1</sup> AWS Marketplace is a “curated digital catalog that customers can use to find, buy, deploy, and manage third-party software, data, and services to build solutions and run their businesses. AWS Marketplace includes thousands of software listings from popular categories such as security, business applications, machine learning, and data products across specific industries, such

as ‘pay-as-you-use’ (or pay-for-use) payment structure. Salesforce’s cloud services run on AWS, but they compete directly in the data and analytics and software-as-a-service (SaaS) market, namely through Tableau Software (owned by Salesforce) and Amazon QuickSight (owned by AWS). A different example in the SaaS data warehouse domain between two leading vendors, Snowflake and Microsoft. Snowflake’s SaaS-based data warehouse solution runs on both Microsoft and AWS cloud platforms, meanwhile, Microsoft’s and AWS’s data warehouse solutions (Azure Synapse and Amazon Redshift, respectively) are direct competitors to Snowflake’s data warehouse solution. Why then are these global digital platforms cocreating IT value and building joint digital solutions? What motivates and drives these firms to cooperate and compete simultaneously? Well, as one of our informants from the cloud platform provider suggested, the global brand status and the combined addressable market when these firms form alliances are equally appealing to customers and partners, and it not only act as major incentives for customers, it opens up opportunities for enormous value creation for all firms. These are some of the many questions that inspired us to undertake this research and are the foundation of the dissertation.

## 2.2 Purpose and research questions

The phenomenon of digital platform ecosystems, combined with the lack of specific scholarly work focus on the role of digital platforms in IT value cocreation, has motivated my research focus. Little has been shed regarding how firms cocreate IT value in digital platforms and researchers in the digital platforms community (de Reuver et al., 2018; Gawer & Cusumano, 2014a; Kapoor & Lee, 2012; Leijon et al., 2017) claim it is necessary to expand our understanding

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as healthcare, financial services, and telecommunications. Customers can quickly launch preconfigured software, and choose software solutions in Amazon Machine Images (AMIs), software as a service (SaaS), and other formats. Professional services are also available to help customers configure, deploy, and manage third-party software. You can use AWS Marketplace as a buyer (subscriber), seller (provider), or both. Anyone with an AWS account can use AWS Marketplace as a buyer, and can register to become a seller. A seller can be an independent software vendor (ISV), consulting partner, managed services provider (MSP), or individual who has something to offer that works with AWS products and services” ([What is AWS Marketplace?](#)).

of how firms innovate together, what capabilities are required, and the challenges and opportunities in collaborative environments.

As firms continue to work in multi-firm, digital-platform ecosystems, bringing together various players to capture economic value through new models of collaboration, paradoxical tensions and competing demands among firms are inevitable and ubiquitous (Gaim & Wählin, 2016; Smith & Lewis, 2011). For example, profitability versus growth (Toth et al., 2022) or exploitation versus exploration (March, 1991). Despite tensions, these firms are making IT investments in digital platforms and establishing interorganizational alliances with other firms and direct competitors and partners. By tensions, Smith and Lewis (2011) see tensions as paradoxical and refer to a combination of “elements that seems logical individually but inconsistent and even absurd when juxtaposed” (Smith & Lewis, 2011, p. 382). Drawing on paradox theory, more researchers (Andriopoulos & Lewis, 2009; Gregory et al., 2015; Toth et al., 2022; Wei et al., 2022) are exploring the phenomenon of paradoxes in digital platforms and innovation.

In this vein this dissertation aims to vividly depict how firms cocreate IT value and how firms manage tensions and balance the cooperative nature of such cocreation of IT-based value in digital platform ecosystems. Specifically, we ask two research questions: *How is IT value cocreated in digital platform ecosystems and what are the processes that emerge? How do firms cocreate IT value when participating in digital platforms? and how do firms manage cooperation and competition when cocreating IT value in digital platforms?* We explore these contexts in the digital platform ecosystems, some of the largest digital platform providers in the world where they offer the backbone and core cloud-based infrastructure for innovation and value cocreation for partners, customers, and competitors. We believe our results can inform extant research and contribute to multiple strands of the information systems (IS), paradox, dynamics capability, and

IT-based value cocreation literature. Further, scholars have paid limited attention to the network processes that enable organizations to resolve multiparty participation problems and achieve common objectives like innovation (Davis, 2016). Therefore, extending our understanding of how firms cocreate IT value in digital platforms and the coordination and balancing of cooperative environments and relationships are of increasing importance.

This study makes several contributions to research, and we believe our results can inform extant research in multiple ways and our study carries several implications for platform owners, customers, and partners forming partnerships to cocreate IT value.

First, we proposed a process model by drawing on the dynamic capabilities (Teece et al., 1997) theoretical lens and its application to IT-based value cocreation (Grover & Kohli, 2012). Specifically, the emerging process model includes nine (9) underlying processes involved in IT value cocreation in digital platform ecosystems. We address the need for research on the “processes” of IT value cocreation in IT platform-based, competitive environments (Grover & Kohli, 2012).

Second, anchored on the paradox theoretical lens (Andriopoulos & Lewis, 2009; Lewis, 2000; Poole & Van de Ven, 1989), we developed an integrative, abstracted model where we identified three interwoven tensions of IT value cocreation in cooperative and digital platform ecosystems environments: *business strategy*, *technology management*, and *information sharing*. For each tension, we describe the *causes of tensions* and strategic responses as *management approaches* – with strategies and tactics inspired by institutional theory (Oliver, 1991) – to cope with such tensions. We identify two general variations of resolving paradoxical tensions, which we refer to in the model as *enabling* and *masking*.

### 2.3 Dissertation structure

The dissertation proposal is structured as follows.

- II. The second part of the dissertation is an essay introducing a *literature review* on core constructs of this study such as IT value cocreation, digital platform ecosystems, dynamics capabilities, and paradox literature. I provide key existing gaps in the literature to support these studies along with the research questions.
- III. In the third chapter, we describe our *research design method*. We employ a grounded theory approach (multi-case study) to answer the questions in scope of this thesis. We study two cases or a total of six (6) firms, and each case is composed of three firms participating in digital platforms to cocreate IT value.
- IV. The fourth chapter we describe our empirical context of *how firms cocreate IT value in digital platforms*. Motivated by Grover and Kohli's (2012) framework for cocreating IT value, we employ the dynamic capabilities (Teece, 2007) theory as a theoretical lens. We adopt a grounded theory qualitative approach to understand the *processes* of IT value cocreation. We extend our understanding of how firms co-create with customers, partners, and competitors in digital-platform environments and tease out the key *processes* that emerge when firms cocreate IT value with other firms.
- V. The fifth chapter of the dissertation describes our empirical context on *how firms cocreate IT value when participating in digital platforms and firms manage cooperation and competition when cocreating IT value in digital platforms*. We take a grounded theory qualitative approach and employ paradox literature as a theoretical lens to understand how firms balance paradoxical tensions and the strategies and approaches to address or mitigate such tensions.
- VI. Finally, the sixth and last chapter, we conclude with a brief overview of how the findings in this dissertation address some questions in how firms cocreate IT value in digital platform ecosystems. The dissertation concludes with an overarching conclusion, discussion, contributions, and managerial implications and empirical ideas for future research.

### 3 Capítulo 1: Introducción

Los temas de interés en esta tesis doctoral exploran el fenómeno de la cocreación de valor basada en tecnologías de la información (TI) en ecosistemas de plataformas digitales. El propósito de nuestros dos estudios empíricos es examinar cómo las empresas cocrean valor de TI y cuáles son los *procesos* clave que surgen cuando las empresas cocrean soluciones basadas en TI en ecosistemas de plataformas digitales, y analizar cómo las empresas equilibran los entornos y las relaciones cooperativas, utilizando la lente teórica de la paradoja.

La cocreación de valor basada en TI y los ecosistemas de plataformas digitales desempeñan un papel central en esta tesis. Utilizamos "cocreación de valor basada en TI" para referirnos a la cocreación de valor de TI donde dos o más empresas colaboran y cocrean productos y servicios habilitados para TI. Kohli y Grover (2008) definen la cocreación de valor basada en TI como (a) el valor de TI se crea y realiza cada vez más a través de acciones de múltiples partes, (b) el valor emana de relaciones de colaboración sólidas entre las empresas, y (c) las estructuras e incentivos para que las partes participen y compartan equitativamente el valor emergente son necesarios para mantener la *cocreación*. (pág. 28). La literatura en sistemas de información ha estado utilizando diferentes términos para las plataformas digitales. Adoptamos la definición de plataformas digitales de Ghazawneh y Henfridsson (2015), que se conoce como "plataformas externas basadas en software que consisten en la base de código extensible de un sistema basado en software que proporciona funcionalidad básica compartida por los módulos que interoperan con él y las interfaces a través de las cuales interoperan" (de Reuver et al., 2018, p. 3).

Desarrollar soluciones globales y escalables de forma aislada, sin redes de socios colaborativos y ecosistemas de plataformas digitales, que sean rentables y competitivas en el mercado es extremadamente desafiante. Por lo tanto, la cocreación de valor de TI es cada vez más

importante a medida que más empresas buscan ser ágiles e innovadoras participando en entornos colaborativos (Grover & Kohli, 2012). Las empresas están trabajando activamente en ecosistemas de plataformas digitales, cooperando y estableciendo alianzas interorganizacionales con otras empresas, incluidos sus clientes y competidores directos, para cocrear valor de TI e innovar más rápidamente que la competencia, pero se está volviendo cada vez más desafiante a medida que aumenta la cooperación entre empresas modernas (Mandrella et al., 2020). En este estudio, la unidad de análisis se encuentra a nivel de plataformas digitales, lo que sirve para generar explicaciones de los fenómenos a través de un estudio que captura la esencia de los proyectos de cocreación de valor basados en TI en ecosistemas de plataformas digitales. El estudio de caso múltiple se describe a continuación, después de una descripción más detallada del propósito de la investigación, las preguntas de investigación y las contribuciones empíricas.

### **3.1 Fenómenos de Cocreación de Valor de TI y Ecosistemas de Plataformas Digitales**

El Banco Mundial proyecta que un conjunto emergente de ecosistemas digitales en espacios minoristas e institucionales podría representar más de \$60 billones en ingresos para 2025, o más del 30% de los ingresos corporativos globales (Atluri et al., 2017). Además, cinco plataformas de innovación <sup>4</sup> (Microsoft, Oracle, Intel, SAP y Salesforce) por sí solas tienen una capitalización de mercado total de \$ 911 mil millones, y seis compañías de plataformas integradas<sup>5</sup> (Apple, Google, Facebook, Amazon, Alibaba y Xiaomi) tienen una capitalización de mercado de \$2 trillones (Evans & Gawer, 2016).

Los ecosistemas de plataformas digitales continuarán creciendo a medida que más propietarios de plataformas impulsen el valor y la innovación mediante la creación conjunta de productos y servicios con otras empresas en sus ecosistemas de plataforma (Evans & Gawer, 2016). Por ejemplo, miles de proveedores de software independientes (ISV) están creando soluciones

sobre la infraestructura de la plataforma en la nube de Amazon Web Services (AWS) y muchos de esos ISV son competidores directos de AWS. Muchos de estos ISV ofrecen sus soluciones en AWS Marketplace, que es una especie de tienda en línea, un catálogo digital de software bajo demanda disponible como estructura de pago por uso (o pago por uso). Los servicios en la nube de Salesforce se ejecutan en AWS, pero compiten directamente en el mercado de datos y análisis y software como servicio (SaaS), es decir, a través de Tableau Software (propiedad de Salesforce) y <sup>2</sup>Amazon QuickSight (propiedad de AWS). Un ejemplo diferente en el dominio del almacén de datos SaaS entre dos proveedores líderes, Snowflake y Microsoft. La solución de almacén de datos basada en SaaS de Snowflake se ejecuta en plataformas en la nube de Microsoft y AWS, mientras tanto, las soluciones de almacén de datos de Microsoft y AWS (Azure Synapse y Amazon Redshift, respectivamente) son competidores directos de la solución de almacén de datos de Snowflake. ¿Por qué entonces estas plataformas digitales globales cocrean valor de TI y construyen soluciones digitales conjuntas? ¿Qué motiva e impulsa a estas empresas a cooperar y competir simultáneamente? Bueno, como sugirió uno de nuestros informantes del proveedor de la plataforma en la nube, el estado de marca global y el mercado direccionable combinado cuando estas empresas forman alianzas son igualmente atractivos para clientes y socios, y no solo actúan como grandes incentivos para los clientes, sino que abren oportunidades para una enorme creación

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<sup>2</sup>AWS Marketplace es un "catálogo digital seleccionado que los clientes pueden usar para encontrar, comprar, implementar y administrar software, datos y servicios de terceros para crear soluciones y administrar sus negocios. AWS Marketplace incluye miles de listados de software de categorías populares como seguridad, aplicaciones empresariales, aprendizaje automático y productos de datos en sectores específicos, como la atención médica, los servicios financieros y las telecomunicaciones. Los clientes pueden lanzar rápidamente software preconfigurado y elegir soluciones de software en Amazon Machine Images (AMI), software como servicio (SaaS) y otros formatos. Los servicios profesionales también están disponibles para ayudar a los clientes a configurar, implementar y administrar software de terceros. Puede utilizar AWS Marketplace como comprador (suscriptor), vendedor (proveedor) o ambos. Cualquier persona con una cuenta de AWS puede utilizar AWS Marketplace como comprador y puede registrarse para convertirse en vendedor. Un vendedor puede ser un proveedor de software independiente (ISV), un socio consultor, un proveedor de servicios administrados (MSP) o una persona que tenga algo que ofrecer que funcione con productos y servicios de AWS" ([¿Qué es AWS Marketplace?](#) ).

de valor para todas las empresas. Estas son algunas de las muchas preguntas que nos inspiraron a emprender esta investigación y son la base de la disertación.

### 3.2 Propósito y Preguntas de la Investigación

El fenómeno de los ecosistemas de plataformas digitales, combinado con la falta de un trabajo académico específico centrado en el papel de las plataformas digitales en la cocreación de valor de TI, ha motivado mi enfoque de investigación. Se ha eliminado la información sobre cómo las empresas cocrean valor de TI en plataformas digitales y cómo los investigadores en la comunidad de plataformas digitales (de Reuver et al., 2018; Gawer y Cusumano, 2014a; Kapoor y Lee, 2012; Leijon et al., 2017) afirman que es necesario ampliar nuestra comprensión de cómo las empresas innovan juntas, qué capacidades se requieren y los desafíos y oportunidades en entornos colaborativos.

A medida que las organizaciones continúan trabajando en ecosistemas de plataformas digitales de múltiples empresas, reuniendo a varios actores para capturar valor económico a través de nuevos modelos de colaboración, las tensiones paradójicas y las demandas competitivas entre las empresas son inevitables y omnipresentes (Gaim y Wählin, 2016; Smith y Lewis, 2011). Por ejemplo, rentabilidad versus crecimiento (Toth et al., 2022) o explotación versus exploración (March, 1991). A pesar de las tensiones, estas empresas están haciendo inversiones en TI en plataformas digitales y estableciendo alianzas interorganizacionales con otras empresas y competidores y socios directos. Por tensiones, Smith y Lewis (2011) ven las tensiones como paradójicas y se refieren a una combinación de "elementos que parecen lógicos individualmente, pero inconsistentes e incluso absurdos cuando se yuxtaponen" (Smith & Lewis, 2011, p. 382). Basándose en la teoría de la paradoja, más investigadores (Andriopoulos & Lewis, 2009; Gregory

et al., 2015; Toth et al., 2022; Wei et al., 2022) están explorando el fenómeno de las paradojas en las plataformas digitales y la innovación.

En este sentido, esta tesis tiene como objetivo describir vívidamente cómo las empresas cocrean valor de TI y cómo las empresas gestionan las tensiones y equilibran la naturaleza cooperativa de dicha cocreación de valor basado en TI en los ecosistemas de plataformas digitales. Específicamente, hacemos dos preguntas de investigación: *¿Cómo se cocrea el valor de TI en los ecosistemas de plataformas digitales y cuáles son los procesos que surgen?* *¿Cómo cocrean las empresas el valor de TI cuando participan en plataformas digitales?* y *¿cómo gestionan las empresas la cooperación y la competencia al cocrear valor de TI en plataformas digitales?* Exploramos estos contextos en los ecosistemas de plataformas digitales, algunos de los proveedores de plataformas digitales más grandes del mundo, donde ofrecen la columna vertebral y la infraestructura central basada en la nube para la innovación y la cocreación de valor para socios, clientes y competidores. Creemos que nuestros resultados pueden informar la investigación existente y contribuir a múltiples líneas de los sistemas de información (SI), la paradoja, la capacidad dinámica y la literatura de cocreación de valor basada en TI. Además, investigadores y académicos han prestado poca atención a los procesos de red que permiten a las organizaciones resolver problemas de participación multipartidista y lograr objetivos comunes como la innovación (Davis, 2016). Por lo tanto, ampliar nuestra comprensión de cómo las empresas cocrean valor de TI en plataformas digitales y la coordinación y el equilibrio de entornos y relaciones cooperativas son cada vez más importantes.

Este estudio hace varias contribuciones a la investigación, y creemos que nuestros resultados pueden informar la investigación existente de múltiples maneras y nuestro estudio tiene

varias implicaciones para los propietarios de plataformas, clientes y socios que forman asociaciones para cocrear valor de TI.

Primero, propusimos un modelo de proceso aprovechando la lente teórica de las capacidades dinámicas (Teece et al., 1997) y su aplicación a la cocreación de valor basada en TI (Grover & Kohli, 2012). Específicamente, el modelo de proceso emergente incluye nueve (9) procesos subyacentes involucrados en la cocreación de valor de TI en ecosistemas de plataformas digitales. Abordamos la necesidad de investigación sobre los "*procesos*" de cocreación de valor de TI en entornos competitivos basados en plataformas de TI (Grover & Kohli, 2012).

En segundo lugar, anclado en la lente teórica de la paradoja (Andriopoulos & Lewis, 2009; Lewis, 2000; Poole & Van de Ven, 1989), desarrollamos un modelo integrador y abstracto en el que identificamos tres tensiones entrelazadas de la cocreación de valor de TI en entornos de ecosistemas de plataformas cooperativas y digitales: *estrategia de uso, gestión de la tecnología y análisis de la información*. Para cada tensión, describimos las *causas de las tensiones* y las respuestas estratégicas como *enfoques de gestión*, con estrategias y tácticas inspiradas en la teoría institucional (Oliver, 1991), para hacer frente a tales tensiones. Identificamos dos variaciones generales de resolución de tensiones paradójicas, a las que nos referimos en el modelo como *habilitación y enmascaramiento*.

### 3.3 Estructura de la Disertación

La propuesta de tesis se estructura de la siguiente manera.

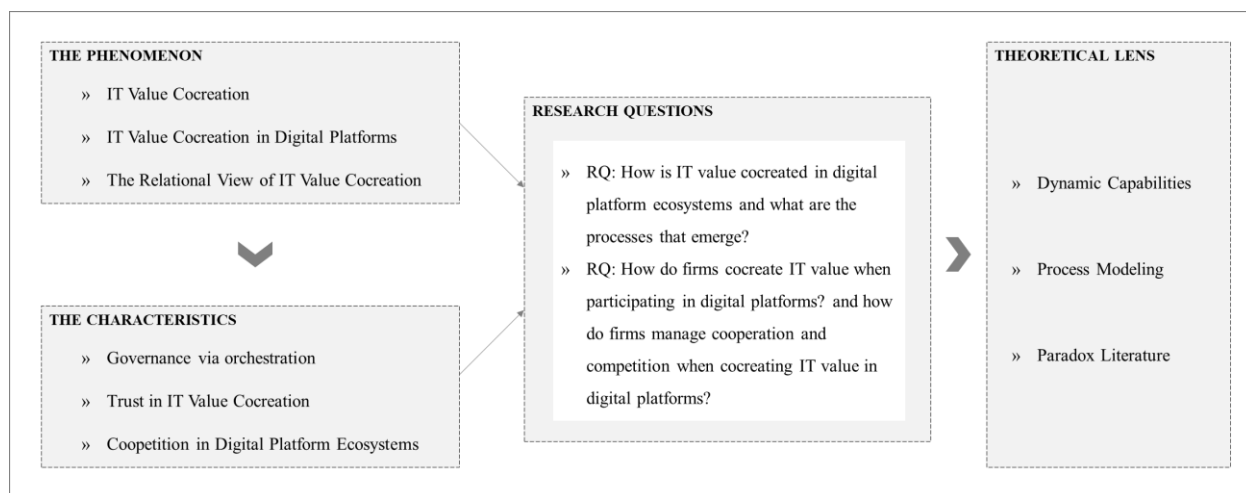
- II. La segunda parte de la disertación es un ensayo que presenta una *revisión de la literatura* sobre los constructos centrales de este estudio, como la cocreación de valor de TI, los ecosistemas de plataformas digitales, las capacidades dinámicas y la literatura de paradojas. Proporciono lagunas clave existentes en la literatura para apoyar estos estudios junto con las preguntas de investigación.

- III. En el tercer capítulo, describimos nuestro *método de diseño de investigación*. Empleamos un enfoque de teoría fundamentada (estudio de caso múltiple) para responder a las preguntas en el alcance de esta tesis. Estudiamos dos casos o un total de seis (6) empresas, y cada caso está compuesto por tres empresas que participan en plataformas digitales para cocrear valor de TI.
- IV. En el cuarto capítulo describimos nuestro contexto empírico de *cómo las empresas cocrean valor de TI en plataformas digitales*. Motivados por el marco de Grover y Kohli (2012) para cocrear valor de TI, empleamos la teoría de las capacidades dinámicas (Teece, 2007) como lente teórica. Adoptamos un enfoque cualitativo de teoría fundamentada para comprender los *procesos* de cocreación de valor de TI. Ampliamos nuestra comprensión de cómo las empresas cocrean con clientes, socios y competidores en entornos de plataforma digital y desentrañamos los *procesos* clave que surgen cuando las empresas cocrean valor de TI con otras empresas.
- V. El quinto capítulo de la tesis describe nuestro contexto empírico sobre cómo las empresas cocrean valor de TI cuando participan en plataformas digitales y *las empresas gestionan la cooperación y la competencia cuando cocrean valor de TI en plataformas digitales*. Adoptamos un enfoque cualitativo de teoría fundamentada y empleamos la literatura de paradojas como una lente teórica para comprender cómo las empresas equilibran las tensiones paradójicas y las estrategias y enfoques para abordar o mitigar tales tensiones.
- VI. Finalmente, el sexto y último capítulo, concluimos con una breve descripción de cómo los hallazgos de esta tesis abordan algunas preguntas sobre cómo las empresas cocrean valor de TI en los ecosistemas de plataformas digitales. La disertación concluye con una conclusión general, discusión, contribuciones e implicaciones gerenciales e ideas empíricas para futuras investigaciones.

## 4 Chapter 2: Literature Review

The literature review is organized across three primary areas, all relevant to the topics under investigation. As shown in the Figure 1 – an illustrative map of the literature review, we initiate with the IT value cocreation phenomenon, beginning with a perspective on IT value cocreation, followed with IT value cocreation in digital platforms, and then we review the relational view theory for value cocreation. We then consider the characteristics of this phenomenon, starting with the governance via orchestration, highlighting the essence of Trust in IT value cocreation, and finalize with Coopetition in digital platform ecosystems which is a core component of this dissertation. We then illustrate how we attempt to answer the research questions through three main theoretical lenses: dynamics capabilities, process modeling, and paradox literature.

Figure 1: Structure of the Literature Review



### 4.1 The Phenomenon of IT value cocreation

In this section we offer an overview of the IT value cocreation literature, including IT value cocreation in digital platform ecosystems, followed by the relational view theory of IT value cocreation.

#### 4.1.1 IT value cocreation

From the automobile industry to high-tech information technology firms, such as Google and Amazon, organizations are partnering with other firms to create value (Sarker et al., 2012) and are forming collaborative innovation partnerships (Davis, 2016). Also, the relationship between product owners and platform providers is no longer a customer–provider relationship but an arm’s-length partnership (Ghazawneh & Henfridsson, 2015; Tiwana et al., 2010). Prominent examples of cooperative relationships between Dell Computers and IBM and SAP with Oracle (Walley, 2007) – including modern cooperative relationships between Microsoft and Snowflake or Netflix and Amazon Video. Take, for example, the relationship between Netflix and Amazon Web Services, which have nurtured a long partnership while competing in the video space and yet have established a close product owner–cloud-provider relationship over the years. Firms today are cocreating value by making joint IT investments in digital platforms and forming relational arrangements (Grover & Kohli, 2012), even when firms are competing against each other.

However, there is surprisingly little consensus on what “cocreation” is (Ramaswamy & Ozcan, 2018), and there is a wide range of definitions of what exactly is value cocreation. There is also a debate in the literature between cocreation and coproduction (Galvagno & Dalli, 2014; Grönroos & Voima, 2013). Researchers in management and marketing have proposed unique definitions and theoretical frameworks (Grönroos, 2011; Grover & Kohli, 2012; Karagouni & Protopogerou, 2016; Lusch & Vargo, 2006; Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2004, 2008, 2015). Value cocreation is characterized by the collaboration between multiple firms working toward common goals (Prahalad & Ramaswamy, 2004; Ranjan & Read, 2016) and has drawn the research community’s interest (Bettencourt et al., 2014). Cocreation, however, is a value-creating practice for firms and customers (Grönroos & Voima, 2013; Vargo & Lusch,

2017), and the value-creating practice refers to firms that “work together to co-produce value” (Saarijärvi et al., 2013, p. 7).

Several definitions of value cocreation exist in the literature. For example, Service-Dominant (S-D) logic is considered a principal theory that explains value cocreation between firms and customers, but can include other parties, such as suppliers, partners or competitors (Vargo & Lusch, 2008; Xie et al., 2016). (Lusch & Nambisan, 2015) define value cocreation as the “processes and activities that underlie resource integration and incorporate different actor roles in the service ecosystem” (p. 162). Further, S-D logic suggests that value is always cocreated when capabilities, or specialized human knowledge and skills are applied for the benefit of the recipient (Ikävalko et al., 2018).

(Prahalad & Ramaswamy, 2000) introduced cocreation suggesting that “customers and suppliers interact and largely collaborate beyond the price system that traditionally mediates supply-demand relationships” (Galvagno & Dalli, 2014, p. 644). A few years later, (Prahalad & Ramaswamy, 2004) introduced the DART (dialogue, access, risk, transparency) model, which suggest that value is co-created by the customer and the firm, and the core of cocreation is the interactions between consumers and companies. They take an individual-centered cocreation of value approach and suggest that consumers want to go beyond and form part of the value cocreation experience with not only one firm but across communities, partners, and other consumers. The DART model offers the following building blocks (p. 6-7):

- **Dialogue:** means interactivity and shared learning and communication between two equal problem solvers.
- **Access:** means having access to information and tools (e.g., access to data on a firm’s manufacturing processes and design).

- **Risk assessment:** means the probability of harm to the consumer.
- **Transparency:** means having transparency (information asymmetry) between the consumer and the firm.

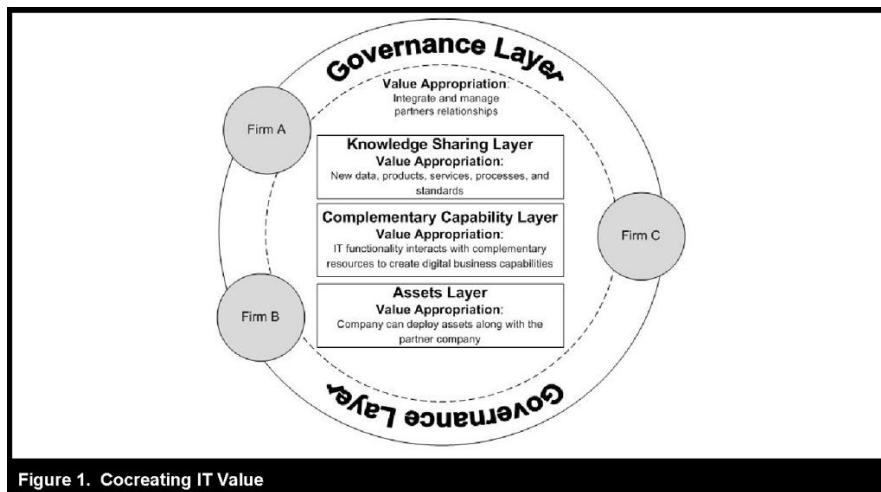
Based on (Prahalad & Ramaswamy, 2004) DART model, (Ramaswamy & Ozcan, 2018) developed a conceptualization of “cocreation” where they ground their inquiry in the enactment of creation through interactions, which goes beyond two or more human actors coming together in activities. The authors suggest that their novel model involves a diverse set of interactive system-environments among components (artifacts, persons, processes, and interfaces), enabled by technological platforms enhanced by digital technologies. (Ramaswamy & Ozcan, 2018) define cocreation as the “enactment of interactional creation across interactive system-environments (afforded by interactive platforms), entailing agencing engagements and structuring organizations” (p. 200).

As noted in prior literature, there are several definitions and subtle differences between value cocreation and IT value cocreation. Grover and Kohli (2012) suggested that “cocreation represents one of the most important streams in the IT value research area that will gain greater importance as firms expand collaborative relationships with other firms” (p. 231). We use “IT-based value cocreation” to refer to IT value cocreation where two or more firms collaborate and cocreate IT-enabled products and services. Kohli and Grover (2008) defined IT-based cocreation of value:

- (a) IT value is increasingly being created and realized through actions of multiple parties,
- (b) value emanates from robust collaborative relationships among firms, and (c) structures and incentives for parties to partake in and equitably share emergent value are necessary to sustain cocreation. (p. 28)

To answer the first research question, this study adopted Kohli and Grover's (2008) definition of IT-based cocreation of value. Grover and Kohli (2012) framed the cocreation of value based on the relational view, which includes four determinants of value: “relationship-specific assets, knowledge-sharing routines, complementary resources and capabilities, and effective governance” (p. 226). See Figure 2.

Figure 2: Cocreating IT Value (Grover & Kohli, 2012)



In their paper, in the context of IT-based value cocreation, Grover and Kohli (2012) suggested that each of the four “value creation layer[s] . . . is enabled, expanded, or created by IT” (p. 226). The value cocreation layers’ definitions are listed below.

- The **assets layer** “involves two or more firms, at least one of which contributes specialized IT hardware or software or network facilities that create new value in the form of digital or physical products and services” (Grover & Kohli, 2012, p. 226), assuming that value is created by sharing specialized assets and IT in a joint manner.
- The **complementary capability layer** focuses on “identifying and exploiting complementary resources and capabilities among the partners such that together they

are a source of value that a partner could not build on its own” (Grover & Kohli, 2012, p. 226).

- The **knowledge-sharing layer** involves multifirms exchanging information and expertise to cocreate new products and services. “The right incentives must be in place for firms to share their proprietary knowledge for a collective good. All partners must perceive mutual value from knowledge sharing and use” (Grover & Kohli, 2012, p. 227).
- **Effective governance** focuses on “setting up a control structure that reduces transaction costs and incentivizes new value cocreation” (Grover & Kohli, 2012, p. 228). This layer “can be viewed as the layer that integrates the assets, complementary capabilities, and knowledge-exchange layers” (Grover & Kohli, 2012, p. 228).

Additionally, value cocreation emerges from firms making investments in digital platforms and forming collaborative partnerships (Grover & Kohli, 2012). In a study of enterprise resource planning (ERP) software platforms, Sarker et al. (2012) revealed the influence of governance mechanisms, capabilities, and knowledge transfer on value cocreation as well as how firms benefit from participating in a common platform. These studies suggest the importance of mutual investments, robust governance, and resource integration (Barrett et al., 2015) as part of IT value cocreation in digital platform ecosystems.

#### **4.1.2 IT value cocreation in digital platforms**

Organizations are adopting digital platforms to develop information technology (IT) capabilities, improve organizational performance, and maintain competitive positions in the market (de Reuver et al., 2018; Nwankpa & Datta, 2017). To stay ahead of the competition, more firms turn to value cocreation by leveraging digital platforms and establishing collaborative

arrangements. In this study, we differentiate digital platforms from digital platform ecosystems and, while heavily related and intertwined there are key nuances and differences between the two terms. Ghazawneh and Henfridsson's (2015) define digital platforms as "software-based external platforms consisting of the extensible codebase of a software-based system that provides core functionality shared by the modules that interoperate with it and the interfaces through which they interoperate" (de Reuver et al., 2018, p. 3). Based on Hein et al's (2019) paper on digital platform ecosystems and their thorough synthesis of the digital platform ecosystems literature, they offer the following definition, which we adopt for this dissertation:

"a digital platform ecosystem comprises a platform owner that implements governance mechanisms to facilitate value-creating mechanisms on a digital platform between the platform owner and an ecosystem of autonomous complementors and consumers" (Hein, Schrieck, et al., 2019, p. 5).

Aligned to the definition above, value cocreation is facilitated through active collaboration between firms and requires the sharing of specialized resources and expertise (Tiwana & Kim, 2015). However, no single organization holds all the necessary capabilities within its walls to sense and seize the quickly growing digital platform ecosystem and the complexity of open and complex architectures. For example, the Internet of Things (IoT) has created novel opportunities with new digital technologies being integrated into connected devices (Ikävalko et al., 2018). It is too complex for one organization alone to tackle, and an essential element of IoT success is companies' ability to partner with other companies, combining their skills, experience, and complementary resources (Kranz, 2016). IT value cocreation in digital platforms results in a paradigm shift, where more organizations will need to cultivate a network of partners, platform-based capabilities, and

industry expertise to keep up with their competition (Bughin et al., 2017; Hein, Schreieck, et al., 2019).

A central focus of this study is centered on the processes of IT value cocreation when firms participate in digital platforms. Similar to any other business alliance, value cocreation requires transparency, trust, and an understanding of who are the actors involved (Schreieck & Wiesche, 2017). Hein et al. (2019) suggested scholars and practitioners consider three areas to maximize value cocreation ventures: (a) Interaction and knowledge-sharing in such collaborative ecosystem is critical; (b) the “institutional logic, such as organizational structures, roles, and processes, needs to be aligned with new value cocreation services” (p. 3); and (c) setting up the rules of engagement up front is “essential to resolving intellectual-property issues” (Hein, Weking, et al., 2019, p. 3).

Although the role of digital platforms in value cocreation between firms and their partners has been studied (Ceccagnoli et al., 2012), the role of customers remains unexplored (Xie et al., 2016). Similarly, the existing literature concerns dyads (e.g., customer, provider) but neglects multi-firm relationships, such as triadic arrangements (e.g., platform provider, product owner, and other firms collaborating, such as management consulting and professional services firms, system integrators, etc.) to achieve business outcomes (Davis, 2016). While integrating digital platform technologies and sharing resources to cocreate IT value may yield high returns, these endeavors are not simple. Several challenges may arise, and critical decisions are made throughout the value cocreation journey, such as what, which, and how many partners to select; ongoing partner relationship management; selecting the appropriate level of oversight throughout the IT value creation lifecycle (Solli-Sæther & Flak, 2014); and how value is shared among alliance partners (Dyer et al., 2018; Kohli & Grover, 2008). Also, specialized IT assets, knowledge sharing, and

governance mechanisms play a critical role in value cocreation efforts (Dyer et al., 2018; Melville et al., 2004; Sarker et al., 2012), which need to be managed carefully.

For example, (Ceccagnoli et al., 2012) studied how small independent software vendors' participation in platform ecosystems improved their business performance. They found that independent software vendors (ISVs) joining a platform ecosystem will likely result in increased sales performance. Grover and Kohli (2012) proposed that on common platforms, software developers' active cooperation improves the "innovative solutions provided to customers, creating a virtuous cycle of indirect network effects leading to a positive IT-based cocreation cycle" (p. 229). Ceccagnoli et al. (2012) suggested multiple value creation mechanisms and showed how multi-firm partnerships create value for participating members. One important area, value creation, revolves around the platform owner, resulting in an unbalanced relationship between the platform and product owners and consumers. Another, more governance-related mechanism and perhaps one that requires special attention to is the exchange and protection of intellectual property, particularly because "platform owners constantly absorb innovative features of complementary applications into the platform" (Ceccagnoli et al., 2012, p. 9).

On the other hand, value cocreation can produce positive results when such mechanisms are managed appropriately. (Xie et al., 2016) demonstrated how firms generate value by investing in digital platforms in big data by transforming data resources in valuable cooperative assets. As a result, IT value cocreation drives digital business innovation where multiple co-contributors work together to innovate business models (Venkatraman et al., 2014). These studies showcase how IT-enabled value cocreation, digital platforms, and multiorganization relationships are fundamentally changing the way organizations respond to digital disruption and organize for IT value cocreation.

Why do digital platforms play a key role in IT value cocreation? Digital platforms act as engines of innovation for other firms to build complementary products and services in diverse ecosystems (Gawer, 2009; Srinivasan & Venkatraman, 2018). Technological platforms that operate in a broad network of firms are also referred to as “innovation ecosystems” (Gawer, 2014; Nambisan & Sawhney, 2011). These industry platforms are defined as “a building block, providing an essential function to a technological system – which acts as a foundation upon which other firms, loosely organized in an innovation ecosystem, can develop complementary products, technologies or services” (Gawer, 2014, p. 1242). These platform-based technologies are driven by high-tech firms (e.g., Amazon Web Services, Google, Intel) that build hardware and software applications, and they offer a plethora of other digital and cloud-based services (Gawer & Cusumano, 2014). All of these organizations and their partners participate in what Gawer and Cusumano (2014) refer to as platform-based “ecosystem” innovation (Iansiti & Levien, 2004). This level of participation and engagement in innovation ecosystems creates a “network effect” (Gawer & Cusumano, 2014a, p. 417), meaning that greater adoption of such platforms results in the platform owners and its user generating more value. Consider Apple’s iTunes or the Amazon Web Services cloud platform; both “platforms” incentivize users to build application services on top of them by offering digital capabilities, a strong network, and communities of developers. Therefore, platform owners outline appropriate governance processes as the ground rules to orchestrate multi-party interactions in digital platform ecosystems (Hein, Schrieck, et al., 2019). Previous studies concerning IS value explored value cocreation in the context of transaction costs (Kim et al., 2019), the implications on exploitation or exploration (Reypens et al., 2016), or how value cocreation enables and facilitates innovation (Ceccagnoli et al., 2012). A focus on IT value cocreation is needed (Grover & Kohli, 2012) and developing an understanding of key processes

that facilitate IT value cocreation would provide better insights of how firms cocreate value in complex digital platform ecosystems.

These digital platforms provide layered modular architectures (Nambisan et al., 2017; Y. Yoo, 2010) and facilitate integration of the technology and platform (Bharadwaj et al., 2013; Markus & Loebbecke, 2013), which expedites innovation and cocreation between firms. A key aspect of this dissertation is cloud computing (*the cloud*),<sup>3</sup> which fall within the digital platform's ecosystem, and has become a crucial enabler for firms pursuing value cocreation initiatives (Giessmann & Legner, 2016). The cloud expedites cocreation because of cloud services' ease of use (Sarker et al., 2012) and firms' ability to quickly set up cloud services and resources based on their infrastructure needs (Nambisan et al., 2017). With cloud computing and digital platforms, firms can access the type and size of computing resources they need and firms can quickly power and jumpstart innovative ideas and experiments, allowing their technical experts and third-party developers to instantly access the necessary resources while paying for what is consumed (Schrieck et al., 2019). However, adopting and using cloud services that deliver value is complex and can be a daunting task to implement if it is not done correctly and firms do not have the right skills and internal capabilities. Designing and building digital solutions requires integrating a broad range of digital platform components (Giessmann & Legner, 2016). Given these challenges and complexities of IT value cocreation in digital platform ecosystems, we therefore consider a "*relational view*" (Dyer et al., 2018; Dyer & Singh, 1998) perspective to further understand how firms create value in alliances and with partners that bring a plethora of complementary resources,

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<sup>3</sup> *Cloud computing* refers to "the applications delivered as services over the Internet and the hardware and systems software in the data centers that provide those services. The services themselves have long been referred to as Software as a Service (SaaS)" (Armbrust et al., 2010, p. 50)... "The data center and software what we call a cloud" ((Armbrust et al., 2010, p. 51).

share knowledge and skills, specialized assets, and make co-investments that are often customized to the partners and customers.

#### **4.1.3 The relational view of the firm**

In contrast to the resource-based value (RBV) of competitive advantage that suggests that rent generation is a consequence of tangible and intangible resources owned by the firm (Barney, 1986; Hadaya & Cassivi, 2012), the relational view of the firm (Dyer & Singh, 1998) suggests that firms' critical resources may span and reside beyond their walls. In other words, the idea of having and owning all necessary resources in the firm is no longer the case. Dyer and Singh (1998) "offer a relational view of competitive advantage that focuses on dyad/network routines and processes as an important unit of analysis for understanding competitive advantage" (p. 661). In their seminal paper, they argued that "collaborating firms can generate relational rents<sup>4</sup> through relation-specific assets, knowledge-sharing routines, complementary resource endowments, and 'effective governance'" (p. 676). Grover and Kohli (2012) framed the framework for cocreating IT value based on the relational theory suggesting that each of the "four determinants present a value creation layer and is enabled, expanded, or created by IT" (p. 226).

More recently, Dyer et al. (2018) suggested that the "relational view perspective has shown that firms create value in alliances when they identify partners with complementary resources, when they build high levels of informal trust and they share knowledge and make investments that are customized to the partner" (p. 1). However, exactly how can organizations measure the value created in an alliance where the objective is to cocreate IT value from digital platforms? In other words, what is the appropriate measurement of the outputs generated from alliances and relational

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<sup>4</sup> Dyer and Singh (1998) define relational rent as a "supernormal profit jointly generated in an exchange relationship that cannot be generated by either firm in isolation and can only be created through the joint idiosyncratic contributions of the specific alliance partners" (p. 662).

arrangements? IT alone does not create value and requires IT resources and capabilities to create IT business value, and benefits are achieved in conjunction with other organizational and human capabilities (Devaraj & Kohli, 2003; Ramaswamy & Ozcan, 2018). Grover and Kohli (2012) suggested that knowledge sharing, and use of common digital platforms lead to the cocreation of novel digital products, capabilities, and innovation. In the next section, we provide an overview of key characteristics of IT value cocreation in digital platform ecosystems.

## **4.2 Characteristics of IT value cocreation in digital platform ecosystems**

Next, we provide an overview of key characteristics of IT value cocreation beginning with the role of governance via orchestration, followed by coopetition in digital platform ecosystems, and concluding with the role of trust in IT value cocreation.

### **4.2.1 Governance via Orchestration**

Prior studies on innovation networks and ecosystems suggest the concepts of governance and orchestration in digital platform ecosystems or network-centric innovation environments (Adner, 2017; Ceccagnoli et al., 2012; Y. Zhao et al., 2019). Studies in this body of research have looked at the alignment of partners that enable value cocreation, as well as orchestration processes, such as managing and coordinating complementors to a platform (Boudreau & Jeppesen, 2015; Kapoor & Agarwal, 2017; Rietveld & Eggers, 2016; Y. Zhao et al., 2019). Grover & Kohli (2012) refer to IT-based *governance* in interfirm relationships as “the ability to coordinate, plan, control, and make decisions in interfirm relationships based on interorganizational systems (IOS)” (Mandrella et al., 2020, p. 393). Scholars suggest that appropriate governance is required to regulate internal and external factors to facilitate entrepreneurial actions (Siaw & Okorie, 2022), navigating tensions in digital platform ecosystems (Huber et al., 2017), enhance knowledge-

sharing and reduce transaction costs (Dyer et al., 2018), as well as establishing governance mechanisms to foster the cocreation of IT value (Hadaya & Cassivi, 2012).

As for *orchestration*, Teece (2007) suggests that the innovation process requires active orchestration of assets (tangible/intangible) by managers which aligns with our key findings. Teece (2007) further suggests that “Enterprises with good dynamic capabilities will have entrepreneurial management that is strategic in nature and achieves the value-enhancing orchestration of assets inside, between, and amongst enterprises and other institutions within the business ecosystem” (p. 26). Orchestration means that one or more firms are responsible for coordinating value cocreation and value appropriation (Dhanaraj & Parkhe, 2006; Nambisan & Sawhney, 2011) in the context of digital technologies and digital innovation (Nambisan et al., 2017). Orchestrating is a network capacity to actively organize innovation for future value creation (Busquets, 2010; Dhanaraj & Parkhe, 2006; Ritala, Armila, et al., 2009). Digital platform ecosystems serve a locus of innovation because it provides timely access to knowledge and resources that are otherwise unavailable, while also testing internal expertise and learning capabilities (Powell et al., 1996). Network innovation involves combining knowledge, technologies, and other resources across organizational boundaries (Davis, 2016; Davis & Eisenhardt, 2011). Network-centric innovation model which is prevalent in the technology sector is referred to as the hub-based model, orchestra model, or keystone model (Iansiti & Levien, 2004). Digital technologies similarly serve as the digital orchestrator which have the potential to match problems (or needs) with solutions, for instance Uber or Airbnb (Libert et al., 2014). The ‘network’ refers to different interrelated groups of actors (firms or other institutions) and their relations through agreements like joint-ventures, licensing, technological alliances and consortia (Powell et al., 1996; Sabatier et al., 2010). For instance, Kindström, Kowalkowski, & Sandberg (2013) connect orchestration to service innovations by

considering it as a reconfiguring capability among dynamic capabilities, and describe the complexity related to inclusion of external actors, including the critical managerial questions. However, Nätti, Hurmelinna-Laukkanen, & Johnston (2014) suggest that they do not go deeper into the specific orchestration activities, unlike Dhanaraj and Parkhe (2006), where they go deeper in explaining detailed orchestration processes (Nätti et al., 2014). Work by Nambisan & Sawhney (2011), building on Dhanaraj & Parkhe (2006), develops explicitly the link between platform leadership and orchestration processes in network-centric innovation (Gawer & Cusumano, 2014a).

Digital platforms such as Microsoft, Google, Amazon Web Services (AWS), Apple and Google play a central orchestrating role within a network of companies and individual developers (Gawer, 2014; Nambisan & Sawhney, 2011). In sum, digital platforms acting as the central hub raises questions around the processes involved to facilitate both value creation and value appropriation in their networks (Nambisan & Sawhney, 2011).

#### **4.2.2 Coopetition in digital platforms**

Grover and Kohli (2012) suggest that “competition has shifted towards digital environments with various cooperative arrangements...” and “co-creation among firms is likely to encounter partners who are also competitors” (p. 231). However, as these firms continue to cocreate IT value, their relationship morphs into competitor-to-competitor relationships, which we refer to as coopetition. Nalebuff and Brandenburger’s (1996) seminal work used game theory to develop the concept of coopetition. Coopetition is defined as a “dyadic and paradoxical relationship that emerges when two firms cooperate in some activities, such as in a strategic alliance, and at the same time compete with each other in other activities” (Bengtsson & Kock, 2000, p. 416). Some scholars view coopetition as a strategy to achieve market power (Pereira et al., 2017), for example establishing a strategic cooperation arrangement with competitors in firms

of emerging technologies (Brandenburger & Nalebuff, 1996). Firms tend to start cooperative relationships to create new technologies, add shareholder value, and explore new markets but then firms start competing to achieve greater market share (Pereira et al., 2017). While other scholars suggest the relation between firms' innovative capacity, involvement in cooperation arrangements, and productivity gains (Brandenburger & Nalebuff, 1996; Dussauge et al., 2000; Pereira et al., 2017; Tether, 2002), as well as to develop incremental innovation – generating new innovations especially in high-tech industries (Ritala & Hurmelinna-Laukkanen, 2009). Although, ultimately, there is a consensus among scholars advocating that a key motivation for competitors to engage in strategic cooperative arrangements are to generate value add and improve economic performance and market share (Liu, 2013; Rusko, 2011). Similarly, cooperation relationships between platforms involves cooperation and competition and, at the same time, platforms collaborate and continue to compete through prices for the same customers (Mantena & Saha, 2012) and to achieve competitive advantage (Rademakers & McKnight, 1998). For instance, (Ritala & Hurmelinna-Laukkanen, 2013) concluded that potential absorptive capacity and appropriability regime of the firm improves incremental innovations in cooperation. The authors emphasize on securing core knowledge, maintaining a pulse on the emerging novel innovations and market opportunities, which tends to be an indirect benefit of safe knowledge change between rivals (Pereira et al., 2017). Similar to Teece's (2018) view on continuously sensing and seizing new technical innovation opportunities in the marketplace, (Ritala & Hurmelinna-Laukkanen, 2013) argues that firms compete in a platform of continuous change and uncertainty and need to stay up to date in terms of knowledge basis in order to be competitive, therefore, collaborating with external competitors is of extreme importance. Although despite the benefits of cooperation during innovation activity, it is not a risk-free environment as it encourages opportunism and knowledge leakages (Cassiman

et al., 2009; Dyer & Singh, 1998; Pereira et al., 2017). For example, Zhu and Liu's empirical evidence suggests that Amazon's entry strategy is likely premised on acquiring new information after forming partnerships with third-party sellers.

In the context of digital platform ecosystems, platforms represent the center of the ecosystem of different actors to foster value cocreation and facilitate supply and demand (Lusch & Nambisan, 2015; McIntyre & Srinivasan, 2017). Ecosystems have morphed from traditional inter-firm competition to coopetition, which scholars refer to as a joint approach and simultaneous competition and cooperation between actors (Hein, Weking, et al., 2019; Moore, 1996; Pereira et al., 2017). Prominent examples of coopetitive relationships between Dell Computers and IBM and SAP with Oracle (Walley, 2007) – including modern coopetitive relationships between Microsoft and Snowflake or Netflix and Amazon Video.

Dyer et al. (2018) suggests that taking a dynamic lens is important because it offers better insights into understanding what drives cooperation for value creation and what leads to competition for value capture (p. 2). Researchers in coopetition literature (Dagnino & Padula, 2002; Lado et al., 1997; Mantena & Saha, 2012; Schiavone & Simoni, 2011) have studied how the role technology plays in shaping competition and collaboration between platforms with heterogeneous capabilities. Collaboration is most likely when the rival platforms have significantly different technological capabilities; and cooperation between platforms is unlikely when the rivals have similar technological capabilities (Mantena & Saha, 2012). Therefore, establishing trust and safeguards (e.g., goodwill trust) in competitive, multi-firm environments lowers transaction costs, fosters knowledge and information sharing, and enhances value creation (Dyer et al., 2018).

### 4.2.3 Trust and mutuality in IT value cocreation

In Dyer and Singh's (1998) seminal paper, they propose that value is cocreated when relation-specific assets are safeguarded to limit any opportunism from participating alliances, and formal or informal safeguards are relational agreements based on trust. Trust between firms refers to "the confidence that a partner will not exploit the vulnerabilities of the other" (Barney & Hansen, 1994, p. 209).

Romero and Molina (2011) found in their literature analysis that trust had been cited as an important factor for the effective value cocreation. They suggest that trust is a key resource that enables firms to achieve sustainable competitive advantage. Romero and Molina (2011) define trust as "a bilateral process that requires mutual commitment and endeavours of organisations and customers when attempting to keep their promises" (p.14).

Trust and safeguards influence transaction costs in alliances. Formal safeguards increase overall transaction costs because of its duration and are far more complex. On the other hand, informal safeguards reduce transaction costs among partners. For example, social strategic networks promote trust and reduce transaction costs (Gulati et al., 2000) because networks enable firms to get better knowledge and information on each other and learn about each other's resources, capabilities, and strengths. Grover and Kohli (2012) suggest that "IT enables these safeguards by providing greater transparency of asset usage as well as lower transaction costs among partners" (p. 226). IT improves the relationship between participating firms through transparent and frequent use of assets which lead to value cocreation of products and services (Grover & Kohli, 2012).

As firms cocreate value and capture mutual benefits through transparency and high use of assets, exactly how does trust emerge in collaborative and cooperative environments? One way to answer this question is by understanding the role of mutuality and cooperation in collaborative

network environments. Cooperation in the context of value cocreation refers to “voluntary arrangements between firms involving exchange, sharing, or co-development of products, technologies, or services” (Gulati, 1998, p. 293). Firms cooperate for a number of reasons, including to capture new technological development and/or tap into complementary capabilities (Gnyawali & Ryan Charleton, 2018). Mutuality refers to “a reciprocal cooperative intent between partners” (Gnyawali & Ryan Charleton, 2018, p. 2516). Thus, relational governance emerges through trust, social relations, and shared norms as firms cooperate over time (Cao & Lumineau, 2015; Carson et al., 2006). Relational governance facilitates mutual communication and strengthens the cooperative relationship (Dyer & Singh, 1998; Gnyawali & Ryan Charleton, 2018) and, as mutuality establishes common understanding through trust, then participating firms are more comfortable with knowledge sharing and exchanging resources with each other (Gnyawali & Ryan Charleton, 2018). Further, relational norms are correlated with trust and commitment, and can help establish a trusting relationship and encourage a greater customer involvement throughout the value cocreation process (Bharti et al., 2015).

Rose and Schlichter (2013) investigate evolving trust relationships in a case study of a large hospital system implementation. They found that trust is an important factor for successful implementation of large information systems, such as enterprise resource planning (ERP) systems because these implementations projects impact the legitimate interests of multiple stakeholders. The authors suggest that the relationships suffer over time during the project journey, but in the end the project was stabilized and met its goals. They developed approaches for managing dynamic trust relationships in implementation projects, namely decoupling and re-engaging (Rose & Schlichter, 2013).

Pera, Occhiocupo, and Clarke (2016) explore the motives and resources for value cocreation within a multi-stakeholder ecosystem. Using a case study design, they found that motives to participate in value cocreation are reputation, experimentation, and relationship building. Furthermore, their study suggest that trust, inclusiveness, and openness are fundamental enablers of multi-stakeholder value cocreation (Pera et al., 2016). We now shift into the theoretical lenses that we adopted in order to answer the research questions for this dissertation.

### 4.3 Theoretical lenses

Motivated by the literature discussed above, specifically the phenomenon of IT value cocreation and characteristics of digital platform ecosystems, this dissertation aims to depict how firms cocreate IT value and how firms balance the cooperative nature of IT-based value cocreation in digital platform ecosystems. Specifically, we ask the following research questions: **How do firms cocreate IT value in digital platform ecosystems?**

- ❖ *How is IT value cocreated in digital platform ecosystems and what are the processes that emerge?*
- ❖ *How do firms manage cooperation and competition when cocreating IT value in digital platforms?*

In this section, we provide an overview of the theoretical lenses adopted to address the research questions: dynamics capabilities, process modeling, and we conclude with a view of the paradox literature.

#### 4.3.1 Dynamic capabilities

Dynamic capabilities (DC) is employed as a theoretical lens to examine digital platforms and value cocreation research (Ceccagnoli et al., 2012; Haim Faridian & Neubaum, 2021; Helfat & Raubitschek, 2018; Siaw & Okorie, 2022). Dynamic capabilities are defined as “the ability to

integrate, build, and reconfigure internal and external competencies to address rapidly-changing environments” (Teece et al., 1997 p. 517). Teece (2018, p. 40) identifies two levels of capabilities: ordinary/operational capabilities (routine activities, governance) and dynamic capabilities of higher order for sensing (new opportunities), seizing (scaling opportunities) and transforming business activities and capabilities (utilization of opportunities) (Brink, 2018). Dynamic capabilities can be “disaggregated into the capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise’s intangible and tangible assets” (Teece, 2007, p. 1319). A key dimension of DC involves ‘processes’ which refers to managerial and organizational processes such as distinctive routines or patterns and the way things get done in the firm (Teece et al., 1997). ‘Positions’ refer to current resources such as capital, staff, technology, infrastructure, networks, etc. (Sunder et al., 2019; Teece et al., 1997). According to Teece et al., (1997), organizational processes play three roles: coordination/integration (efficient/effective internal coordination), learning (a process of repetition/experimentation enables tasks to be performed better/faster), and reconfiguration (ability to sense the need to reconfigure the firm’s asset structure).

Dynamic capabilities are imperative for organizations because firms win or lose their competitiveness in high-velocity and fast changing environments (Sunder et al., 2019). Researchers (Siaw & Okorie, 2022) suggest research is yet establish the processes through which firms develop intrapreneurial capabilities on their platforms to enable value cocreation with other firms. Therefore, understanding the value cocreation between firms on platform-based ecosystems requires a deeper evaluation of the DC framework and dimensions. Teece (2018) offers a simplified DC framework but does not go into any detail on how dynamic capabilities are important for

platform leaders, the types of DC firms require, or how DCs enable firms to create and capture value (Helfat & Raubitschek, 2018). Prior studies examined which DCs critically underpin value creation and capture by platform leaders or to the platform orchestrator and ignore other actors on the platform who may play a role in the value capture and cocreation process (Haim Faridian & Neubaum, 2021). Therefore, a research gap is present, and we build on Teece (2018) and Grover and Kohli (2012) and prior studies to identify the processes of IT-based value cocreation in digital platform ecosystems.

#### **4.3.2 Process modeling**

In the context of dynamic capabilities, ‘processes’ refers to distinctive routines and the way things get done in an organization (Teece et al., 1997). Processes and process modeling are part of a larger business process management (BPM) lifecycle. BPM is “concerned with the design, execution, monitoring, and improvement of business processes. Systems that support the enactment and execution of processes have extensively been used by companies to streamline and automate intra-organizational processes (Mendling et al., 2018). A BPM lifecycle includes multiple phases: identification, discovery, analysis, redesign, implementation, execution, monitoring, and adaptation (Dumas et al., 2018). While processes are the way things get done in a firm, a process can be described and decomposed as events, activities, and choices over time (Langley, 1999) or as a logical order of work activities forming process steps (Hönigsberg, 2020; van der Aalst et al., 2016).

Like IT-based value cocreation where multiple firms and actors are required to cocreate digital technologies, processes include multiple actors involved in the activities that are performed over time (Davenport 1993). Processes are triggered by an event; therefore a process converts an input into outputs (business outcomes) through value-added steps (Davenport, 1993; van der Aalst

et al., 2016). Knowledge-sharing and information flow plays an important role in process modelling which allows firms to connect different activities in a process (Aguilar-Savén, 2004). Another important element in business processes is measuring value through key performance indicators (KPIs). Researchers suggest that KPIs (e.g., quality, time, costs) are common ways to evaluate process performance, but it is often unclear how research results and related technology contribute to better KPIs (Dumas et al., 2018; van der Aalst et al., 2016). Most IT value research focuses on the outcome of the value creation process, not the process itself. This leads to a limited understanding of why and how value cocreation happens (Westergren et al., 2019, p. 2). We therefore amplify IT-based value cocreation lifecycle by capturing the inputs that trigger the value cocreation journey, modelling the key processes that influence and shape the cocreation of IT and digital solutions, and the associated outputs (business outcomes). To further clarify how value is measured in IT-based value cocreation, we employ (Amit & Zott, 2001) considerations of how value is categorized: *efficiency* (cost reduction and offering higher benefits to customers), *novelty* (novel and innovative solutions), *complementarities* (bundling different products and services), and *lock-in* (reducing customer churn, sustaining lasting and ‘sticky’ relationship with customers), complementarities (offering bundles of products, services). Although in today’s hypercompetitive and dynamic environments, IT value cocreation in multi-firm environments – where firms both cooperate and compete – may pose an advantage and challenge for organizations, leading to potential cooperative paradoxical tensions.

### **4.3.3 Paradoxes**

Smith and Lewis defined paradox as involving “contradictory yet interrelated elements that exist simultaneously and persist over time” (2011: 387). Lewis (2000) adds that “elements that seem logical in isolation but absurd and irrational when appearing simultaneously” (pg. 760).

Managerial responses for resolving paradoxical tensions are consistent with Gregory et al (2015) and Smith and Lewis's (2011) observations that "confronting paradoxical tensions involves iterating between choosing one of the two demands at one time while working toward an accommodation and integration of the two demands" (Gregory et al., 2015, p. 75). We employ Oliver's (1991) strategic responses and tactics for resolving paradoxical tensions: *acquiesce (comply)*, *compromise (balance, pacify)*, *avoid*, *defy (challenge)*.

In March's (1991) seminal work, he links both knowledge management and innovation to explain tensions involving exploration and exploitation (Andriopoulos & Lewis, 2009). Exploitation seeks efficiency and exploring ways to improve products and services, while exploration involves searching for novel recombination of knowledge (Wadhwa & Kotha, 2006). Different studies have explained the complexity of the tensions and how these have intensified management challenges (Andriopoulos & Lewis, 2009). For example, Andriopoulos and Lewis (2009) investigated exploitation-exploration tensions, presented as paradoxes of innovation – including profit emphasis versus breakthrough emphasis or tight coupling versus loose coupling.

Coopetition is considered as value-net, dyadic relationship and paradox (Bengtsson & Kock, 2000; Brandenburger & Nalebuff, 1996; Garri, 2021). Bouncken et al., (2015) define coopetition as "a strategic and dynamic process in which economic actors jointly create value through cooperative interaction, while they simultaneously compete to capture part of that value" (Bouncken et al., 2015, p. 591). While literature explored coopetition's foundation and its related processes and outcomes, coopetition research remains composed of loosely integrated themes (Bengtsson & Kock, 2000; Dorn et al., 2016), reflecting a division and limited focus (Bouncken et al., 2015; Garri, 2021). Further, current research on coopetition at multiple levels remains short (Bengtsson & Raza-Ullah, 2016) and there is a need to provide tools that can help firms to assess

coopetitive relationships, underlying objectives and challenges, and approaches to sustain coopetitive strategies and relations. Managing coopetitive tension is critical as more organizations develop resources and capabilities in digital platform ecosystems which often involve direct competitors. Studies have demonstrated that value creation potential of coopetitive ecosystems is greater than those of non-competitive multi-firm collaboration (Garri, 2021). Coopetition is becoming increasingly important for firms to gain access to specialized skills and complementary resources (Bengtsson & Kock, 2000), improve their competitiveness through the combination of strategic initiatives (Gnyawali & Ryan Charleton, 2018), and for growth, profitability, and survival (Granata et al., 2017). To add more complexity to coopetitive tensions, digital platform ecosystems has changed the landscape from traditional inter-firm competition to a joint approach of simultaneous cooperation and competition (coopetition) between multiple firms and actors (Adner, 2017; Hein, Weking, et al., 2019; Pereira et al., 2017).

## **5 Chapter 3: Research Design**

We adopt a multiple case study and apply the grounded theory methodology (Strauss & Corbin, 1990) to analyze how firms cocreate IT value in digital platforms. This chapter describes the dissertation's research methodology. First, we explain the rationale for using qualitative methodology. I then follow with a context description of the multiple case study design, detailed case selection, and setting. The last sections include the data collection process and methods, and data management used – including the analysis followed.

### **5.1 Case Study Design**

To achieve the research objectives, a multiple case study approach was selected for the following reasons. An exploratory case study is preferred in investigations of such how questions because of its descriptive nature (Yin, 2013). Further, case study design is well-suited because of the collaborative nature of value cocreation endeavors in multi-firm environments to tease out anecdotal evidence (Graebner & Eisenhardt, 2004). Second, a case study approach is appropriate to undertake in-depth studies of complex social phenomena (Eisenhardt, 1989; Yin, 2009) and is commonly used in the area of information systems (Darke et al., 1998). Third, new theories from multiple case studies are more generalizable than theories from single-case studies, granting an opportunity for theory extension and validation from the research community (Davis & Eisenhardt, 2011), including introducing theoretical constructs and frameworks (Graebner & Eisenhardt, 2004). Further, several scholars have employed case study design to further explore IT value cocreation topics across several disciplines (Arenas et al., 2019; Ikävalko et al., 2018; Wilkin et al., 2013; Xie et al., 2016). The units of analysis are at the project level, where two or more firms are creating new digital products and services.

Selecting the number of cases is critical in case study research projects (Davis & Eisenhardt, 2011), and each case needs to be selected thoughtfully to allow for replication and anticipate contrasting results (Yin, 2009). For example, the comparison of multiple cases allows researchers to draw better conclusions regarding value cocreation practices by comparing the key findings from individual cases (Hein, Weking, et al., 2019; Yin, 2013).

## **5.2 Research Setting**

The research setting is the computing and communication industries centered around two digital platform ecosystems. A fundamental reason for selecting these platforms in the computing and communication industry is that they produce a broad range of IT products (e.g., internet software, cloud computing solutions). Davis & Eisenhardt (2011) suggest that the computing and communication organizational field is appropriate research site because the convergence of communications and computing created multiple opportunities for innovation that required technological collaboration across sector boundaries between organizations like semiconductor, hardware, and software. Secondly, firms participating in the platforms are members of a network-centric innovation ecosystem and considered leaders in their market segments. Third, the platforms have a long history of orchestrating innovation networks with their customers to exploit market opportunities and cocreate IT value. These firms are network members in innovation networks and are able to use or reuse technological and innovation assets to facilitate their own innovation (Iansiti & Levien, 2004).

To answer the two research questions in scope, two digital platform ecosystems are chosen from the computing and communication industry. Two cases are in scope, and each case is composed of one digital platform where multiple firms are involved to cocreate IT value (See Figures 3, 4)

### 5.3 Case Descriptions

Each case is independent and involves firms that have participated in digital platforms to cocreate IT value. All firms involved dedicated resources, assets, and shared knowledge to cocreate digital technologies. They entered into collaborative, multi-firm arrangements to change the nature of their offerings and value propositions in their respective industries and markets. The firms were selected using three criteria. First, the selected case firms have developed innovative products or services by leveraging platform-based, emerging technologies to cocreate IT value. Second, the chosen case firms are considered market leaders in their market segments. Third, the firms come from various industries and vary in revenue and size. Each case is independent and involves two or more network members that have partnered with a hub firm with the intention to design digital products to exploit market opportunities and cocreate IT value. A hub firm owns and manages the digital assets and core innovation infrastructure (e.g., cloud computing vendor). The hub firm's primary responsibility are to create opportunities for and facilitate innovation in a network, coordinate and align processes and outputs of the members, and manage equitable distribution of value across its members (Dhanaraj & Parkhe, 2006; Nambisan & Sawhney, 2011).

#### 5.3.1 Case 1: *Developing a SaaS on a cloud platform*

This scenario involves three different firms: customer (product owner in the High-tech industry), cloud computing vendor (digital platform), and professional services partner (acting as the system integrator and technical advisors) – see Figure 3. The objectives of the project are 1) to migrate a global collaboration platform's customer support portal from an on-premises environment to the cloud; and 2) develop a security, cloud-based software-as-a-service (SaaS) application to serve the customer's (product owner) internal end users (tenants), which holds

highly sensitive security data. The product owner is consuming cloud services from the cloud computing vendor. Further, the product owner partnered with a professional services firm to bring specialized skills and knowledge to speed up the migration journey to the cloud. This professional services firm brings decades of cloud migration expertise and proven methodologies for bringing thousands of applications to the cloud. This level of expertise allows the product owner to increase their confidence, reduce organizational risk, and see business results much faster.

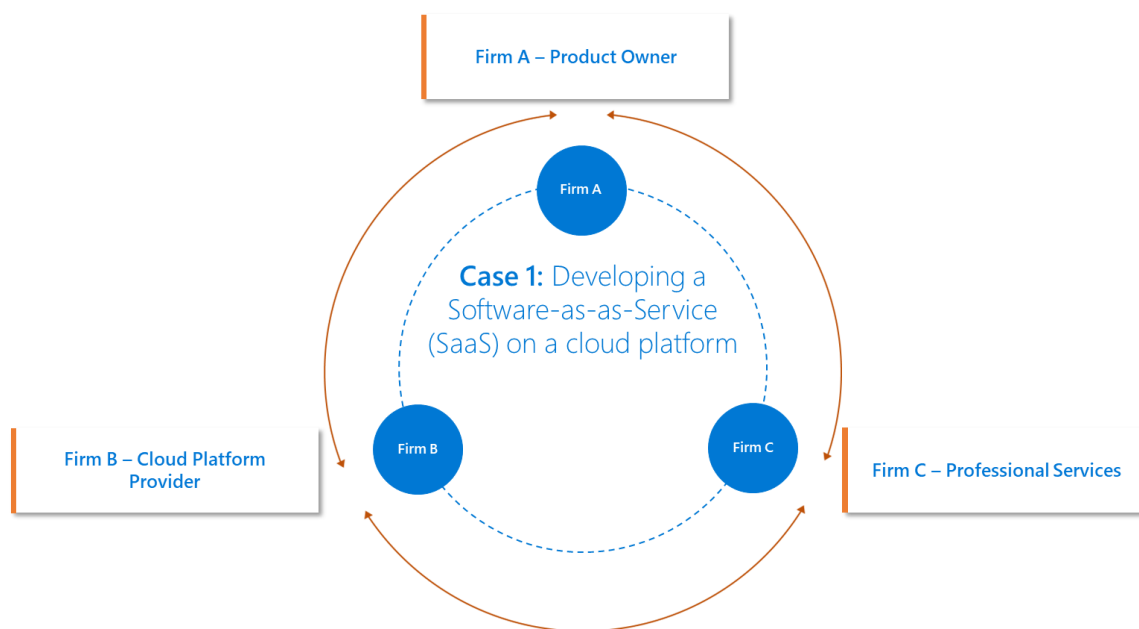


Figure 3: Case 1 - Cloud Platform Provider

### 5.3.2 Case 2: Automating processes in a business process management (BPM) platform

This scenario involves three different firms: customer (product owner is a large cloud infrastructure provider), BPM platform (digital platform), and consulting partner (system integrator acting as the deep technical expert in the BPM platform) – see Figure 4. The objective of this project is to automate key functions of the customer’s (product owner) data center network capacity. The product owner’s intent was to implement end-to-end automation and orchestration across multiple delivery functions, as well as external integrations with important vendors to streamline business processes. The product owner also engaged a systems integrator, which acted

as the system integrator by bringing subject matter experts to bring specialized skills and speed the project. The ability to provide network capacity on time is critical to ensure the product owner's customers always have the access they need to business-critical applications and services.

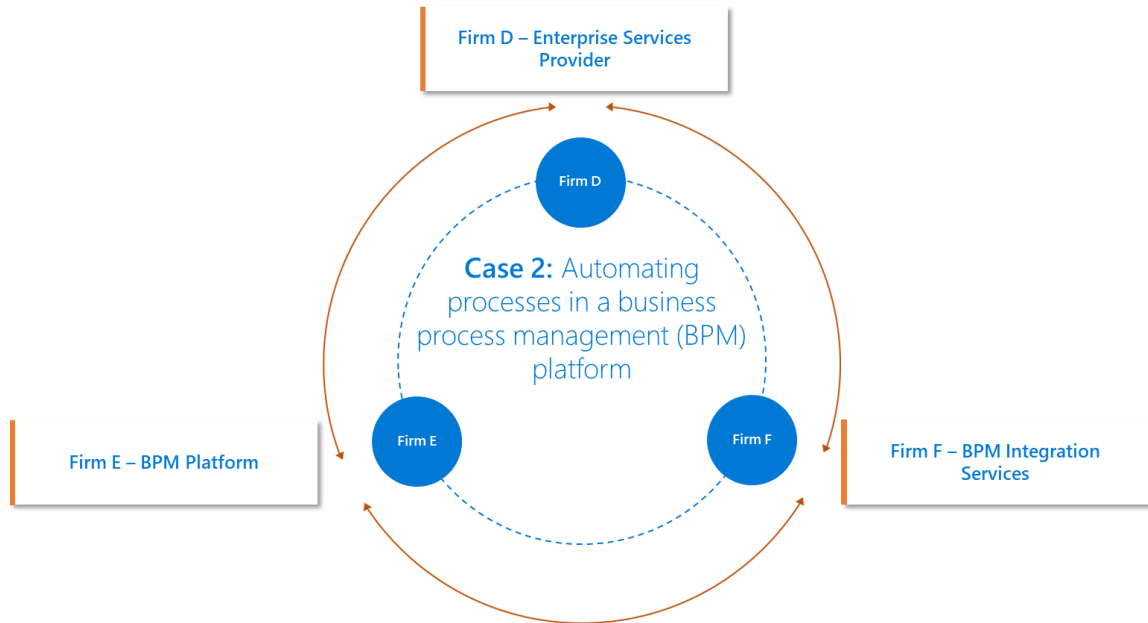


Figure 4: Case 2 - BPM Platform

#### 5.4 Data Collection

Although the role of digital platforms in value cocreation between firms and their partners has been studied (Ceccagnoli et al., 2012), the role of customers remains unexplored (Xie et al., 2016). Similarly, the existing literature concerns dyads (e.g., customer, provider) but neglects multi-firm relationships, such as triadic arrangements (e.g., platform provider, product owner, and other firms collaborating, such as management consulting and professional services firms, system integrators, etc.) to achieve business outcomes (Davis, 2016). Therefore, given the emerging nature of IT value cocreation in digital platform ecosystems where multiple firms join forces to cocreate digital solutions, we designed a multiple case study to collect data to answer our research questions. Qualitative data were collected from interviews conducted at large, global enterprises playing a major role in the digital platform ecosystems. Our multiple case study leveraged Grover and

Kohli's (2012) IT value cocreation model served as the data collection instrument (Appendix 1) while also complementing it with dynamics capability and paradox literature. The questions were designed in an iterative manner and validated by receiving input from 1 faculty (my Advisor) holding a Ph.D. in Information Systems.

We collected data on two digital platforms, each one with three participating organizations from 2019 to 2021. Two of the largest public cloud providers in the world, including a large professional services firm specializing in the cloud migration and digital transformation domain. Another firm is a leader in the manufacturing of high-technology products and services. A BPM Platform firm is recognized as a leader in customer relationship management (CRM) and business process automation capabilities. We had an informant which we discarded from the analysis as it did not fit the analysis and was considered an outlier to our research objectives. This informant was involved mainly in partner alliances and business development and has been engaged by global system integrators to work on commercial deals in the enterprise cloud data management space. This last informant offered a unique perspective where a different point of view did not strengthen the reliability of our research. Details of each organization we examined are described in Tables 1 and 2. The interviews are broken down between the following selected informants:

**Case 1: Digital Platform Ecosystem – Cloud Platform Provider**

1. **Firm A**, Product Owner (customer)
2. **Firm B**, Cloud Platform Provider (Digital platform)
3. **Firm C**, Professional Services Firm (System integrator)

**Case 2: Digital Platform Ecosystem – BPM Platform**

4. **Firm D**, Enterprise Services Provider (customer)
5. **Firm E**, BPM Platform (Digital platform)

6. **Firm F**, BPM Integration Services Firm (System integrator)

So we could gain more reliable theory (Davis & Eisenhardt, 2011; Eisenhardt, 1989), the informants included executives and mid-management team members with experience in digital technology collaboration and IT value cocreation endeavors. Interviewees were selected based on their direct experience and involvement on innovation projects – and, most importantly, their deep experience in IT-based value cocreation initiatives, tenure in their organization, and diverse expertise (e.g., product development, consultants, strategic alliances executives, architects).

We started the data collection in November of 2019. Recording the audio of interviews is a suggested technique, as it allows for a complete description of the interviewees' responses and comments (Darke et al., 1998). All formal interviews were conducted virtually and recorded using videoconferencing tools (e.g., Zoom). The interviews were semi-structured, guided by a list of questions provided in Appendix 1. The interviews were designed to understand how firms cocreate IT value when they participate in digital platforms. Each interview lasted about 38 minutes on average and were later transcribed. Even though all informants agreed to be recorded, extensive notes were also taken during the interview. In total, we collected data based on ( $n = 38$ ) interviews. Two additional interviews were scheduled which we used for clarification and validation, which increased the number of interviews to ( $n = 40$ ). Formal interviews were the primary data source for the study, but also involved triangulation of data from multiple sources to improve data validity (Yin, 2013) – including reports and blogs from the organizations' websites and external data (e.g., press releases and co-marketing events). Part of the data collection process also involved reviewing publicly available posts published by the focal organizations to validate different aspects of their go-to-market and IT cocreation initiatives.

Table 1: Case 1 – Details of Data Collection and Profiles of informants.

Firms	Recording time	No. of interviews	Job Title	No. of websites	Other sources
Cloud Platform Provider	36:19	1	Enterprise Support Leader	4	Yes
Cloud Platform Provider	50:18	1	Senior Technical Program Manager	4	Yes
Cloud Platform Provider	41:58	1	Partner Solutions Architect	4	Yes
Cloud Platform Provider	46:48	1	Solutions Architect	4	Yes
Cloud Platform Provider	36:21	1	Global Business Development Manager	4	Yes
Cloud Platform Provider	24:37 30:17	2	Independent Software Vendor (ISV) Sales and Business Development	4	Yes
System Integrator	37:49	1	Principal Solutions Architect	4	Yes
System Integrator	61:35	1	Principal Data Scientist	4	Yes
System Integrator	34:45	1	Global Enterprise Service Manager	4	Yes
System Integrator	23:50 24:01	2	Partner Business Development Manager	4	Yes
Product Owner [Customer]	44:20	1	Senior Engineering Manager for Collaboration Platforms	3	Yes
Product Owner [Customer]	54:37	1	Solution Engineer & Cloud Architect	3	Yes
Product Owner [Customer]	44:11	1	Senior Director of Information Security	3	Yes
Product Owner [Customer]	33:45	1	Program Manager for Architecture & Security Technologies	3	Yes

Digital Platform SMEs	32:48	1	Director Channel Sales and Strategic Alliances	2	Yes
Total	658:19	17		54	

Table 2: Case 2 – Details of Data Collection and Profiles of informants.

Firms	Recording time	No. of interviews	Job Title	No. of websites	Other sources
Enterprise Services Provider [Customer]	56:11	1	Technical Program Manager, BPM Application Development	2	Yes
Enterprise Services Provider [Customer]	1:03:25	1	Technical Program Manager, Robotics Process Automation (RPA)	3	Yes
Enterprise Services Provider [Customer]	29:10	1	Director, Global Network Deployment Operations	1	Yes
Enterprise Services Provider [Customer]	29:38 7:57	2	Program Manager Lead, Network Deployment	2	Yes
Enterprise Services Provider [Customer]	31:57	1	Senior Software Development Manager	2	Yes
Enterprise Services Provider [Customer]	26:03	2	Senior Loyalty Manager Senior Product Manager	2	Yes
Enterprise Services Provider [Customer]	43:44	1	Senior Manager Program Operations	2	Yes
Enterprise Services Provider [Customer]	43:51	1	Software Development Manager	1	Yes

Product Owner [Customer] BPM Platform	38:11	2	VP Information Technology (Customer) Senior Product Manager (Customer) Senior Customer Success Manager (BPM Platform)	1	Yes
Product Owner [Customer] BPM Platform	22:10	2	Process Optimization Program Lead (Customer) Technical Program Manager, Global Engineering (Customer) Consulting Solutions Executive	2	Yes
BPM Platform	1:03:25	1	VP, Robotics Process Automation, BPM Platform	4	Yes
BPM Platform	30:39	1	Director, Decisioning & AI Solutions	4	Yes
BPM Platform	21:28	1	Director, Partner & Alliances	4	Yes
BPM Platform	25:51	2	VP Strategy, BPM Platform Lead Solutions Consultant	4	Yes
BPM Platform	43:22	1	Product Marketing Director, BPM Platform	4	Yes
BPM Platform System Integrator	34:35	2	Account Manager (BPM Platform) Lead Business Architect (SI)	3	Yes
BPM Platform System Integrator	57:29	2	VP, Professional Services, System Integrator (SI)	4	Yes
	31:19		Senior Director, Sales (BPM Platform) Account Manager (BPM Platform) Director Professional Services (BPM Platform)		
BPM Platform System Integrator	26:26	3	Senior Product Manager (BPM Platform)	4	Yes
	17:01		Customer Success Manager (BPM Platform)		
	24:55		Lead Business Architect (SI)		
System Integrator	18:59	1	Associate VP, Professional Services	1	Yes
System Integrator	25:48	2	Lead System Architect Principal Architect Lead	2	Yes
System Integrator	33:06	2	Business Architect Program Manager Lead	2	Yes
System Integrator + Customer	22:48	3	Lead System Architect (SI) Program Manager Lead (SI)	2	Yes

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			Program Manager Lead, Network Deployment (Customer)		
System Integrator	11:00	1	Scrum Master, RPA Architect & Developer	1	Yes
Total	755:44:50	23		57	

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## **5.5 Data Analysis**

We applied an iterative approach to data analysis building by constantly referencing data and literature using grounded theory approach (Gioia et al., 2013; Strauss & Corbin, 1990) with field observations and semi-structured interviews as our primary data sources. Chapters 4 and 5 each describe the detailed analysis used for their respective findings.

## 6 Chapter 4: Uncovering the *Processes* of IT Value Cocreation

*Note:* Preliminary version of this chapter was presented at the Italian chapter of AIS (ItAIS) and Mediterranean Conference on Information Systems (MCIS) 2022 and was awarded **BEST PAPERS, receiving the “SANDRO D’ATRI” AWARD.**

Reference:

Jimenez, Yasalde and Valogianni, Konstantina. “Uncovering The Processes of IT Value Cocreation in Digital Platform Ecosystems” (2022). MCIS 2022 Proceedings. Catanzaro, Italy. October 14-15th, 2022.

Abstract

Pervasive digitization and complex business challenges encourage companies to collaborate, build innovative digital solutions, and cocreate IT value in multi-firm environments. Despite much research extensively focused on the outcome of value cocreation, emphasizing the concept of cocreating with customers, what remains under-investigated is the ‘process’ of IT value cocreation in digital platform ecosystems with customers, partners, and competitors. This research investigates what are the key processes of IT value cocreation in digital platform ecosystems. We draw on dynamic capabilities theory to examine value cocreation in two digital platforms to tease out key processes of IT-based value cocreation in multi-firm, complex environments. We advance a theoretical framework that helps us understand how firms manage the IT cocreation journey by sensing, seizing, and reconfiguring competencies to address rapidly changing environments. This research provides an emerging model and theoretical in-sights into extant literature about the nine processes involved in IT value cocreation in digital platform ecosystems, also opening up new avenues for future research.

**Key words:** Dynamics capabilities, IT value cocreation, digital platforms.

## 6.1 Introduction

Recently researchers across disciplines have been exploring how digitalization shapes the dynamic of value cocreation (Autio & Thomas, 2020). Despite of extant research, little has been shed regarding how firms cocreate IT value in digital platforms (Grover & Kohli, 2012) and researchers in the digital platforms community (de Reuver et al., 2018; Gawer & Cusumano, 2014b; Tiwana et al., 2010; Y. Yoo, 2010) claim it is necessary to expand our understanding of how firms innovate together, and the challenges and opportunities in collaborative environments. We still have a significant gap for contribution to IT value cocreation research as the process of value cocreation process in a network remains ambiguous (Kim et al., 2019). Most IT-value research “concentrates on the outcome of the value creation process, not the process itself, leading to a lack of insights into why and how value cocreation occurs” (Westergren et al., 2019, p. 2). Further, Grover and Kohli’s (2012) research agenda calls to focus on the “process” of IT-based value cocreation. They further suggest that while conceptually the idea of IT-based value cocreation seems simple and intuitive, the process of successfully delivering IT value cocreation poses several challenges – as well as opportunities. They therefore ask key fundamental questions, which are “How do firms select partners?” And “How do relationships evolve?” (p. 231). What are the intangible inputs to cocreate tangible value; and lastly, “...are there stages that need to be followed that articulate the necessary conditions that must be in place before moving to the next stage? (p. 231). We focus on the “process-based” question by employing a dynamic capabilities theoretical lens to tease out the IT-based value cocreation processes involved between firms that are participating in digital platform ecosystems. Therefore, to better understand the nuances of IT value cocreation between firms, it is important to capture key processes and the business outcomes in digital platforms. We therefore draw on dynamic capabilities theory (Teece, 2018; Teece et al.,

1997) to examine value cocreation in two digital platforms to tease out key processes of IT-based value cocreation in multi-firm, complex environments. Teece et al., (1997) refers to “Processes” as managerial and organizational processes, “the way things are done in the firm” (p. 518). Accordingly, we ask the following research question:

***RQ: How is IT value cocreated in digital platform ecosystems and what are the processes that emerge?***

To answer the research question, we conducted a multiple case study involving two digital platforms and analyzed how they build joint digital solutions and identified processes to cocreate IT value in digital platform ecosystems.

## **6.2 Analytical Framework**

In this section we explain the approach and steps taken to conduct the data analysis. We thoroughly analyzed both cases, moved from raw data toward identification of key processes involved when cocreating IT value cocreation in digital platform ecosystems.

We applied an iterative approach to data analysis building by constantly referencing data and literature using grounded theory approach (Gioia et al., 2013; Strauss & Corbin, 1990). We employed a qualitative abductive analysis to compare the case studies with existing frameworks and develop theoretical insights (Locke, 2007). An abductive analysis approach “rests on the cultivation of anomalous and surprising empirical findings against a background of multiple existing sociological theories and through systematic methodological analysis” (Timmermans & Tavory, 2012, p. 169), and is recognized as a valid approach to examine management phenomena (Behfar & Okhuysen, 2018). We approached our study with the theoretical background of dynamic capabilities framed by Teece et al., (1997), and analyzed our data findings from established theories. Primary data collected from the fieldwork was coded for analysis with the assistance of NVivo.

All interviews were audio recorded and transcribed into texts, which were then processed in NVivo. This step required constant comparison between the transcriptions and audios to ensure clarity, accuracy, and consistency. Further, data were examined through a process of three rounds of coding, following the guidelines of Gioia, Corley, & Hamilton (2012) to strengthen and guarantee rigor in our research. We also paid attention to any contradictory statements within the same transcript, performing constant comparison (Strauss & Corbin, 1994) and reaching theoretical saturation (Glaser & Strauss, 1967). Gioia et al (2012) suggests that at this stage it is normal to feel “lost” and that is precisely what occurred to us as we had a large sheer number of categories which became overwhelming. Getting “lost” in the data forced us to think about how each of the categories relate to one another, conceptually. We started asking more pointed, theory-generating questions (Myers, 2013), and theoretical concepts, themes and patterns began to emerge from the data analysis. We conceptualized the second-order codes into aggregate dimensions, resulting in processes relating dynamic capabilities. Figure 5 illustrates the data structure emerged from our data analysis, following Gioia et al.’s (2012) guidelines.

### **6.2.1 Stage 1: 1<sup>st</sup> Order Concepts**

The first round involved the coding of first-order codes. Within each case, we first took a birds-view approach to gain an understanding of the data and start uncovering patterns and nuances of how firms cocreate IT value, identifying organizational routines and processes. We immersed ourselves with the data by reading through the transcripts and listening to each interview repeatedly. The goal was to identify an inventory of high-level ideas, as well as identify references between the data and the theoretical framework for cocreating IT value. These ideas and references were documented as memos in NVivo. Gioia et al (2012) mentions that the “number of categories tends to explode” in the 1<sup>st</sup> order analysis, and, in our case, we identified more than 300 NVivo codes.

Combing through this large bucket of categories we identified patterns, organizational routines, assets, and processes using language indicators such as: *'to deploy, to develop, to test'*, *'integration with that capability'*, *'orchestration'*, *'integration with our chatbot'*, *'creatively going to market with these ISVs'*. We also paid attention to any contradictory statements within the same transcript, performing constant comparison (Strauss & Corbin, 1994) and reaching theoretical saturation (Glaser & Strauss, 1967). Other relevant secondary materials such as blogs or websites were imported into NVivo. The initial coding took approximately four (4) months to complete for the first case, and nearly five (5) months for the second case. In this step all transcripts were coded independently taking an iterative approach by going back and forth between the theoretical framework, literature, and emerging findings. Gioia et al (2012) suggests that at this stage it is normal to feel “lost” and that is precisely what occurred to us as we had a large sheer number of categories which became overwhelming. As described by Gioia (2004), *“You gotta get lost before you can get found (Gioia, 2004)”* (Gioia et al., 2013, p. 20). Getting “lost” in the data forced us to think about how each of the categories relate to one another, conceptually. We started asking more pointed, theory-generating questions (Myers, 2013), and theoretical concepts, themes and patterns began to emerge from the data analysis. For example, we asked: 1. How are these categories related? 2. What is the relationship between co-envisioning and co-share resources or co-govern and co-sell? 3. What is the novelty? Asking these questions helped us materialize a clear set of concepts and tentative relationships from the interviews – a process termed “theoretical sampling” (Glaser & Strauss, 1967).

To strengthen validity and reliability, a second author, my doctoral Advisor, coded multiple transcripts (interviews) independently to compare and contrast from my own coding results. We found that the initial first-order coding performed by my Advisor were comparable and aligned to

my coding results, but also captured newly identified codes and reached consensus and agreement with my Advisor. At this stage we began to find relationships between categories and giving certain categories labels or phrasal descriptors (Gioia et al., 2012) – e.g., ‘platform selection’, ‘ideation to conceptual design’, ‘go-to-market and co-sell’, etc. The first-order codes comprised of language used by informants or descriptive phrases when in vivo codes were not available (Strauss & Corbin, 1990).

### **6.2.2 Stage 2: 2<sup>nd</sup> Order Emerging Themes**

During stage two we looked for links between and among the first-order concepts, which made the process of grouping them together into second-order themes (Andriopoulos and Lewis, 2009). Drawing on the theoretical literature, field notes, interview scripts, open codes and common thematical areas, important supporting statements, and logical relationships were identified and categorized. At this stage of the process, we had identified a total of open 139 codes for the first case and 181 codes for the second case (320 total), as well as maintaining an inventory of memos to record ideas, insights, and interpretations of the case data. This inventory of first-order and second-order codes helped us build a basis for a data structure (Gioia et al., 2013) but without any inferred hierarchy (Saldaña, 2016). This was an iterative process and we made constant comparisons between the first-order and second-order codes to advance our understanding of the data and identify theoretical constructs and relationships. These concepts emerged from the data as opposed being guided by a priori hypotheses (Strauss & Corbin, 1990). Furthermore, we applied semantic relationships (Spradley, 1979; Urquhart, 2013) for first-order and second-order themes and wrote theoretical memos about their relationships (e.g., *Intellectual Property is a characteristic of Governance*; *New knowledge and retention is kind of Absorptive capacity*; *Go-to-market with ISVs is a characteristic of Co-sell/Co-market*). The data structure began to take shape and we

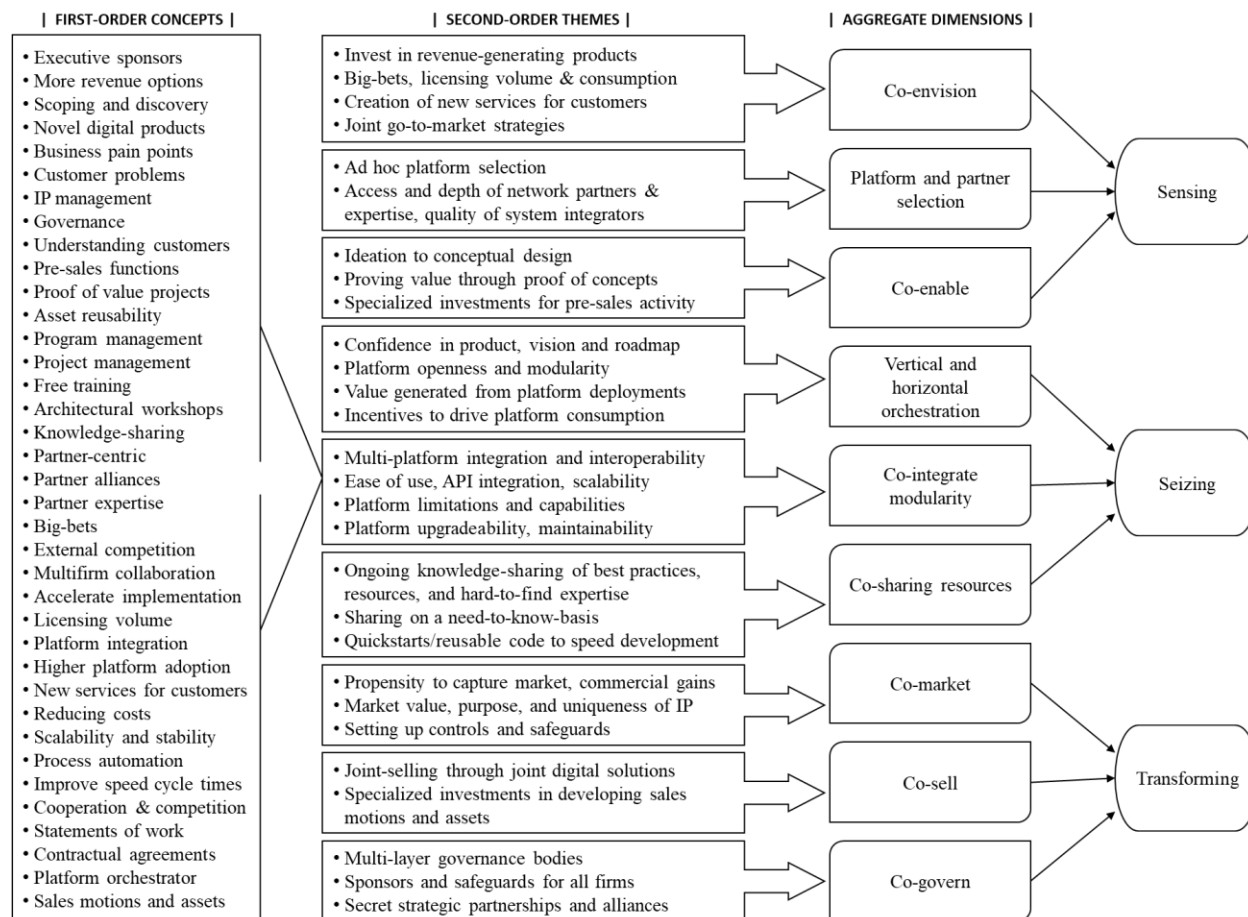
began identifying the major themes (“aggregate dimensions”) where we reduced the bulk of the categories to a much more manageable number (Gioia et al., 2013). We reduced the number of codes by linking and reducing the lower-level codes to a core set of themes, forming more abstract high-level categories, and consolidating lower-level themes (Appendix 4, 5). This step was rather tedious and slow and challenging, however, it allowed us to get closer to the data and be more analytical of the data. Our analysis began to bring clarity and unraveled patterns allowing us to begin drawing emerging themes (Gioia et al., 2013) and the nuances of how firms manage the process of IT value cocreation, referencing the IT value cocreation processes with the dynamic capabilities theoretical model, and the key processes that emerged through the analysis. At this point we achieved a solid set of workable themes and the culmination of the concept development process led to a “theoretical saturation” (Glaser & Strauss, 1967). This, again, was an iterative process and we felt the need to further distill the second-order themes even further into 2<sup>nd</sup>-order “aggregate themes” (Gioia et al., 2013).

### **6.2.3 Stage 3: Aggregate Dimensions**

Following within and standard cross-case analysis techniques (Eisenhardt, 1989), we looked for similarities and key differences across the two cases, comparing the categories developed in the second stage. As we approached the end of the analysis, we began to assess the commonalities to better understand the relationships across cases, between categories and determine if any existing codes could help us theorize (Urquhart, 2013). As Urquhart (2012) describes, “something interesting happens when we put categories into a diagram” (p. 114), therefore, we developed multiple iterations of integrative diagrams (Strauss, 1987) and similar themes were consolidated into aggregate dimensions that served as a foundation of our emerging framework (Andriopoulos & Lewis, 2009). The exercise of building iterations of integrative

diagrams helped us to narrow down and arrive at convincing explanations for the aggregate dimensions. Following Gioia et al.'s (2013) guidelines and as described by Andriopoulos and Lewis (2009), we labeled the dimensions (e.g., co-enable, co-govern, platform and partner selection) by continuously referring to existing literature and consolidating content at a much higher level of abstraction. This process was iterative and involved capturing evidence for each higher-level aggregate dimension – e.g., API integration, safeguards, contractual agreements, reusable assets. We assessed reliability by validating each dimension with evidence, plotting the higher dimensions on MS Power Point (Figure 5), and comparing coding of the primary author and my doctoral Advisor. We discussed and resolved any disagreements through multiple iterations and discussions. At this point and as described by Gioia et al., (2013), we were ready to transition in which our data and existing theories are considered simultaneously and begin building an emerging theoretical framework. Gioia et al., (2013) describes that this step “compels us to begin thinking about the data theoretically, not just methodically” (p. 21). We went back and drew on existing studies of IT value cocreation and dynamics capabilities to refine our labels and understandings (Andriopoulos & Lewis, 2009). Figure 5 provides a graphical representation of our data structure and how we progressed from raw data to themes in conducting the analysis, which depict the identified processes of IT value cocreation and their association to the dynamic capabilities theoretical model, respectively.

Figure 5: Data Structure: Summarizing the data analysis (aggregated dimensions)



## 6.3 Findings

We present the empirical findings in the next sections to address how firms cocreate IT value, by implementing the dynamics capability (DC) theoretical lens (Teece, 1997, 2007, 2018) describing key processes that emerged when firms cocreate IT value in digital platform ecosystems under each DC dimension: *sensing*, *seizing*, and *transforming*. We initiate with an alignment of existing capabilities, a decomposition and typology of assets from the digital platforms and customers, followed by key *value drivers* that motivate IT value cocreation activity and conclude with several *business outcomes*.

### 6.3.1 Value Drivers

So, what motivates firms to pursue IT value cocreation endeavors in digital platform ecosystems? Amit and Zott (2001), in their Value creation in E-business paper, suggest that ‘source of value creation’ or ‘value driver’ (used interchangeably in their study) refer to “any factor that enhances the total value created by an e-business” (Amit & Zott, 2001, p. 494). They further cite four major value drivers—*efficiency*, *complementarities*, *lock-in*, and *novelty*. Our interviews suggest that value drivers are events that triggers companies to act and jumpstart the IT value cocreation process. Further, another important aspect of value drivers is the customer value proposition as the primary motivator for firms to pursue IT value cocreation initiatives. Rintamäki et al (2007) suggest that “identifying customer value propositions begins with understanding the key dimensions of customer value that motivate the targeted customers; and development of customer value propositions benefits from hierarchical evaluation and combining of *economic*, *functional*, *emotional*, and *symbolic* customer value dimensions; and evaluation of the competitiveness of customer value proposition is based on the suitability of the company resources

and competencies required for delivering on the proposition to gain competitive advantage” (Rintamäki et al., 2007, p. 630).

Teece (2018) suggests that a step for the innovating organization is “sensing the existence of customers with unmet needs who are willing and able to pay for a product or service that can rectify their predicament” (p. 45). Adopting Teece’s sensing argument coupled with value drivers (Amit and Zott, 2001) and customer value dimensions constructs (Rintamäki et al., 2007), the following example suggests an economic value dimension as the driver for the customer to cocreate value enabled by the BPM Platform, as described by a senior product manager:

*Ultimately, we're striving to achieve a two percent enterprise reduction, to the-dollar-saved for retention and see laser credits and adjustments as we just throw money to throw money at problems. And we didn't have to do less of that.*

*[Firm D-Enterprise Services Provider, Senior Product Manager, Customer (Case 2)]*

Like the quote above, in Case 1, we found that the firms collaborating and cocreating IT value are driven by key incentives but also gain significant value from the collaboration and trusting relationships between parties. Each firm has an incentive to devote resources and specialty experts and bring all the know-how to the alliance. A customer’s (Firm A-Product Owner) highlights the improvement of the bottom line (revenue) and cost reduction as primary value drivers from their IT value cocreation alliance with the Cloud Platform Provider,

*Second part is it improves [Customer] bottom line with reduced overall support cost, keeping the people only for specific, unsolvable, complex, high value problems they need to get on with ... that's the value prop, but it's also part of the overall digitalization effort, because we want all our properties to be digitalized and available, hopefully in public Cloud, easily accessible and an easy to consume format. That's where we started engaging third parties - in this case [Cloud Platform Provider].*

*[Firm A-Product Owner, Senior Engineering Manager for Collaboration Platforms]*

The common themes that surfaced from the analysis on Case 1 are the customer’s access to immense value and specialty skills from the Cloud Platform Provider and system integrator

ecosystem, innovation on the cloud, cost reduction, and speed to market (acceleration of project implementation). From an incentives point of view, partnering and building with a cloud provider (Firm B-Cloud Platform Provider) that is established and has a market cap of \$1.6 trillion, and provides access to a global, extensive partner network ecosystem is extremely appealing to customers. The global brand status of the cloud provider and their addressable market are equally appealing to customers – and act as major incentives for customers. For example, a Firm B-Cloud Platform Provider’s sales and business development manager explains the value of their ecosystem and filling gaps in their digital solutions catalogue by partnering with other vendors, including their direct competitors, *“We have a number of products, we have a data warehouse product, and we have a BI tool called [Business Intelligence Service]. It's a product called [BI Product Name], but some customers prefer to use other products and having a broad ecosystem or as we prefer to call it these days, a broad partner community, enhances the value of [Cloud Provider]. The combined value of our ecosystem with our native services is way bigger than what we could offer only by ourselves. So those products, in some cases could have features or could address requirements from the [Cloud Provider] customers that our native services cannot address”* [Firm B-Cloud Platform Provider; Independent Software Vendor (ISV) Sales and Business Development].

In Case 2, however, efficiency and productivity appeared to be a primary driver and a valued tenet. Informants noted how managers are chartered to focus on automation and speed to market on operational functions. These global operational processes are crucial to the customer in keeping and maintaining their global infrastructure. Should anything go wrong with any of their infrastructure services, it would impact millions of customers and users across the globe. As one director of operations explains, *“We are building some automation in-house to do things faster. So, but those, this is like what I call operational side of things”* [Director Operations, Customer].

Budgets are kept static and often reduced, therefore, the customer needs to explore digital solutions and partner with the BPM Platform and system integrator to find broken workflows, legacy processes, and siloed applications. The BPM Platform plays a role in the process automation journey to enable and maximize efficiencies and operational productivity. An account manager noted, *“But [Customer] told me yesterday that they're going to be asked in their OKRs [objectives and key results] to do 50 percent more work with no new staff” [Account Manager, BPM Platform].*

A software development manager and program manager noted some of the root cause on several broken processes:

*There are different opinions on why this is slow. I believe it's one part of it is because when the software runs into an issue, it takes a long time to get the next version from the vendor. But then also they provide to fix our systems are not our process does not handle things fast enough.*

*[Software Development Manager, Customer]*

*One thing is being able to predict how much time it's going to take for something to exit that pipeline. And also getting visibility, predictability, and repeatable process. So, having some kind of tracking with the vendor and how long they're taking in [BPM Platform], it could be that when we do observe an issue like that, it could be that they become part of this entire end to end system.*

*[Program Manager, Customer]*

The examples shared above are some of the core themes and drivers for IT value cocreation efforts. The customer has clarity on their business goals and what the targeted business outcomes are. As noted by a lead business architect who works with the customer daily, *“So this is a core foundation layer which is leading to higher business agility, reduced cost and complexity, and making the entire environment conducive to growth and reduced risk” [Lead Business Architect, System Integrator].*

While informants stressed the need to focus on higher-level value drivers such as reduced cost and complexity and risk-avoidance, interviews also stressed the need to solve for symbolic and emotional value proposition dimensions. A director of operations cites an example of a symbolic value proposition, *“But our mantra at [Customer] is ‘Automate or die’ if we're putting*

*in place stateless work systems so that when we identify an event on the network all the way through it being remedied, there's no human interaction” [Director Operations, Customer].* Similarly, program engineering manager highlighted a similar mantra (automation) through integrations between the BPM Platform and the customer’s file storage services can yield efficiency gains and improve user experience – for internal and external users,

*A deeper integration with [Customer Workspace], especially with like [Customer File Storage Service]. Right now [BPM Platform] handles a lot of attachments when we upload things and everything. Having some sort of like integration into [Customer File Storage Service] would be super helpful that everything gets uploaded in [BPM Platform]. That's something I think will create a lot of value, especially for an organization like us...And with [Customer File Storage Service], sharing is easy, I can share documents inside and outside of [Customer].*

*[Program Engineering Manager, Customer]*

Rintamäki et al (2007) posit that emotional value propositions can be combined with economic and functional value (p. 628). Interviews also highlighted a paradoxical link between economic and functional value emphases. A technical program manager noted the idea of using machine learning solutions to predict operational incidents and reducing the troubleshooting time cycles:

*I wanted to leverage some of the machine learning platforms that we have and go to a more decisioning-based system for [Process A and Process B] and things like that. And also coming up with more predictive models, basically that says we had 800 tickets in [BPM Platform] or 3000 tickets in [BPM Platform] last month. And this is the ticket distribution based on like changing business parameters, this is what I expect in the next three months or the next four months. Basically, take a look at the troubleshooting tickets and the services that went down, and try to predict, you know, something might go wrong in the future.*

*[Case 2, Technical Program Manager, Customer]*

*And the other stuff, all these things that were built, I don't think it was by plan or by design. It was very like in need based, for instance, I think people complained I need to manage [Customer] Calendar and also [BPM Platform], so let's build this integration. This integration [Customer] and [Customer's Data Warehouse Service] was because we need a place to see the data. The analytics integration was because we have to show the data. The Chatbot was some other feature. So, I don't think it was everything was built as part of a plan, roadmap. It was more of, hey, I think you need to do this.*

*[Case 2, Solution Architect, Customer]*

Summing up the value drivers and references to value propositions, automation, efficiency, innovation, and speed to market were found to be the core value drivers. Informants stressed that automation is a recurring activity – it is not a tool or a strategy – but rather it needs to be native to any organization. It needs to be a standard mechanism of how leaders run their businesses to achieve the desired business outcomes. As mentioned above, the “evaluation of the competitiveness of customer value proposition is based on the suitability of the company resources and competencies required for delivering on the proposition to gain competitive advantage” (Rintamäki et al., 2007, p. 630). This means that the customer’s key decisions are to identify, evaluate, and select the right partners and alliances to fill their own resources and competencies gaps required to achieve competitive advantage.

The next section describes the empirical findings based on Teece’s (2007) dynamic capabilities. Next, we begin highlighting key processes that emerged under *Sensing*.

### **6.3.2 Sensing**

Sensing is about identifying opportunities by constantly engaging in scanning, searching, and exploring across technologies and markets, including probing of customer needs and technological possibilities (Teece, 2007, p. 9). From our data, three processes related to sensing emerged: partner and partner selection, co-environment, and co-enable.

#### **6.3.2.1 Platform and Partner Selection**

Grover and Kohli (2012) ask two fundamental questions, which are “*How do firms select partners?*” And “*How do relationships evolve?*” (p. 231). Selecting partners and platforms and forming trusting relationships when multiple firms come together to cocreate IT value enabled by digital platforms requires time and mutual commitments from all parties involved. Trust is an essential ingredient for an effective and successful cocreation of value endeavor, but it also enables

organizations to achieve sustainable competitive advantage (Bharti et al., 2015). Trust is “a bilateral process that requires mutual commitment and endeavours of organisations and customers when attempting to keep their promises” (Romero & Molina, 2011, p. 14). Therefore, it is imperative for firms and actors involved to set expectations clearly and agree on mutual commitments and the desired outcomes. An enterprise support leader explained,

*It was a non-trust issue, right? They were fully committed to [Cloud Provider] and this was an opportunity for [Cloud Provider] to show their commitment to the customer to say, we value your business, wanting to support you with your objective of reducing cost and on trust landings. I mean the customer needs to be receptive too, right? I mean, this is a situation where we can fill all the right things and we can do all the right things but is the customer receptive to what's being proposed [Firm B-Cloud Platform Provider, Enterprise Support Leader, Cloud Provider (Case 1)].*

Of course, all participating firms expect to receive some level of business benefit from the relationship. There are significant benefits gained from the triadic (IT value cocreation) relationship. In some cases, the value add is measurable and tangible, while in other cases the benefits are intangible (learning and enablement, brand recognition, etc.). A Senior Engineering Manager for Collaboration Platforms from the customer describes tangible benefits that are gained from the IT value cocreation, namely speed to market, knowledge and expertise, and cost efficiencies.

*I think time to market, number one, and number two would be leverage ... best of the breed, tools and technologies and know-how, right, that would be number two. Number three, I would say ... I don't have actual data in front of me, but cost-wise it's cheap.*

*[Case 1, Senior Engineering Manager for Collaboration Platforms, Customer (Case 1)]*

But how do relationships take shape throughout these value cocreation endeavors? How does it all begin? Interviews highlighted that the relationship between participating firms (e.g., customer, BPM Platform, system integrator, and cloud provider) is initiated as part of the normal commercial sales cycle. In some situations, as in Case 1, the cloud provider and the customer have a customer-provider relationship, and at the same time, the two firms (customer-cloud provider)

are competitors. The relationship begins when the customer has a business need and technical challenge they need to address. There are specific incentives and desired business benefits driving the participating firms to collaborate. For instance, the customer is going through a digital innovation and transformation process and requires technologies from a digital platform vendor to help solve their business problem and enable innovation. As noted by a key decision maker from the customer's global operations function:

*Actually, [Customer] has tens of thousands of the best software engineers on the planet, but we kind of approach this the same way we build our network. We're not really trying to be a telecommunications company. We much prefer to buy things from the market so long as commercially we can get the quality and features that we're looking for at a cost that's competitive, building it ourselves. It's the same thing on the US side. We're not looking to be a work management company would much prefer to focus on our core mission and leave all that up to you (BPM Platform).*

*[Firm D-Enterprise Services Provider, Director, Operations, Customer (Case 2)]*

This quote exemplifies the complexity in how firms select partners and external digital platforms. The customer has a distinguished global presence, some of the best software engineers, and not only can they build and replicate any workflow management platform in the world – because they have robust internal resources and capabilities – but they choose to partner with an external digital platform so that they focus on their core mission (core competencies). Across cases, customers cited that they have choice to either build in-house or partner with a digital platform provider and system integrator. There are incentives and benefits for the customer in partnering with external vendors because of the lack of specialized digital technologies and skillset. The customer seeks cloud providers who offer solutions that are cost-effective, well-established in the market, and scalable. The customer engages a third-party professional services firm (system integrator), forming a triadic relationship, to accelerate the development and migration but also to fill the specialized skills and capabilities that the customer simply does not have in-house.

*... we engaged a third party, in this case [Cloud Provider], because we thought it more cost-effective, it's scalable, and it's proven too, in other markets ... and along the way we arranged [Cloud Provider] for other services, like professional services, because there was some complex areas that we didn't have in-house expertise to start with – and because of our time to market considerations and skill-set, we brought in two consulting engagements.*

*[Firm A-Product Owner, Senior Engineering Manager for Collaboration Platforms, Customer (Case 1)]*

Similar to the operations manager above, a program engineering manager shares a similar sentiment and why they chose the BPM Platform as their digital platform of choice. An Enterprise Services Provider's (Firm D) program manager prioritizes their core mission and ensure that their engineers focus on the most complex problems, however, they seek specific qualities and capabilities from the BPM Platform, such as ease of use, leverage automation capabilities out of the box and with the ability to make changes quickly:

*So a large reason why we are tapping on [BPM Platform] as a platform is because it is very fluid and allows us to make changes very quickly and that's not to say that our engineers can't do that as well but we want to focus our engineers and our teams on what are the most complex and difficult problems, you know, of keeping our network up and running all the time. So, the reason why we chose [BPM Platform] is we wanted to help define what the business processes were, improve them, optimize them, and then build a system that helps support them. We wanted to replace that [Legacy Process] with an automated solution such as what [BPM Platform] RPA provides.*

*[Firm D-Enterprise Services Provider, Program Engineering Manager, Customer (Case 2)]*

Informants also evaluated other vendors and highlighted that the BPM Platform's industry status was an important factor. Platform flexibility, working partnerships and industry experience were other important factors that went into their decision-making and evaluation process, as described by a senior product manager,

*While we did entertain some other vendors, I think that there were some specific components that we really rose to the forefront as sort of industry leaders. And I think, you know, sort of where you stand in the markets so I won't belabor that point that as a company, by having a really strong expertise and I think that's evidenced itself from early of working partnerships and sort of getting folks prepared from the requirements gathering point of view, having to make some adaptations to how we apply the tool, based in a very unique approach to customer care.*

*[Senior Product Manager, Customer]*

In some instances, the customer evaluates competitive internal digital platforms that exist within their walls. A platform-to-platform comparison was done as part of their evaluation process. The customer built a business process management (BPM) model on an internal platform called Concerto. The customer compared Concerto against the BPM Platform but realized that Concerto fell short in terms of features and functionality that they were searching for:

*What I did was I got a trial account with [Concerto] as well. I went through a building a BPM...and it's being used in different places, but it's really I think, a wash down version of a BPM engine. So, it doesn't have the capability, some of the things you [BPM Platform] have, so you have to work around them to get it done. So, I took an account from them, I built my BPM engine there, and I was convinced that that's not a direction to go for any of the work that we do.*

*[Software Development Manager, Customer (Case 2)]*

Despite these valid attempts to evaluate a BPM engine that is proprietary to the customer, the customer selected the BPM Platform as their digital platform solution. There are additional and important questions that surfaced as we combed through the interviews: What is the role of the system integrator in the platform evaluation and selection process? Also, what characteristics do customers prioritize when they are searching for partner alliances (e.g., system integrators)? For the first question, interestingly, the business and trusted advisor relationship between the customer and system integrator matters and plays a crucial role in the selection and evaluation process. A senior program manager explained that they relied on the system integrator to come up with recommendations on industry-leading digital platforms, *“A decision that we made, for instance, for [BPM Platform], we went to the Gartner Research findings. What [Customer] did was they pretty much tasked [System Integrator] to find someone to do it. And so they did the research and they came up with recommendations and along with proposals on why we should be using [BPM Platform]”* [Senior Program Manager, Customer].

To address the second question, we uncovered a common pattern in our findings with regards to what customers look for in system integrators, but also, what system integrators look for in BPM Platforms – so it is a two-way street. For instance, a senior director from the BPM Platform was appreciative in that the customer selected the BPM Platform as their partner of choice and go to market together, *“You had different competing interests. We went through some reorgs, some changes of ownership, changes of personnel. At the end of the day, you decide [BPM Platform] was the right fit for you versus other competing solutions or internal build or also potentially do nothing, right?”* [Senior Director Sales, BPM Platform]. A senior product manager highlighted that the BPM Platform’s preparedness and the expertise they brought to the table was a key differentiator, *“When it came time for proof of concept, your preparedness was something that really stood out to us... And, you know, [BPM Platform] came to the table and really did a good job driving us to where we are.”* [Senior Product Manager, Customer].

Therefore, it appeared that the customers tend to focus on the BPM Platform’s leadership and industry expertise. On one hand, customers stressed the importance of the deep technical expertise from the system integrator; therefore, it is important that the system integrator brings technical depth and business acumen and be able to translate business requirements into digital solutions.

*With respect to system integrators, what I look for in a system integrator is you bridge the business requirements and come up with a technical solution and that's what you need. And bridging the business requirements to a technical solution is a very important part, as you know.*

*[Technical Program Manager, Customer]*

Customers also expect system integrators to identify process flaws and inefficiencies and bring those to the customer. Similarly, customers expect partners to pushback when they are faced with unreasonable demands that will or may yield to poorly designed and architected solution.

Secondly, trusting relationships, again, is an important characteristic that seemed to resonate across informants, as described by an engineering manager,

*There are actually two important parts. The first one is they should understand the process to a point or they should be able to identify process inefficiencies and let us know that these are the process inefficiencies, that's something very important. And the second thing that's more important than the first one is you need to have a partnership relationship and not like a customer vendor relationship. But more often than not, what happens is if you have a customer in a vendor relationship, the customer says, I want the vendor to just do it. They just do what the customer asks for. And that's bad. If you don't have pushback on something that's not feasible, you'll end up with a solution that does not work or that's poorly optimized.*

*[Engineering Program Manager, Customer]*

Winning the support of key business relationships for the evaluation process is crucial for both the system integrators and BPM Platform. In situations where the customer implements a bake-off (e.g., mini hackathons) between vendors, it is especially critical that the partners bring the technical know-how, show up and present well.

*Depending on how confidential your process is, you can do a mini hackathon. You bring multiple system integrators, show them your process, give them some very preliminary documents, and say, here's a process map, guess how much you're spending and here's how much we want to spend in the future and here's our company's growth trajectory, take this information, let us know what we can do to hit our goals and how you would do it*

*[Director Operations, Customer].*

*Just give them the current business solution and just ask them, you know, in six months or eight months how much we can optimize it and where you think we can be. So, run small hackathons or just get proposals from them and say this is how they want to address things. So that becomes your first step and of course, there's a cost element to it. How much are they going to cost or what kind of support that they're going to provide? There's also expertise, for instance. If you want someone with [BPM Platform], AI, and ML expertise, they're going to cost a bit more and that kind of goes into your request for cost and everything. Basically, it's a combination of skill and cost that that we look at.*

*[Lead Solution Architect, Customer]*

While mini hackathons and showcasing the technical know-how, customer references and the feedback from the BPM Platform also plays a role in the selection process. A technical program manager stressed the importance of attending the BPM Platform's global user conference to

network with other potential partners but also to solicit feedback on partners as part of their references gathering process:

*And also, references help. Like if someone, let's say [BPM Platform] comes and says, is like vendor A is like our platinum or gold accredited vendor and could do a good job, that helps. Also talking to previous clients also works well. And this is where the [BPM Platform Global User Conference] is very useful. I think the biggest advantage of the [BPM Platform Global User Conference] is you get to talk to other people and their solutions and about solutions, and then you kind of ask, hey who was your system integrator, what did you like about them and what did you not like, and get him to be more candid with the feedback and say, like it, I don't like these things, I highly recommend these guys. So that's where the other stuff comes into play.*

*[Technical Program Manager, Customer]*

In summary, the platform and partner selection process involve multiple dimensions and the triadic business and trusting relationships (customer-BPM Platform, customer-system integrator, system integrator-BPM Platform) play a crucial role in the evaluation process. The BPM Platform drove the conversation and the customers appreciated this level of leadership. They were able to build trust with the customer, but their preparedness and industry leadership were critical to the customer's platform evaluation and decision-making process. In the next section we highlight key findings regarding the co-envisioning and co-development mechanisms in the IT value cocreation process.

### **6.3.2.2 Co-envisioning**

The co-envisioning process in IT value cocreation is visualizing the art of the possible, the process of exploiting the available digital platforms and solutions to speed innovation. Co-envisioning is the translation of a concept or an idea – often driven by a value driver – into a conceptual design solution; more specifically, into blocks of high-level business and technical requirements. As noted by a Firm B-Cloud Platform Provider's solutions architect in Case 1, *“That's usually how we start the collaboration. First is understanding the customer, understanding their business and what they're trying to achieve. And then based on that opening the architectures*

*and providing them solutions and helping them build that out as well” [Firm B-Cloud Platform Provider, Solutions Architect, Cloud Provider]”.*

In Case 2, the customer and BPM Platform, together, identified an opportunity to optimize a set of mundane and repetitive processes. The customer’s agents and coordinators had to navigate through hundreds of sites multiple times a day just to achieve the same thing, over and over. A program engineer explained, “*So, when we embarked on this journey with one of our partners, [BPM Platform Solutions Consultant], he and I were looking at some of our current process and we saw that there's a ton amount of manual toil...we saw that as an opportunity for us to implement process automation.* This idea or value driver was translated into blocks of requirements and ultimately into a conceptual digital solution. The conceptual design is part of the customer’s proof of concept (PoC) in order to prove the value, determine the required investments, and quantify overall deployment timelines. The co-design aspect in this context is that the customer acts as the process owner, the BPM Platform solutions consultant as the digital solution and industry expert, and the system integrator as the technical subject matter expert (ultimately who builds and deploys the solution to a production environment).

*After our journey here, it took us a while just in terms of really identifying what all the opportunities were and then nailing them down and developing them. Each of the process developments themselves were fairly quick; it took us maybe a few weeks to deploy, to develop, to test, and deploy a service end-to-end.*

*[Technical Program Engineering Manager, Customer]*

A different example of co-envisioning coupled with joint innovation between the customer and the BPM Platform resulted in novel products and services. Grover and Kohli (2012) noted that through transparent and frequent use of assets, IT enhances the relationship among partners that can lead to cocreation of products and services (p. 226). Our case informants suggest that digital technologies and the convergence of new technologies have changed the nature of digital

transformation and cocreation, making it easier, faster, and less expensive. A program engineering manager highlights the partnership with the BPM Platform and the exchanged of assets, in this case, RPA, *“We saw our agents and coordinators have to navigate through hundreds of sites multiple times a day just to achieve the same thing over and over and we saw that as an opportunity for us to implement process automation and, in this case is robotics process automation. It took us maybe a few weeks to deploy, to develop, to test, and deploy a service end-to-end” [Program Engineering Manager, Customer]*. To achieve this end-to-end deployment, the BPM Platform and customer custom-built integrations to integrate with a plethora of internal and external systems, *“One piece that we added more recently in this past year was implementing RPA. There are a number of other automations that we have for including APIs and integrations” [Lead Systems Architect, System Integrator]*.

A VP in robotics process automation (RPA) suggests that technologies such as RPA and the arrival of low-code/no-code platforms have changed the way in which the customer is able to build and deliver services. This quote below highlights the importance of painting the art of the possible picture enabled by digital and emerging technologies – in this case, low-code platforms.

*The reality is they have their place but moving to digital transformation, the excuse for people who live in the RPA world is digital transformation is hard and expensive. But it's not, not anymore. I agree, it used to be, I lived there for 40 years building applications, monolithic systems, legacy code to maintain. That has all changed with the advent of low-code platforms and of course, when you do it right you almost eliminate that underpinning iceberg that what you've got on the top is built for change, when business decide their business model changes, or they need new business rules, or they need to configure something new, you can do those things on a low-code platform in minutes and hours and days instead of months for backlogging years.*

*[VP, Robotics Process Automation, BPM Platform]*

Similarly, a VP of Information Technology, explains the role of the BPM Platform’s Customer Success Manager (CSM) in strengthening their digital transformation journey but also shaping and painting the art of the possible: *“We call it One Digital [Customer], and [BPM*

*Platform] is a strategic technology for us in that transformation and we use it through the entire value stream – both back office and front office. And the vendor, [BPM Platform], is a strategic partner for us; the CSM has worked very well for us because they are an advocate to us within Pega and deepen that partnership” [VP of Information Technology, Customer (Case 2)].*

In summary, driven by value drivers, the customer’s business and technology stakeholders join forces with partners and BPM Platforms; together they explore the possibilities available to come up with feasible digital solutions to achieve the desired business outcomes. The co-envisioning process brings together critical inputs from all firms that are cocreating value – from digital innovation insights, process-level expertise, industry experiences, leading best practices, and digital platform and technical fluency.

### **6.3.2.3 Co-enabling**

The co-enabling process involves taking an idea into a conceptual design through educational enablement programs prior to fully committing resources for a full co-development and co-production. The ability of participating firms to “generate rents through knowledge sharing is dependent on an alignment of incentives that encourages the partners to be transparent, to transfer knowledge, and not to free ride on the knowledge acquired from the partner” (Dyer & Singh, 1998, p. 666). The knowledge sharing layer involves sharing information and expertise that can inform decision-making and strategies for cocreating new or better products (Grover & Kohli, 2012, p. 227). Good IT infrastructure and processes for knowledge sharing enhances absorptive capacity (Cohen and Levinthal 1990). The conceptual design is part of the customer’s proof of concept (PoC) to prove the value, determine the required investments, and quantify overall deployment timelines. The co-design aspect in this context is that the customer acts as the process owner, the BPM Platform solutions consultant as the digital solution and industry expert, and the

system integrator as the technical subject matter expert (ultimately who builds and deploys the solution to a production environment).

Teece (2007) suggests that the searching behavior involves exploring the market and technological fronts – searching inside and outside the enterprise for technological solutions. Our findings suggest that the partners and customers involved need to exchange and share specialized assets to build unique joint digital solutions. Aligned with Grover and Kohli (2012), they define relation-specific assets layer as “two or more firms, at least one of which contributes specialized IT hardware and/or software or network facilities that create new value in the form of digital or physical products and services” (p. 226). This value could only be created in conjunction with partners’ resources (technology or physical assets) rather than in isolation (Grover and Kohli, 2012). A few critical and unique events we observed in our cases is the physical exchange of specialized IT assets between two industry leading digital platforms. In Case 1, for instance, In Case 1, for instance, the cloud provider (Firm B-Cloud Platform Provider) worked with the customer to build a joint solution for their marketing department. The customer lacked not only the specialized skillsets but also the underlying hardware and cloud infrastructure to build a global solution that could scale globally. As noted by a principal data scientist, *“I’m working with [Customer] as my customer in this case, and they’re bringing the expertise from [Cloud Provider] professional services to build for them a solution that included a lot of core components, but was not available off the shelf. So as a custom application for the business, in this particular case was to calculate the marketing lift that was accomplished from providing certain kinds of advertising to certain participants”* [Firm C-Professional Services Firm, Principal Data Scientist]. Further the data scientist explains that the customer *“has the data in house and they had some cloud skills that were providing the actual calculations, however, they did not have the infrastructure experience to*

*be able to build the solution out of the [Cloud Provider] components that were available or out of any other components that were available in the marketplace.”* Because they engaged specialty expertise and leveraged the cloud provider’s cloud infrastructure to build the platform, the customer was able to build the platform very quickly because they were leveraging expertise from people who had built this kind of platform many times before for different companies, whereas for this particular team it would have been the first time they were building it.

In Case 2, the BPM Platform is considered a leader in developing software for dynamic case management, customer relationship management, and robotic process automation. The Enterprise Services Provider (customer, Firm D) offers a global cloud computing platform and is also considered a leading cloud provider in the world. Together, the BPM Platform and customer joined forces, exchanged IT assets, and developed innovative digital solutions utilizing both platform’s technical capabilities. In the scenario below, the customer depicts a multi-dimensional layered platform involving the customer’s cloud infrastructure, the BPM Platform’s development platform, and a digital application developed on top of the BPM Platform’s development environment and the customer’s cloud infrastructure. On top of this stack, the customer developed a new robotics process automation application to automate mundane tasks. We refer to this finding as *multi-dimensional layered platform*.

*So, project [Digital Application] is our application that we are running using the [BPM Platform] and we recently in the last year added in an additional application on top of that, and that's where RPA fits in. So, [Digital Application] integrates with a bunch of [Customer] tools, including [Customer's Data Warehouse service] and other analytics tools. But it also serves as an entry point for us to interface with any third parties that we need to engage with as well to help support our network.*

*[Firm D-Enterprise Services Provider, Program Engineering Manager, Customer (Case 2)]*

Case informants depicted a variety of use cases where the digital platforms (BPM Platform and Cloud provider), customer and system integrators exchanged assets to cocreate new products

and services across the organization (e.g., front-end functions such as sales and customer service or back-office functions such as operations). In one example, the BPM Platform offered a feature known as ‘next best action’, which is an artificial intelligence and machine learning capability with sophisticated algorithms that helps back-office agents provide better customer service and upsell new services based on the data that is presented by the next best action functionality.

*We applied the [BPM Platform] version of next best action and then ultimately very keen to this out-of-line conversion rate and again, saw performance that outpaced that of other folks that went through a similar exercise with that.*

*[Firm D-Enterprise Services Provider, Senior Product Manager, Customer (Case 2)]*

These BPM Platform features, and technical IT assets run and operate on top of the customer’s cloud platform. Similar to the *next best action* assets, there are cases where the customer is in search for exploratory projects and innovation opportunities by leveraging each other’s specialized IT assets. A marketing product manager is exploring the use of the BPM Platform’s artificial intelligence (AI) functionality, *“For us, this is one of a variety of different initiatives for plugging into A.I. and ultimately for us at large at a larger scale. Our intention is to leverage AI to enhance the desk, the expert desktop experience, so they can really focus on the complex. We can automate some of the mundane”* [Marketing Product Manager, Customer].

In summary, co-enabling involves coordinating joint immersion and educational programs while negotiating and allocating resources to cope with the convergence of new digital technologies and waves of emerging technologies such as low-code development platforms and multi-dimensional layered digital platforms.

### **6.3.3 Seizing**

Seizing is about “making good decisions under uncertainty, and executing well on those decisions (Teece, 2007, p. 10). Three processes related to seizing emerged from our data: co-share resources, co-integrate platform modularity, and vertical and horizontal orchestration.

### 6.3.3.1 *Co-share resources*

The process of co-sharing resources assumes exchanging specialized knowledge and sharing information, sharing cross-functional technical resources that are difficult to replicate or find in the market, to exploit each firm's capabilities to build joint digital products and services. Teece et al. (1997) defines resources as "firm-specific assets that are difficult if not impossible to imitate" (e.g., trade secrets, specialized production facilities, experience) (p. 516). In Grover and Kohli's (2012) cocreating IT value framework, the complementary capability layer "focuses on identifying and exploiting complementary resources/capabilities among the partners such that together they are a source of value that a partner could not build on its own" (Grover & Kohli, 2012, p. 226).

As new ideas continue to flow from co-envisioning workshops across different functional teams, customer's program managers are responsible for the intake process and manage the prioritization of these ideas in a backlog – or an inventory of potential – not yet fully approved and funded – projects. Translating the end state vision requires proving its value to the business by co-building together between the customer, digital platforms, and system integrators. This involves sharing internal process knowledge, technical resources, sharing documented processes, and collaborating with other teams. During the *co-sharing resources* process, a key finding highlighted by participants is establishing a cadence of communication and collaboration. Given the number of resources and teams distributed across several functional groups, project communications become a critical nuance to the success of the project. It is not about cloud technology but rather having the right communication mechanisms and project management processes in place in order to achieve the desired business outcomes, as noted by a Firm B-Cloud Platform Provider's technical program manager,

*So, if you ask me what drives the success of any engagement, my short answer is it's not the technology it's not you know the tools. It's always, it comes down to communication. The more you communicate the better given amount of people involved and the different nuances and different interdependencies that we have here. Communication is always the most important thing. So, in order to make this successful that's just a lot of content collaboration and communication either virtually person you know et cetera. And in this instance, we have a number of ways. We have daily meetings that we work with where both the customer our partner as well as our team is at the table. So, we know where things are what's happening next where the issues are. And then we as we understand those on a daily basis, we all look at ways to quickly resolve them to move the ball forward [Cloud Provider – Senior Technical Program Manager].*

The level of project communication and coordination often depends on the customer's technical fluency in the platform and the project's level of complexity. There are situations where the customer has the capacity and technical expertise to take the design and build process on their own but with the support from the digital platform teams. In Case 2, for instance, a Firm E's customer success manager interacts with the customer offering the customer teams resources available to equip them with the appropriate tooling and get them started with the co-build phase:

*We have what we call a low-code workshop, and this can be two hours, four hours, full day. And what we could do is take an actual [Process Name] use case and we build it out real time on an [BPM Platform's Development Environment]. So, the output of that workshop is a real built out application. It'll be lightweight given the time frame, but it'll give you an opportunity to build something with those case types, from concept to planning to development.*

*[Firm E, Client Success Manager, BPM Platform (Case 2)]*

Firms A-Product Owner and Firm B-Cloud Platform Provider took a similar approach in their co-building process where they conducted design reviews and held whiteboarding sessions as part of their co-design activity, as explained by a Firm A-Product Owner's senior engineering manager,

*We also shared our own designs, and they shared their ideas. So, it's kind of common design reviews, especially on the infrastructure – how it's going to look like, architecture and content structure. We have extensive meetings with the different folks [professional services] that are related to these areas... we used whiteboarding extensively to actually do these information sharing sessions, design reviews. We also had a physical presence – all our discussions, results, were documented as project meeting notes, and also as documents proper – results documents.*

*[Firm A-Product Owner, Senior Engineering Manager for Collaboration Platforms, Customer (Case 1)]*

In situations where the end state solution is not fully defined, the system integrator's technical teams continue to further define the scope and use cases. This information gives the system integrator enough context around business and technical requirements so that they can start the co-sharing resources process by co-building in the BPM Platform. As noted by a systems architect who works directly with the customer's process owner to further define the 'user story', *"It sounds like what you're looking for is a workflow that has an approval process. And then based on that, we populate our own internal [access directory] table so that next time the person logs in, we look up the access group that he belongs to"* [Lead Systems Architect, System Integrator]. The *co-sharing resources* involves several stakeholders from application developers, solution architects, cloud engineers, to UI/UX designers and experts. An application developer is working with the customer and other system integrator technical experts on designing the system integrations between the BPM Platform and other internal systems and data sources:

*So, [Team Member, System Integrator], what you're proposing is an alternative. If we don't have access to some external system, we'll need to appoint somebody to manage this. But that's just the alternative situation if you don't have a solution. Originally, when we created the story, we were really thinking, is there a way for us to actually connect, to get the user's data, at least some data that will tell us what this person has access to or what role he has accessed. [Application Developer, System Integrator]*

However, a key concern around the *co-sharing resources* journey is understanding the end solution's overall scope and estimated costs. A Firm B-Cloud Platform Provider's business development manager explains the importance of agreeing on the scope of work and projected costs, *"I think to the levels of collaboration we refer are required to ensure the success and prevent scope creep and increasing costs etc. You absolutely need to talk, in my opinion...you agree to the commitment from both sides. And you need to monitor that"* [Firm B-Cloud Platform Provider,

*Partner Business Development Manager, Cloud Provider (Case 1)*]. Scope definition and cost estimation becomes an important factor given the number of resources and teams involved – from the customer, digital platforms, and professional services/system integration teams.

Once the initial pilot or proof of concept is finalized, the customer and system integrator need to conduct appropriate testing and initiate the process of scaling the solution and move it into a production environment, even if the requirements are not fully documented by the system integrator and application developers, as noted by a business architect, “*we have 15 days to get to maybe 85 percent requirements or data [interfaces] completion, for us to deliver this thing on time*” [*Business Architect, System Integrator*]. Further, getting ready to move an enterprise BPM Platform solution to a production environment is not an easy task, as noted by a business architect and technical program manager:

*And as we have continued the PoC and into the space we were now targeting going to scale, there have been times where we've had to quickly adapt to defects. Everyone has them, it's part of the technology SDLC process.*

*[Lead Business Architect, System Integrator]*

*We want someone to be able to build that or create that in some component. So, you guys need to figure out which test component we can use. We could just use the one that we were using when we did the [Customer Application] API.*

*[Technical Program Manager, Customer]*

Co-sharing resources also occurs between digital platforms, competitors, and customers but with the goal of commercializing and selling their joint solutions to the marketplace. In Case 1 for example, we found that the cloud providers co-design and co-build market accelerators (*Accelerators*) as a pre-sales and go-to-market mechanism. These Accelerators promote cloud adoption which results in revenue growth for the cloud provider. It is also a co-selling mechanism for the partners (competitors) because they are effectively selling a full, turnkey solution that

combines technical layered components from the cloud provider and the competitors (e.g., open-source database management software built on top of the cloud provider's platform).

*“Accelerators are built by [Cloud Provider] solutions architects and partners to help you deploy popular technologies on [Cloud Provider], based on [Cloud Provider] best practices for security and high availability. These accelerators reduce hundreds of manual procedures into just a few steps, so you can build your production environment quickly and start using it immediately. Each Accelerator includes [Cloud Provider] templates that automate the deployment and a guide that discusses the architecture and provides step-by-step deployment instructions.*

*[Firm B-Cloud Platform Provider, Partner Cloud Architect, Cloud Provider (Case 1)]*

Here is an example where the cloud provider partnered with two of their competitors and co-designed and co-built a Accelerator. The two competitors are a global visualization software vendor and a cloud-based data-warehousing vendor which both run flawlessly on the cloud provider's platform. However, the cloud provider's catalog of services also includes the same or similar services as these two competitors (a cloud-powered business intelligence and visualization service and a cloud-base data warehouse platform service).

*And there's one more thing which is sometimes these Accelerators are used by the partners to us as pre-sales mechanism. So, maybe [Visualization Software Vendor] and [Cloud-based Data-warehousing Vendor] are out in the field trying to sell their products on [Cloud Provider] and they're using these to deploy the technologies as a proof of concept to their prospects. And they're asking [Cloud Provider], Hey, have you seen if, and on the other hand, they're asking [Cloud Provider] have you seen if people are deploying these Accelerators are being used. We want to see if there's traction and if there's interest in the market, because [Cloud Provider] has all that information. So also protected by our nondisclosure agreement. We provide statistics about the use of the Accelerators. So we can tell these third parties, yes, it's been deployed X number of times, in general, when people deployed, it's usually standing for an average of two to five days. And then they shut down all the infrastructure, etc.*

*[Cloud Provider – Independent Software Vendor (ISV) Sales and Business Development]*

Teece (2007) suggests that “Managers seek new combinations by aligning cospecialized assets” (p. 23), and according to Grover and Kohli (2012), complementary capabilities involve an “IT-based resource or skill provided by one company that leverages partners’ resources” (p. 226).

A Firm B-Cloud Platform Provider's partner solutions architect explains the process in which

multiple firms join forces to understand each other's unique value propositions and capabilities, *And to the extent that they can, they have discussions between each other to really understand what unique value propositions each other's capabilities bring to the table and how do we make the most of those...And if it's unique enough, such that [Customer] finds that their customers would be interested in it, then they will make sure that an integration with that capability is part of the overall solution...How do you exploit each these capabilities?" [Firm B-Cloud Platform Provider, Partner Solutions Architect, Cloud Provider].*

In summary, the *co-sharing resources* process focuses on sharing and exploiting partner's complementary resources and capabilities. In some cases, the purpose of such exchanges between firms is purely explorative (innovation) or exploitative (process automation and efficiencies).

### **6.3.3.2 Co-integrate platform modularity**

Given the complexity and modularity of digital platforms (cloud computing services, BPM Platforms), the co-integration process involves managing the interconnectivity and interoperability of a broad range of architectural components. Digitalization introduced layered modular structures that enable 'massive and parallel' experimentations of recombination of digital components (Lyytinen et al., 2016). In the example below, the customer is complementing and exploiting internal systems and APIs where the goal is to leverage the BPM Platform as the case management application and facilitate user interactions through the customer's chat bot service. The ultimate goal of the co-integrate platform modularity process is to deploy the solution in a production environment. The timing of ideation-to-production journey (from a conceptual idea to a design, to a full production solution) often depends on the complexity of the end solution, available out of the box features from the BPM Platform, and expertise from the system integrator and BPM Platform. An Enterprise Services Provider's (Firm D) engineering program manager noted, "Each

*of the process developments themselves were fairly quick. It took us maybe a few weeks to deploy, to develop, to test, and deploy a service end-to-end” [Program Engineering Manager, Customer].*

Deploying a service end-to-end into production means that the solution has been tested, passed a deployment criterion, and can now be used by end users. A solution architect explains their responsibilities around testing and ensure that all the in-scope features will be functional to the end users, *“Which is what we're doing now, one full week of just testing the functionality, making sure all the functionality works...and then schedule time with our load performance team” [Solution Architect, Customer].* Another caveat is that the BPM Platform continues to evolve and innovate and release new product versions to its customers. It is up to the customer how they consume and keep up with the BPM Platform’s everchanging product. Therefore, the customer and system integrator assess how and when they upgrade the BPM Platform to the latest version, as noted by a system integrator’s business architect,

*And from what from what I understand, the way [Customer Program Manager] thinks he doesn't really want to go to [BPM Platform Version] right away anyway. He wants to be more stable before we push anything to them [End Users].*

*[Lead Business Architect, Systems Integrator]*

Across cases, the system integrator acts as the leader in the co-integrate platform modularity process, however, all parties are actively involved – customer, system integrator, and digital platforms – and are responsible for a successful deployment to production. Preparing for co-production, application testing becomes a critical task ahead of the upgrade process to upgrade to the production environments with full confidence. Therefore, the system integrator, primarily, focuses on application code that is not going to cause any disruption once they move into production. In some cases, the system integrator balances tradeoffs, deals with workarounds and not so robust application design in order to meet the customer’s deadlines, as explained by a systems architect, *“So, we can definitely do a lot of cool stuff that hopefully we won't push all the*

*way to production in the future. But for now, we can find workarounds to at least make this work. It's just not going to be the best design” [Lead Systems Architect, System Integrator].* However, there are cases where teams overlook technical or product-related details that lead to production issues, as described by a loyalty manager,

*And there was a couple of other surprises like that where we ran things in production. You're going to run into defects, but these were defects that were kind of surprised that we're new to [BPM Platform].*

*[Senior Loyalty Manager, Customer]*

We found that the customer and digital platforms (cloud provider, BPM Platform) leverage each other's unique digital capabilities and skills to implement scalable applications, which requires effective knowledge-integration procedures (Teece, 2007) and co-integration of platform modules, data, and interfaces. A unique nuance worth highlighting is that the complementary layer extends to internal and external partners – beyond the digital platform and customer. Interviews suggest that in the absence of complementary resources and for the customer and digital platform to generate value from the complementary capability layer, they must facilitate application integrations and interactions with external partners by developing and offering application programming interfaces (APIs), as described by a Firm D's program engineering manager,

*I want to say a majority of our external partners that don't necessarily have the same APIs and technical capabilities that we would love them to have like at [Customer], so that's why we're leaning on RPA. We wanted to replace that with an automated solution such as what RPA provides. [Firm D-Enterprise Services Provider, Program Engineering Manager, Customer]*

Our findings suggest that strong business relationships and alliances coupled with the combination of complementary capabilities (e.g., custom APIs), specialized investments, platform's experience, and effective orchestration of emerging technologies results in value generation and appropriation. Business relationships among partners also represent a source of value. There are significant benefits for the BPM Platform when they partner with the professional

services firm, primarily because of the deep bench of BPM Platform's experts and professionals scattered all over the world. This is a limited capability and a shortcoming of the BPM Platform in that they do not have that deep consulting arm to scale and grow as fast as the professional services firm. A VP of professional services explains:

*Our [BPM Platform] practice is approximately 2000 people and size approximately 20 million plus in license. And influence revenue that we do year on year for [BPM Platform] by partnering together.*

*[VP, Professional Services, System Integrator]*

The co-integrate platform modularity process goes beyond technical resources and skills and involves exploiting each other's trusting relationships and alliances between firms. Informants in this case suggest that the BPM Platform exploits the strong business relationship that has been established between the system integrator and the customer. A senior sales director explicates, "You're very humble when you describe what you do. I have been personally told by the executives at [Customer] that you are a key trusted advisor" [Senior Sales Director, BPM Platform]. Further, an account executive praises the system integrator's partnership even though the system integrator has other partner alliances with the BPM Platform's competition, "You know, it's not lost on me or the team that you work with many technology organizations, including our competition, like Salesforce, Adobe, others" [Account Executive, BPM Platform]. Exploiting business relationships lead to mutual profitable business opportunities for both the BPM Platform (e.g., annual contract value from software licenses and subscriptions) and the system integrator (e.g., billable hours from consulting services). A senior director highlights the importance of alignment and *cross-pollinating* between the system integrator and BPM Platform teams leading to stronger and tighter teams.

*There's a recognition on my part that we all have our skill set. I've met so many of your team members that are experts in disciplines that I know nothing about. I really believe that the task of*

*our teams to cross pollinate and to be stronger together and align together...we've got to be human beings and aligned together in a way that's beneficial.*

*[Senior Director, BPM Platform]*

Partner alignment and strong collaborative partnerships involve making specialized investments that go beyond contractual arrangements. Interviews highlighted the critical component of these trusting relationships which is about cross-pollinating, complementing, and sharing unique skillsets as a collective between the BPM Platform and the professional services firm. Both firms invest an enormous number of resources to ensure customer success. For example, the BPM Platform allocated a large number of resources on their side, where the professional services firm allocated between over 20 resources. A director of professional services explains, *“We just got a whole cast of characters. I mean, over on our side, there are almost fifty people involved. I know there's probably 20 or 30 on your side at a minimum. It's that ability to serve and align on a goal that I think drives this success in the partnership”* [Director Professional Services, BPM Platform]. The complementary capabilities, technical platform experience, and investments made on behalf of the BPM Platform and system integrator provide significant value to the customer. For example, a technical program manager explicates how they lean on the BPM Platform and system integrator for support so that they focus on their core mission, *“So a large reason why we are tapping on [BPM Platform] as a platform is because it is very fluid and allows us to make changes very quickly and that's not to say that our engineers can't do that as well but we want to focus our engineers and our teams on what are the most complex and difficult problems, you know, of keeping our network up and running all the time”* [Technical Program Manager, Customer]. Effective ability to co-share resources and manage a constant wave of digital technologies not only speeds application development and deployment, but it reduces overall development costs. A consulting manager elaborated on how the BPM Platform and system

integrator join forces to remove roadblocks for the customer, as well as handling the heavy lifting work.

*Also walk you through as and when you hit roadblocks while you're building this out or trying to import it by yourself. We can help you walk through some of that stuff as well. And then when you're ready to have all the heavy lifting integrations and all of that built out and called out, then we bring in the [System Integrator] and whatever to kind of put in all that plumbing.*

*[Consulting Manager, BPM Platform]*

Summing up co-integrating platform modularity, balancing tradeoffs and performing thorough application testing were found to be critical in this process. The customer and system integrator work in a synchronized manner and ensure that new features that are released to its end users have limited to no disruption to their business operations.

### **6.3.3.3 Vertical and horizontal orchestration**

Teece (2007) suggests that the innovation process requires active orchestration of assets (tangible/intangible) by managers which aligns with our key findings. Teece (2007) further suggests that “Enterprises with good dynamic capabilities will have entrepreneurial management that is strategic in nature and achieves the value-enhancing orchestration of assets inside, between, and amongst enterprises and other institutions within the business ecosystem” (p. 26). In line with Teece’s (2007) view, orchestration assumes orchestrating people and resources (e.g., sales teams, partner teams, executives, etc.) across firms but also orchestrating emerging technologies and the convergence of technologies from all firms cocreating digital solutions (e.g., cloud infrastructure, open-source containers, APIs, RPA applications, etc.). These types of orchestrating layers provide a source of value that, when combined, exponentially open opportunities for more value-generating and digital innovation and transformation initiatives. A VP at the BPM Platform elaborated how with the combination of emerging technologies are changing *‘the game’* in application development to the point of companies becoming *‘digital native’*.

*We've low-code with cloud...you literally can build new digital applications in days and weeks. Digital processes that used to take...it's going to take years. You put together machine learning, AI, IoT, cloud, micro services, and then you orchestrate all of the work that gets done in your organization in a single entity that is what's changing the game and I almost say that if you take this approach, you become a digital native.*

*[VP, Robotics Process Automation, BPM Platform]*

Similarly to the VP's sentiments above, a Lead Business Architect suggests that the BPM Platform acts as the core orchestration engine and is the focal point for vertical and horizontal orchestration, *"How [BPM Platform] is using the dynamic case management to really automate all of them and how it is integrating with the apps at [Customer]. So, if you really look at it, [BPM Platform] is working as not just the orchestration engine, but also a very sophisticated integration engine to connect these apps very seamlessly for data flow"* [Firm F-BPM Integration Services Firm, Lead Business Architect, System Integrator (Case 2)].

For firms and partners to orchestrate daily activity and share their proprietary knowledge, incentives need to be introduced, and partners must perceive mutual value from knowledge sharing and use (Grover & Kohli, 2012). For instance, a Firm D's (Enterprise Services Provider) program manager is seeking guided training and support from the BPM Platform and system integrator to assess the power and flexibility of the BPM Platform (is it worth their time and investment?), *"I think we were kind of looking for more of a guided training where we would sit down with this team or this team's resources and say, all right, let's take a small subsection of our big process and let's import five steps. So, we together kind of demonstrate the power and flexibility of the product. And then, OK, yeah, that's easy enough for us to be able to dig in, spend the time in training, make that investment or, you know, it's just something we don't really care to do and well, we'll lean on our partners to make that happen. So, I kind of want to get that that initial feel for, how hard is this"* [Firm D-Enterprise Services Provider, Program Manager, Customer (Case 2)].

We identified several forms of vertical and horizontal orchestration, such as exchanging best practices, building together (customer-provider-system integrator), and offering leading best practices via online communities, service documentation, newsletters, blogs, architectural design workshops, continuous learning, and enablement, and Accelerators (e.g., Firm B-Cloud Platform Provider). The cloud provider's (Firm B-Cloud Platform Provider) Accelerators are meant to accelerate cloud migration and development, which include readily available infrastructure programming code, scripts, and deployable cloud reference architecture templates. These knowledge-sharing mechanisms and knowledge assets are great sources of value for the customer. Below are two examples where a Firm B-Cloud Platform Provider's ISV Sales and Business Development Manager explains the value of the cloud provider's Accelerators, and the customer's (Firm A-Product Owner) Solution Engineer & Cloud Architect highlighting the value from the cloud provider's online communities and blogs.

*I think there are a couple of interesting value ads that we provide. So one is we call these Accelerators sort of a gold standard, so our platform is very self-service. [Cloud Provider] is very self-service. So this Accelerator is a way of deploying [SaaS], which is a data warehouse technology and [SaaS] which is a business intelligence technology running on [Cloud Provider]. So the value added in the Accelerator is that we're telling people who want to use [Products] on [Cloud Provider], how these should be deployed. So that way you ensure you're following [Cloud Provider] best practices...there's a whole deal of really public IP that has been shared, because we really are telling our users the message of, this is the best way of doing this.*

*[Firm B-Cloud Platform Provider, Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider (Case 1)]*

*For me finding the solution is much easier with [Cloud Provider] because the community is so big and there are so many things happening, so the community is so big and there are so many things happening and then there are lots of [Cloud Provider] blogs to find the solutions, so these are the avenues that help finding the solution. It's not necessarily a solution completely done by me or anybody, it's basically the community that is so big and that in itself is collaboration...*

*[Firm A-Product Owner, Solution Engineer & Cloud Architect, Customer (Case 1)]*

Firms B and E offer online communities to their end customers and partners – and some online communities are far more active than others, as in the case of Firm B-Cloud Platform

Provider's online community. For instance, the customer (Firm A-Product Owner) highlights their engagement in the cloud provider's online community but also leverages the expertise of the professional services firm to confirm and validate architectural decision-making. Another important finding is that the customer also becomes an active contributor and participant in these communities, as noted by a Firm A-Product Owner's solution engineer, *"...so the most important is how the community is active with [Cloud Provider] blogs or and then professional services contribution and we have different kinds of information that we draw up and at times we get a professional service to determine that we are on the right path and at times when it comes to professional services, the collaboration is done more like in cases but professional services start by documenting a play book kind of document and are scrutinizing every diagram; they're more like actors and give direction such as, "if you want to do this, this is the right way". So, a blog, a typical snippet of code or a command, these are the ways to do it so basically those are the two primary designs"* [Firm A-Product Owner, Solution Engineer & Cloud Architect, Customer (Case 1)].

The nuts and bolts of the BPM Platform orchestration was critical to the success of the IT value cocreation journey and decision-making process. Orchestration is bidirectional and involves sharing between all parties: cloud provider, BPM Platform, system integrators, customers, and other third-party developers. In some cases, team members from all firms involved will meet in a conference room for several weeks to problem-solve and architect the digital solution's desired end state. In this process, effective orchestration of resources, technology, and knowledge sharing play a critical role in the success of the architectural discussions and the result. A marketing product manager explicates, *"We discussed the nuts and bolts of every nuance to our way that we engage with our customers and how that would impact not only the product but the insights that the [BPM*

*Platform] team brought to the table, knowing from other projects and other industries and other companies that they had worked on before” [Marketing Product Manager, Customer].* The product information, subject matter expertise, and industry insights brought by the BPM Platform speeds the product development and cocreation efforts.

*We took all of that expertise and said, how can we how can we tweak it to maximize our results and also make sure that the results that we're seeing are we know and can identify that it's because of this product and not for something else that's going on in our ecosystem.*

*[Senior Product Manager, Customer]*

*So, to be able to come to the table with a completely open mind and way of being flexible and creative in that space was very critical to our early success there.*

*[VP Product Management, Customer]*

In return, the BPM Platform strengthens its product and marketability because it breaks into a new industry at a highly renowned global customer. The BPM Platform also benefits from novel innovations that come out of these customer initiatives. These incentives do not come free; however, the BPM Platform provides a fluid knowledge sharing structure and facilitates knowledge sharing in a customer-centric manner, as explained by a loyalty product manager, *“But the way that the [BPM Platform] team could come to us and engage in that easily, we pick up the phone and say, hey, I need your help on this. And it was a very, very quick, snappy turnaround, complete in the end, root cause type of analysis type of thing” [Loyalty Product Manager, Customer].*

Orchestration of new innovative ideas coupled with modular-based technologies and cross-functional resources often leads to joint innovation and other problems that have not been solved before. Grover and Kohli (2012) mention that sharing of IT-based developmental skills or leveraging a common IT- based platform can spawn ideas for new innovations (p. 229). Case informants on the customer side seemed to have full confidence in the BPM Platform, and they

were convinced that they could focus on new innovations and other creative things that can be built on top of the BPM Platform. A senior product manager elaborated on exploratory projects and emphasized creativity, *“Let’s talk about we know you’ve got the solution in the bag. Let’s talk about all the creative things that we can start to layer around this”* [Senior Product Manager, Customer].

However, orchestration in IT value cocreation is not always as fluid and seamless and can negatively impact decision-making and strategies for cocreating new and better products. The BPM Platform faced issues with regards to the product versioning, features, and functionality. More specifically, the knowledge that is or was not shared; and product knowledge that appeared as vague and ambiguous during critical points of the cocreation process. Informants shared some level of confusion and frustration. A product manager explains what occurred during the requirements gather process, *“there was a little misunderstanding on some requirements that we’ve had in the very beginning”* Product Manager, Customer]. Informants were told that a specific feature and functionality was included in the current version that was in scope for deployment, which came as a surprise. A product manager explains, *“And there was a couple of other surprises like that where we ran things in production. You’re going to run into defects, but these were defects that were kind of surprised that we’re new to [BPM Platform]”* [Senior Loyalty Manager, Customer]. Poor knowledge sharing and product miscommunication impact project timelines, resources, and cost.

*We were told that [feature/functionality] is for outbound. And what we’re really describing is [feature/functionality], which in order to do that, is actually to go to [BPM Platform product version]. We found this all out within the last couple of weeks, which is too late at our current deployment deadline. So that was something that we’d known all this stuff a lot sooner, we might have been able to take a different approach.*

[VP Product Management, Customer]

*So, I think that if we had known that ahead of time or been able to calculate a little bit better, maybe we would have started out with a wider scope or more teams involved. And we're kind of still struggling to get that volume due to various variables, but that kind of thing.*

*[Product Senior Manager, Customer]*

*I'm not sure how we would have caught that any faster earlier than we did now, but it just felt like a little more transparency of what was what the system was able to do out of the box earlier rather than later that year.*

*[Senior Technical Manager, Customer]*

What are some ways to address gaps and limitations? Informants suggest that product versioning and roadmap transparency is needed, for example, quarterly business reviews (QBRs) and joint planning (BPM Platform and customer). A Firm E's (BPM Platform) senior director explicates, "So, would it be fair to say, [Customer], that going forward, one of the recommendations that you would have would be almost a QBR that not only does a look back, but also look forward to new feature sets that might be coming out to help you in your planning and timeline initiatives" [Senior Director, Sales, BPM Platform]. Similarly, Firm A-Product Owner (customer) takes a similar approach, as noted by a technical manager, "We go through our quarterly or six years road map, how we are performing. At the same time, we have the read-outs, we have the monthly where senior management meets and that's about the governance and the product now" [Firm A-Product Owner, Solution Engineer & Cloud Architect, Customer]. Further, setting clear expectations from the BPM Platform to ensure that the customer can plan and design their solutions properly. Informants also suggested having a playground-like environment to assist them with planning and design. As one business architect described,

*I think the idea that you provided about giving us a forward-facing application update item would be huge in terms of planning. So, on my side, from a functionality and enhancement perspective, I think it would have helped me on the [BPM Platform feature/functionality] side of things to have more clear expectations of what we thought we would see with the [BPM Platform feature/functionality].*

*[Lead Business Architect, Customer]*

Summing up vertical and horizontal orchestration, as discussed before, orchestration is about balancing customer demands, optimizing the use of resources, identifying IT value cocreation opportunities that are enterprise-wide (horizontal) and business and function-specific (vertical), and positioning the digital platform (BPM Platform or cloud provider) as the orchestration engine for the customer. Our findings align with Teece (2007) suggesting that dynamically competitive enterprises help shape competition through innovation and semi-continuous asset orchestration.

### **6.3.4 Transforming**

Transform refers to the ability to recombine and reconfigure assets and organizational structures as markets and technologies change (Teece, 2007). Three processes related to transforming emerged from our data: co-market, co-sell, and co-govern. The co-governing process facilitates sensing, seizing, and transforming. First, we explore the alignment of existing capabilities, specifically the typology of assets.

#### ***6.3.4.1 Co-market and Co-sell***

The co-marketing process involves multiple firms engaged in joint marketing activities. Co-marketing occurs between digital platforms, competitors, and customers but with the goal of commercializing and selling their joint solutions to the marketplace. For revenue generating and commercially driven digital solutions that are cocreated between customers and digital platforms, the next logical process of the IT-based value cocreation is to co-market and co-sell the digital solution to the marketplace. For revenue generating and commercially driven digital solutions that are cocreated between customers and digital platforms, the next logical process of the IT-based value cocreation is to co-market and co-sell the digital solution to the marketplace. For example, there was an in-flight project on the internet of things (IoT) that the customer (Firm A-Product

Owner) was looking to build and launch (co-market/co-sell) with the cloud provider (Firm B-Cloud Platform Provider). Aside from the technical and engineering resources required to design and develop these joint solutions, there is usually a set of actors that are accountable and responsible to carry out these complex *co-sell/co-market* activities. In Firm B (Cloud Provider Platform), for example, there is a dedicated resource that is responsible for co-marketing and co-selling activity in the ISV sector, *“So as a Partner Manager, my role is to find ways of creatively going to market with these ISVs.”* The co-marketing and co-selling processes were far more evident in Case 1 than Case 2. In Case 1, the customer (Firm A-Product Owner) and Firm B-Cloud Platform Provider developed digital solutions that were intended to co-sell across different channels, as described by Firm B-Cloud Platform Provider’s partner manager, *“These go to market initiatives and strategies would usually be either co-selling motions; so, helping them sell with our field, and then co-marketing motions. And these would be doing things like webinars or field events together where [Cloud Provider] would support the ISV, would host to the ISV and their prospects or customers. Would go promote those events etc.” [Firm B-Cloud Platform Provider, Partner Manager, Cloud Provider (Case1)].* A solution architect explained the joint planning activity that is involved when companies co-promote their digital solutions, *“...probably a green like validation of the content is the thing that could take the longest and then working on the co-promotion, the hosting, all the logistics, if anyone's going to bring a customer, who's going to be a speaker and all that” [Firm B-Cloud Platform Provider, Solution Architect, Cloud Provider (Case 1)].*

Interviews suggested that co-marketing activity also involved partnerships and alliances with other competing platforms – co-marketing with direct competitors with the goal of capturing market share by bundling and packaging digital solutions to their end customers (or prospects), as noted by a solutions architect,

*Having three platforms or three companies get together and rallied to co-create value in the market... that's an example of co-marketing or going to market together to aggregate value for in this case, not a single solution. [Firm B-Cloud Platform Provider, Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider (Case 1)]*

Co-marketing and co-selling activity take place over time as the customer and the partners (cloud provider and system integrator) form trusting relationships. In this example, we describe joint selling and co-marketing between the cloud provider and the customer. The customer, Senior Director of Information Security, is invited by the cloud provider's account executive (sales leader) to be a keynote speaker at several public conferences hosted by the cloud provider. These events often draw hundreds of people from different industries and roles – from senior executives, developers, engineers, cloud architects, and sales leaders. These sessions attract current customers of the cloud provider but also potential prospects who are exploring cloud providers in the market. By having a customer speak at these sessions, it increases the cloud provider's credibility in terms of qualifications and references – directly from the mouth of the customer's senior leader. At the same time, the customer has a promising forum and platform to promote their services to customers and noncustomers. These invitations are purely based on trust and goodwill; there are no legal agreements and financial ties between the customer and cloud provider.

*But I know for a fact that I, you know was invited to a few sessions and for example, one of my key lead architects gave a talk in [Cloud Provider] innovate conference helping other customers understand our journey and what we've done. I have done something similar, at least on a couple of occasions where the account team invited me to their global sales account manager meetings. There they had account teams from large enterprises, and we helped share our story there and what we've done. And more where some of the incentives for driving security and compliance in a high-tech business like [Customer] and things like that. So similarly, I know [Cloud Provider] architects and I've come and brought other customers like [Cloud Provider's Customer] that were probably a little bit ahead in their journey in the cloud space and help share best practices, things like that. I mean, those are not things typically that would go in a contract right. But those are Goodwill type stuff that you're helping each other out.*

*[Firm A-Product Owner, Senior Director of Information Security, Customer]*

Other co-market/co-sell patterns that emerged are selling and distributing revenue-generating digital products through marketplaces (e.g., digital stores). The cloud provider offers a digital store with a catalog of thousands of software available from independent software vendors. These software listings are designed to be easily deployed on the cloud provider's platform without the need of engaging other third-party providers or build the software utility from scratch. In our analysis we found that all of the participating firms have built and listed their software on the cloud provider's catalog, making it generally available to the market. Marketplaces acts as another sales channel for the ISVs and the cloud provider's customer base. The cloud provider also benefits from the consumption of these software listings since it attracts customers to use more cloud services.

*It could purchase [Cloud Provider] marketplace and it could also be made available to the [Cloud Provider] sales channel more broadly as it turns out some of the software has applicability when it comes to helping other companies transition onto [Cloud Provider]. So it actually all tied their ability to lead [Cloud Provider] sales channel, right? Because they may want to use micro focused software to help other end customers get on or affiliate [Cloud Provider]. [Cloud Provider – Global Business Development Manager]*

*There's another channel, right? It's another way for them to.. to bring their software to marketplace. Yes. It's open season. That's a good point their customers to marketplace. They can download and their end customers can go download and install it rather than having to work with, you know, with a third party aside to get software. [Professional Services – Global Enterprise Service Manager]*

*...publish some ISV software on [Cloud Provider]. You can either procure that through marketplace, or you can work directly with the ISV... you pay the ISV their license fee to use their software. And then as the provider of that SaaS model, you do have to bill your customers. [Cloud Provider – Independent Software Vendor (ISV) Sales and Business Development]*

#### **6.3.4.2 Co-governance**

Co-governance processes become critical to avoid or help mitigate any opportunism in the alliance and, not surprisingly, effective governance (safeguards) and information-sharing are key components that need to be managed properly by the partner manager(s) and key stakeholders

involved. However, they are careful in terms of how much information is shared to the public and among the partners involved and what incentives are in place. Teece (2007) suggests that there are governance issues relevant to dynamics capabilities, specifically, a firm's ability to achieve asset combinations and reconfiguration, including incentive alignment (between participating parties). Similarly to Grover and Kohli's (2012) IT value cocreating model, the *governance layer* "focuses on setting up a control structure that reduces transaction costs and incentivizes new value cocreation" (Grover & Kohli, 2012, p. 228) – and this is handled through contracts and formal economic safeguards. Social and informal controls are two key aspects of the governance layer which are less costly in facilitating cocreation of value. Consistent with social and informal controls, a VP focuses on the social and relationship aspects with their customer to facilitate value cocreation, "*that's a core foundation, but it's part of the mindset that helps set up the right thing. It's about the customer's ability to overachieve on any benefit they can imagine*" [VP Professional Services, System Integrator]. Grover and Kohli (2012) suggest that the governance layer "integrates the assets, complementary capabilities, and knowledge exchange layers" (p. 228). Establishing an environment where knowledge-sharing and innovative ideas flow naturally in the partnership are dependent on governance, program management mechanisms, and executive sponsorship as explained by a Firm C-Professional Services Firm's business development manager,

*There's a key cultural part where there has to be a sponsorship at the senior level to ensure that people feel safe and they are happy to share information and then there should be some I think text defining the partnership agreement that says the intention is that we do share. That we are transparent and clear in the areas that says information are sensitive.*

*[Firm C-Professional Services Firm, Partner Business Development Manager, Professional Services (Case 1)]*

The question is which partner or party takes the reins and governs these value cocreation layers? The interaction between complementors and the digital platform along with decision rules

can be complex. Teece (2007) suggests that the platform owner and complementors need to consider the openness of the platform and whether other incentives should be made available to stimulate investment by the complementors (p 14). Our findings suggest that the control varies by firm and depends on the type of project, complexity, complementary capabilities, and other relationships-based factors. As one senior director explains how the system integrator governed (hub orchestrator) the contractual work between the customer and BPM Platform for one specific project,

*The really cool thing about the [Customer] journey is that [System Integrator VPs/Executives], and the [System Integrator] team actually brokered all the contractual work, as part of what their business operation is.*

*[Senior Director, Sales, BPM Platform]*

In other situations, the BPM Platform is in the driver's seat and governing the contractual work between the BPM Platform and the customer. Consistent with Grover and Kohli (2012), contracts and safeguards are established to lower transaction costs and facilitate value cocreation activity. As explained by a director in professional services, *"we'll be working up an actual proactive statement of work that has to go through legal and stuff. We still do that stuff really fast, but I'd rather give you something and eliminate a couple of cycles"* [Director, Professional Services, BPM Platform]. Similarly, a consulting manager is negotiating the statement of work (SoW) and getting the customer's commitment in order for the BPM Platform's consulting services team to initiate the project work,

*So, I guess to get resources on the ground, we'll need to have some kind of SoW or something in place. Should we give that to you? How do we get started? Because the timing on that is going to be key, right? I mean, once you get that, when we have a start date, we will get people on the ground, and we'll start the staffing and put people on.*

*[Consulting Manager, BPM Platform]*

Adding to Teece's (2007) governance structures and Grover and Kohli's (2012) concept of setting up control structures to incentivize new value cocreation, our findings uncover a type of

control structure or form of governance referred to as *multi-level governance* between the IT value cocreation alliances and relationships (e.g., BPM Platform and system integrator or between the cloud provider and customer). The levels of governance include *program-level*, *management-level*, and *executive-level*. An example from Case 1 which highlights a specific partner network-centric structure when the cloud provider cocreates digital solutions with other partners and competitors, as noted by a partner solutions architect,

*For this kind of difficult engagement like this, where both companies are sort of strategically involved. There is usually like [Cloud Provider Partner Network] type structure, which is, you know, like in the case of [Cloud Provider], it's the [Cloud Provider Partner Network], but similar construct in a large company on both sides that are sort of the front ends to these initiatives supporting that partner, that group of partner network folks. You have within that partner network, you have typically a business guy and then you have a specialist SA [Solutions Architect]. But beyond that, then you have folks from the support org engaged so that the supportability aspects around the solution from both sides can be addressed. And these are things like, you know, who is the customer first call? And how will the handoffs for support be treated internally between the two companies?*

*[Firm B-Cloud Platform Provider, Partner Solutions Architect, Cloud Provider]*

As mentioned above, effective governance (safeguards) and information-sharing are key components that need to be managed properly by the partner manager(s) and key stakeholders involved. Once the actors understand that the contractual safeguards are in place, they tend to move fast and there is a great deal of transparency in the relationship between *some* of the partners in the alliance. However, they are careful in terms of how much information is shared to the public and among the partners involved.

*And once you're a partner, you're a partner, there's a great deal of transparency, at least in the, like, if you think about [SaaS Competitor], they need to protect their IP. So there are a lot of things that none of the other three partners are going to know until it's announced, like new features, new products, etc. But the things that are required to put together an event like this are not definitely things that need to be concealed or hide. So, I would say the transparency and the knowledge sharing is, it is there, it's pretty high.*

*[Firm B-Cloud Platform Provider, Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider (Case 1)]*

As described in the quote above, participating firms opted for rather informal safeguards to lower transaction costs and to accelerate the value cocreation efforts. After the partnership is formed and the contractual safeguards are in place, the partners collaborate and work to achieve the business objectives. The stakeholders responsible for such IT value cocreation activities need to agree on the desired business outcomes but also the division of labor (roles and responsibilities) – including sales channels and co-selling arrangements, as described by the partner solution architect,

*Once the partnership is going, the formalities when it comes to legal compliance or other stakeholders that might slow things down. I would say they go away, and it just becomes a matter of the two-business development or alliances organizations agreeing on what they want to do together. So I would say that for serious, like serious event like this. It's simply agreeing on how much each one is going to promote or co-promote, who is going to be the host? What are the channels that we're going to use for promotion and co-promotion? Who is going to bring speakers and then there are a series of approvals on the content. So the content that's going to be presented I think that's the thing that's looked into more thoroughly.*

*[Firm B-Cloud Platform Provider, Partner Solution Architect, Cloud Provider]*

As mentioned before, announcing a big marketing ‘launch’ between participating firms is a complex endeavor that requires effective co-governance. Due to the sensitivity of the marketing content, the presentation material must first go through marketing, public relations, legal and compliance departments. These formalities create a mutual lock-in and serve as credible commitments on behalf of all parties involved. Governance mechanisms in these endeavors become critical to avoid or help mitigate any opportunism in the alliance.

*So those presentations do go through our marketing, legal and compliance teams too for approvals, but they're really, really fast. So I would say sometimes starting a partnership takes some time in terms of the formalities and things that need to be done. Once it's kicked off, every year they're discussions to agree on a partner plan and that partner plan includes these kinds of initiatives like this the [Event Name] events. So once it's done, as I said, probably a green like validation of the content is the thing that could take the longest and then working on the co-promotion, the hosting, all the logistics, if anyone's going to bring a customer, who's going to be a speaker and all that. So I would say pretty low, low friction, which is surprising because we're talking about four companies working together and they're not small companies.*

*[Firm B-Cloud Platform Provider, Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider]*

*So once the solution is announced, what are some of the PR statements events you know, launch announcements as well as sales incentives that need to be put in place in order to co-sell something like this. Right? So that's handled by outbound marketing. Then there is some level of field sales play here from both sides. So, once the solution is announced, how would the solution be sold? Would it be sold through channel partners? And if so, partners on which side of the company, [Customer] or [Cloud Provider] or [Customer] and [Cloud Provider]? Will it be sold direct, there's a direct sales engagement, and then how will the field on both sides be educated about the solution?*

*[Firm B-Cloud Platform Provider, Partner Solutions Architect, Cloud Provider]*

*Co-governance in co-investments.* In Case 2, for instance, a joint selling relationship exists between the BPM Platform and system integrator. This relationship requires multi-level governance and executive alignment between the firms' executives, management, and program level. A sales executive explains, *"So, the other thing we've done is we're working with [VP System Integrator] and [BPM Platform Partner Alliances Directors] to make sure that our [System Integrator] and [BPM Platform] executives have the right alignment"* *[Director, Go-to-Market, BPM Platform]*. The messaging and alignment also cascade down from the executive-level to the management and project levels. Informants across cases described the account manager, who is the sales account team leader, as the designated person who brokers the messaging and communication upstream and downstream. An account executive explains to the management and project teams about a large sales opportunity that is being presented to a customer's executives, *"[VP System Integrator] did present to [System Integrator's] president of North America this week. I spoke to [Director, System Integrator] and to [Program Manager, System Integrator] yesterday. And, you know, I've asked their team to make sure we have time with [VP System Integrator] to make sure we're completely aligned. [Account Executive, BPM Platform]*. A solution consultant stresses the importance of having upstream and downstream communications and transparency,

*“it helps our team understand, you know, kind of what's going on from the top across [Customer]” [Solutions Consultant, BPM Platform].* This type of multi-level governance facilitates IT value cocreation initiatives but also reduces transaction costs for all firms involved, including the customer.

At the management and program level, the customer, BPM Platform, and system integrator establish a center of excellence (CoE) which involves team members from the three firms, including architects, consultants, and engineers from other third-party firms. The CoE is a cross-functional group made up of subject matter experts including business architects, technical architects, application developers, user interface and user experience (UI/UX) designers, and technical program managers. The CoE meets on a weekly basis, and they collectively run through an agenda which involves tactical, technical, and strategic topics. In some cases, a CoE meeting is devoted to problem solving a complex issue. This is a triadic collaboration between the BPM Platform, professional services firm, and the customer. The following is an example of a system integration and customer discussing a user provisioning and project intake mechanism and the existence of a CoE, *“I want it to be self-service because I'm not going to put on some manager's plate like, hey, now go into this portal and set the access rights for everyone...In some cases I can auto approve those because I own the groups that I'm trying to add you to. But in other cases, a group that's identified that reviews those proposals and says yay or nay. And in my mind, that's the cleanest way to manage user profiles within our current environment. I'm totally open to suggestions, and this is why the COE exists” [Technical Program Manager, Customer].*

In summary, our findings align with Teece's (2007) continuous alignment and realignment of incentives and tangible/intangible assets and with Dyer and Singh (1998) which suggest that the governance layer focuses on reducing transaction costs through formal and informal contracts and

safeguards. At the same time, firms stressed the importance of monitoring assets consumption and distribution of existing and newly generated IP, especially if the IP can be used for commercial gains leading to opportunistic behavior.

### 6.3.5 Business Outcomes

Business outcomes refer to monetization from the set of processes that enabled value cocreation and capture (Amit & Zott, 2001) between customers and digital platforms. We uncovered three main business outcomes associated to major value drivers (Amit & Zott, 2011): accelerating innovation, speed to market and cost savings, and revenue generation (refer to Table 2). *Accelerating innovation* and *improved digital products and services* refers to novelty which takes a Schumpeterian view suggesting the value creation potential of innovation, specifically, the introduction of new products and services or “tapping of new markets have been the traditional sources of value creation through innovations” (p. 508). *Speed to market* and cost savings refers to efficiency, which suggests that “transaction efficiency increases when the costs per transaction decrease...” and that the greater the transaction efficiency the lower the costs and the more valuable it will be (p. 503). *Revenue generation* refers to complementarities “whenever having a bundle of goods together provides more value than the total value of having each of the goods separately” and “complementarities can be expected to increase value by enabling revenue increases” (p. 504-505). These value drivers are interrelated and does not mean that there is solely a one-to-one mapping but rather a value driver can be linked to one or more IT value cocreation business outcomes. For instance, novelty is linked to efficiency, complementarities, and lock-in (Amit & Zott, 2011) as innovators have an advantage of attracting and retaining customers, or creating and introducing novel assets in the market.

### **6.3.5.1 Accelerating innovation.**

An important finding from this study is the emphasis on how the cloud drives innovation while enabling coopetition. Innovation in this case can be ambidextrous: it comes in a variety of flavors. In some cases, it is purely exploitative where the customer achieves great cost savings by redesigning their cloud services to fully optimize their architecture and service consumption. For instance, the Enterprise Support Leader from the Cloud Provider explains how by redesigning the application architecture for one of their customers (and direct competitors), they ended up realizing significant cost savings. This particular customer is a competitor of the cloud provider but yet runs their software entirely on the cloud provider's platform. This example illustrates and reinforces that trust and knowledge-sharing even in a competitive environment are critical success factors in a coopetitive relationship.

*...a customer like [Customer] is very advanced consumer of [Cloud Provider]...The value that came from enterprise for my work with them is a redesign of their use of [NoSQL Database Product] using a worldwide in asking caching service. So then their consumption of [NoSQL Database Product] went down from about \$250,000 a month, down to about 60,000 a month and what that required was not knowledge of how [NoSQL Database Product] works. They already use that. They already familiar with it. They have all the information they need with it, but it was, you know, how do we go beyond what's already public and reduce your bill even farther.*

*[Firm B-Cloud Platform Provider, Enterprise Support Leader, Cloud Provider]*

### **6.3.5.2 Improved digital services and products.**

Innovation on the cloud comes with a cost if the cloud provider wants to continue to innovate with their customers and competitors. The cloud provider must continue to innovate, to push the boundaries, providing complex services that are being demanded by their end customers and competitors. The Program Manager for Architecture & Security Technologies from the customer highlights the value of having a mutually beneficial relationship between the customer and the cloud provider. The customer is demanding broader and better services from the cloud

provider; and the cloud provider needs to listen to their customer needs and have the right internal process mechanisms to be able to continue to improve their services.

*And I think it's a back and forth benefit mutually beneficial type of relationship because not only we get to know what the best of the capabilities we can offer. At the same time, [Cloud Provider] also consumed a feedback and the use cases from our company and then they go out and then come out with even better services in the future to make the platform services as a whole. I'm serving more different type of clients. So, I think this is a very good ecosystems that we're running. Definitely you cannot achieve success without any of these components.*

*[Firm A-Product Owner, Program Manager for Architecture & Security Technologies, Customer]*

As mentioned in the quote above, in Case 1 we found explorative innovation between the customer and the cloud provider where the customer redesigned an entire information security and compliance legacy product from an on-premises environment to a cloud-based SaaS product on the cloud provider's platform. The customer digitized and modernized a legacy application by using cloud-based services. Cloud providers benefit from this type of innovation and forces them to push their boundaries and continue to innovate and improve their services.

*So when we have that partnership and that collaboration it helps us grow our business, it helps increase revenue it helps us innovate it pushes our boundaries to innovate in a sense that we need to continuously come up with new solutions capabilities to stay ahead to ensure that our customers have a clear path and runway for them to accomplish their business objectives.*

*[Firm B-Cloud Platform Provider, Senior Technical Program Manager, Cloud Provider]*

Across cases, we uncovered innovation activity where the customer and digital platforms complement each other's capabilities (customer-BPM Platform) to strengthen their commercial solutions but for the purpose of revenue-generating and go-to-market opportunities. A Firm B-Cloud Platform Provider's Partner Solutions Architect from the cloud provider offered other examples where companies build products and services on the cloud provider's platform. In many cases, some of these products and services directly compete with the cloud provider's own products and services, "So, examples like [Competitor] or examples like [Competitor] that have

*really looked at our security services and build solutions on top of our security services to provide enhanced security solutions to their end customers. So, they've already embraced our platform to provide value added capabilities” [Firm B-Cloud Platform Provider, Partner Solutions Architect, Cloud Provider (Case 1)]. Similarly, in Case 2, as explained by a director, “When you can sort of complement the richness of [Customer’s Cloud Platform], coupled with some of the things, the richness coming from [BPM Platform] and kind of a go to market perspective. You're sharing these capabilities and you can join and go to market together” [Director, Customer]. Customers play a key role in the process of building unique complementary capabilities.*

### **6.3.5.3 Speed to market and cost savings.**

The cloud not only drives innovation, but it accelerates speed to market and the delivery of services to the customers’ end users/customers, which are major concerns and objectives of the cloud provider’s customers. Also, a major benefit for customers is that by using a ‘pay as you go’ model, there is no need to make large capital expenditures on infrastructure (e.g., hardware, data centers, etc.). Customers have the ability to scale up and down (e.g., compute and storage services) based on their needs and changing business requirements.

*You know with the traditional infrastructure you have to go through a procurement process make sure you have the right hardware or the right configuration the right resources and time of when it's going to take to set up these cloud infrastructure to bill out the solution whereas with cloud you can quickly ramp up and with a few clicks you've got ten hundreds of servers there's an outbreak so allows them to quickly innovate and very quickly build solutions and quickly go to market. And then the other facet from internal perspective as a platform provider to a benefit to us is that we as a number of ways where we can know our goal is to help our customers innovate so we're able to bring them to a platform that allows them to quickly innovate. That's certainly a benefit as in many ways right. [Cloud Provider – Senior Technical Program Manager]*

*So, the cloud as an offering or as a business has great benefits like, pay as you go. You can deploy instantly you can scale almost infinitely. It's very elastic so you can scale up and down in demand. [Cloud Provider – Independent Software Vendor (ISV) Sales and Business Development]*

#### **6.3.5.4 Revenue generation.**

A key business outcome uncovered in our analysis is around profit and revenue generation as a result of the partnership and collaboration between digital platforms, partners, competitors, and customers, as noted by a Firm B-Cloud Platform Provider's senior technical manager, "So, *when we have that partnership and that collaboration it helps us grow our business, it helps increase revenue it helps us innovate it pushes our boundaries to innovate in a sense that we need to continuously come up with new solutions capabilities to stay ahead to ensure that our customers have a clear path and runway for them to accomplish their business objectives*" [Firm B-Cloud Platform Provider, Senior Technical Program Manager, Cloud Provider].

Another measurable outcome is the BPM Platform's next best action (NBA) capability helping the customer's experts proactively introduce topics to their end customers that they haven't previously been bringing up on their own. That is the proactive conversations that wouldn't have been had previously, whether it's because the expert just doesn't recognize that this is an elevated risk customer or they're just hesitant to have the conversation because they don't know exactly what to say. The BPM Platform capability is highlighting the sales opportunity and prompting them with the exact words that they can use to have a comfortable and confident conversation with end customers. This functionality makes sales staff better salespeople. The recommendations from the BPM Platform gives the sales staff more confidence in their sales activity. Improved employee morale and overall employee retention due to the BPM Platform next best action functionality; makes their job much easier. Sales folks are able to meet their sales targets, as noted by a senior loyalty manager, "If you talk about performance results, we're certainly seeing a lift in our treatment group for certain control groups. And what's perhaps most compelling is you've had folks that have struggled to meet sales targets sort of in perpetuity. And now not only are they

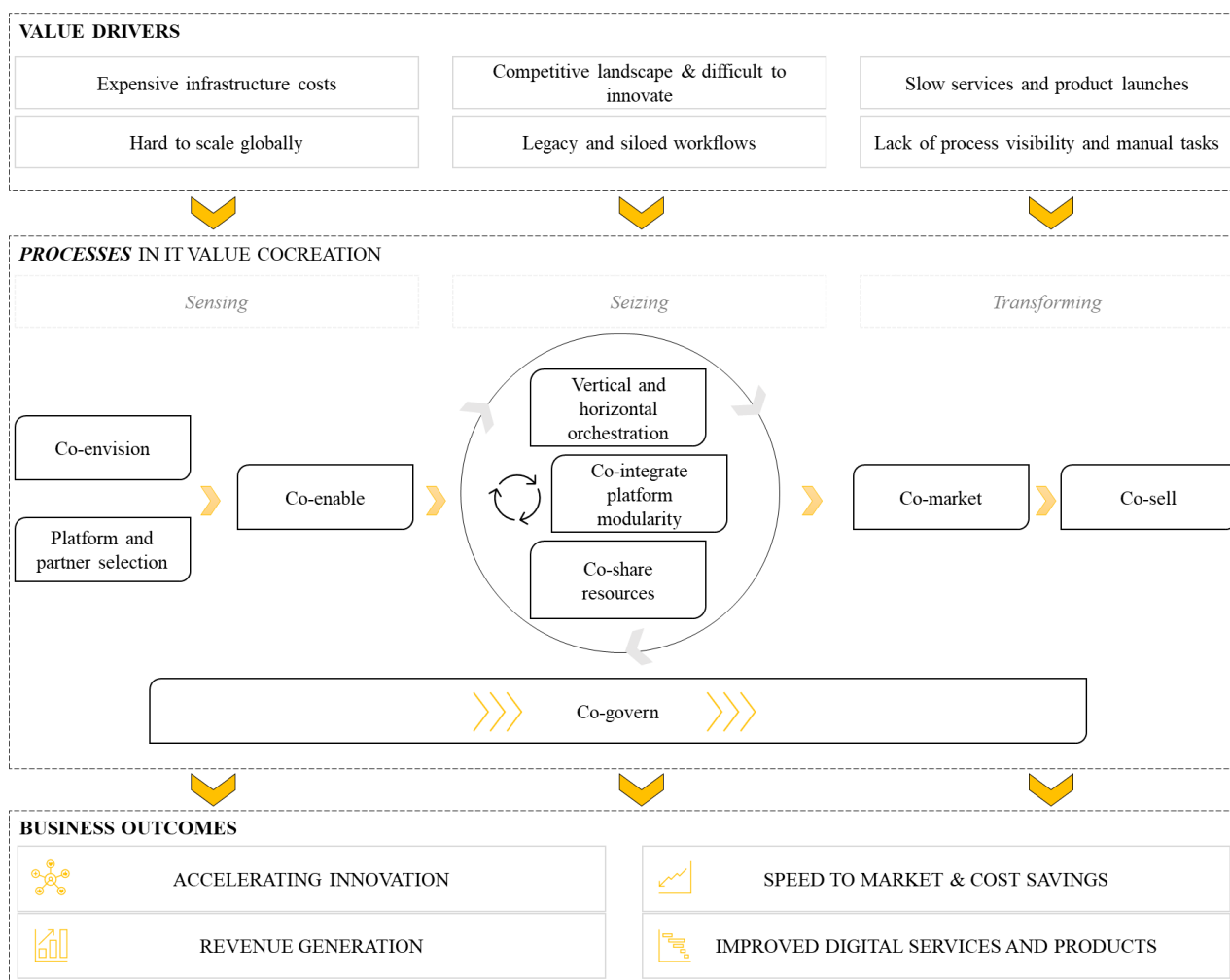
*achieving those, they're actually finding themselves the better salespeople” [Firm D-Enterprise Services Provider, Senior Loyalty Manager, Customer].*

## 6.4 Discussion

### 6.4.1 An Emerging Process Model of Processes of IT Value Cocreation

By relying on the theory of dynamics capabilities proposed by Teece (2007), this chapter sheds light on the question regarding what are the processes that enable IT value cocreation. We illustrate key interrelated organizational processes that emerged from the case study. Specifically, the process model in Figure 6 describes the processes through which dynamic capabilities can be transformed throughout the IT value cocreation lifecycle.

Figure 6: Emerging Processes of IT Value Cocreation



Results demonstrate that the sensing dimension of dynamic capabilities are triggered by external forces and *value drivers*. Meaning, what motivated firms to embark on IT value cocreation efforts? We found, for example, the costs of managing on-premises and infrastructure services is costly when compared to cloud-based and managed services. The hyper competitive landscape pushes firms to continuously seek innovation opportunities to enhance revenue-generating opportunities. Other firms are triggered by the need to digitize paper-based and manual-heavy processes and workflows that are enabled by legacy systems and islands of data sets scattered across the enterprise.

The center body of the emerging model depicts a set of dynamic and interrelated IT value cocreation processes. Within *Sensing* and in the early stages of IT value cocreation, involved firms and actors tend to follow a linear process – from left to right – such that firms begin by formalizing the desired end state vision motivated by the defined value drivers. Firms jumpstart the *co-envision* (the art of the possible) and *platform and partner selection* processes. Co-envisioning entails establishing alignment on what ‘good looks like’ or ‘what success looks like’ at the end of this journey. The partner and platform firms – as well as the customer – play a critical role in the co-envisioning process since they are the members that bring the technical and process knowledge and subject matter expertise. The co-envision and platform and partner selection processes are followed by *co-enabling* where participating firms share platform and technical know-how to jump into the subsequent, iterative processes. Co-enabling processes involves taking that ‘art of the possible’ vision into conceptual design artifacts (architecture diagrams, technical blueprints, small proof of value/pilots).

The co-enabling process triggers the iterative processes under **Seizing**. The processes under seizing are the most complex and are considered high risk, which are *co-share resources*, *co-*

*integrate platform modularity*, and *vertical and horizontal orchestration*. These processes are depicted in a circular and iterative approach because it requires ongoing resources allocation, constant technical designs and architectural discussions involving cross-functional team members, working through integration of platform modularity challenges, and coping with vertical and horizontal orchestration (people, processes, systems, data, multiple demands from stakeholders, etc.). The *co-share resources* process assumes exchanging specialized knowledge, sharing technical resources that bring deep technical expertise that are difficult to find in the market (e.g., containerizing applications using Kubernetes clusters to automate software deployments for Internet of Things (IoT) applications or building and deploying intelligent chatbots to complex case management workflows and systems). Without the system integrators and digital platform's ability to bring these specialized skillsets, it would be difficult to exploit each firm's capabilities to develop joint digital solutions. The *vertical and horizontal orchestration*, for example, requires careful coordination of people, processes, and technologies that impact both vertical and horizontal functions (e.g., design, production, distribution, supply chain, customer service, etc.). The digital platform must ensure that there is a degree of platform *openness* and interoperability flexibility, and plans in place to *co-integrate platform modularity*. Customers often have the need to pick and choose certain 'modules' from the platform in an '*à la carte*' manner (e.g., a type of a managed relational database or APIs), as well as specific requirements to interact and exchange data with dozens of other internal and external systems – hence the absolute need for platform modularity. After the circular and iterative cycle, the participating firms perform proper technical and functional testing to ensure that the co-developed solutions are ready for final production and prepare to move into co-marketing and co-selling motions.

Thirdly, *co-market*, *co-sell*, and *co-governance* are carried out under ***Transforming***. As firms formalize the joint alliances and go-to-market agreements, firms move swiftly into the *co-marketing* and *co-selling* processes. These processes assume establishing clear roles and responsibilities and joint communications plans as the firm members prepare to launch marketing campaigns, share marketing and sales collateral, and train the technical and seller communities. The *co-governance* is embedded throughout the lifecycle of the cocreation journey to ensure proper management and oversight of joint investments, intellectual property (IP), safeguards, and agreements. Co-governance also encompasses managing marketing and sales agreements, such as non-disclosure agreements for IP protection, as well as revenue-generating mechanisms and sharing of rewards.

A key observation is that we found that these emerging IT value cocreation processes are bidirectional and iterative. For instance, firms may jump from the *co-envision* process to *co-share resources*, *co-integrate platform modularity*, to the *co-sell* process as the joint digital solutions and multi-firm relationships mature and/or the digital platform has achieved platform legitimacy and maturity. Based on our analysis, we found that as firms establish mutual trusting business relationships between actors (platform, customer, system integrators, and other contributing members) and achieve platform legitimacy, the process sequence may change from linear to dynamic which ultimately expedites and accelerates the IT value cocreation process.

Lastly, we identified a set of business outcomes (benefits) from the IT-based value cocreation initiatives based on Amit and Zott's (2001) four major value drivers—*efficiency*, *complementarities*, *lock-in*, and *novelty*. First, *accelerating innovation* (novelty) refers to how firms can deploy services for innovation and experimentation purposes at a much faster rate on the cloud versus on-premises environments. The *speed to market and cost savings* (efficiency,

complementarities) refers to the ability to provision cloud-based services on a consumption pricing model (*'pay as you go'* model) without the need to worry about large capital expenditures (e.g., building a new data center or purchasing expensive hardware). These cloud-based services – coupled with the specialized skills from the digital platforms and system integrators – allows firms and customers to speed their co-development of products and services and introduce products to the market at a faster pace. *Revenue generation* (novelty, lock-in) refers to the ability for firms to exploit newly developed joint digital solutions for commercial gains and revenue generating opportunities. For instance, ISVs develop software applications and make them available for purchase on the Cloud Platform Provider's marketplace (digital catalog of products). Lastly, *improved digital services and products* refers to the ability to digitize legacy and inefficient processes and workflows – hence improving front-end and back-end services (e.g., using chatbots to remove manual, repetitive tasks such as entering and processing work orders).

#### **6.4.2 Contrasting Our Emerging Process Model with Grover & Kohli's Model**

The dominant model in IT value cocreation is the one proposed by Grover and Kohli (2012). We decided to compare and contrast with that model in order to highlight the novelties and contributions in our model. Our study aligns with Grover and Kohli's (2012) IT value cocreating framework, specifically the *knowledge-sharing* and *effective governance* determinants of value dimensions, but we extend their framework by identifying processes that contribute to the IT-based value cocreation lifecycle. We also attempt to separate governance and orchestration as separate but interrelated constructs. We take Nambisan & Sawhney's (2011) orchestration lens to capture the differentiate between orchestration and governance in the context of digital platform ecosystems. We wrap the discussion by extending Grover and Kohli's (2012) *assets* and

*complementary* layers by capturing an assets typology to bring to light the specialized assets and complementarities that were exploited in the IT value cocreation processes.

Contrast with other intentions of defining processes (Kim et al., 2019; Takahashi & Takahashi, 2021) and the limited research on the role of dynamics capabilities in the creation of value cocreation (Sun & Zhang, 2021), we provide theoretical insights into extant literature about the processes of cocreating IT value and what motivates multi-firms to build joint digital solutions in highly competitive digital platform ecosystems. Supporting previous claims (e.g., Teece, 2018), innovation process requires active orchestration of assets (tangible/intangible) by managers. Teece (2007) further suggests that firms with strong dynamic capabilities result in “value-enhancing orchestration” of assets among firms involved within the business ecosystem (p. 26). Our findings align with researchers suggesting that firms must provide free access to complementary resources to facilitate exchanges and interactions between firms (Siaw and Sarpong, 2021) so that orchestrators of platform-based ecosystems may profit from innovations (Helfat & Raubitschek, 2018), and facilitate ambidexterity (Haim Faridian & Neubaum, 2021).

We posit that *knowledge-sharing* and *governance* are critical processes in IT value cocreation particularly for the central hub firm (digital platform), since it requires effective orchestration of processes, interactions, and resources from multiple firms. Our findings align with Roberts et al., (2016) in that at the *sensing* capability stages, firms need access to new information and knowledge which helps managers to recognize new opportunities. Therefore, opportunity recognition requires both access to information and the ability to sense new developments (Roberts et al., 2016). Further, researchers suggest that organizational characteristics such as governance structure may influence the relationship between dynamic managerial capabilities and individual characteristics (Roberts et al., 2016). At the same time, managers play a key role in recognizing

opportunities, making appropriate IT investments, and orchestrating assets to appropriate returns from innovation (Augier & Teece, 2009). Our findings highlight the importance of knowledge-sharing, and effective governance and orchestration in digital platform ecosystems.

Nambisan & Sawhney's (2011) theorized the hub firm's orchestration processes, which involve network orchestration processes reflecting the interaction between innovation design and network design elements. Our study aligns with Nambisan & Sawhney's (2011) construct of the hub-based or orchestra model, which involves a group of firms coming together to exploit a market opportunity based on an explicit innovation architecture that is defined and shaped by a dominant firm (Nambisan & Sawhney, 2011). For example, in our cases, both the Cloud Platform Provider and BPM Platform acting as a hub firm to influence and facilitate value cocreation and appropriation. Therefore, orchestration, in the context of digital platform ecosystems, can be viewed in terms of the "matching of problems and needs with potential solutions" (Nambisan et al., 2017, p. 230). A hub firm is the one that possesses prominence and power and holds a central position in the network structure. Hub firms use their power and take on a leadership role in pulling together the dispersed resources and capabilities across network-based digital platform ecosystems (Dhanaraj & Parkhe, 2006; Wasserman & Galaskiewicz, 1994).

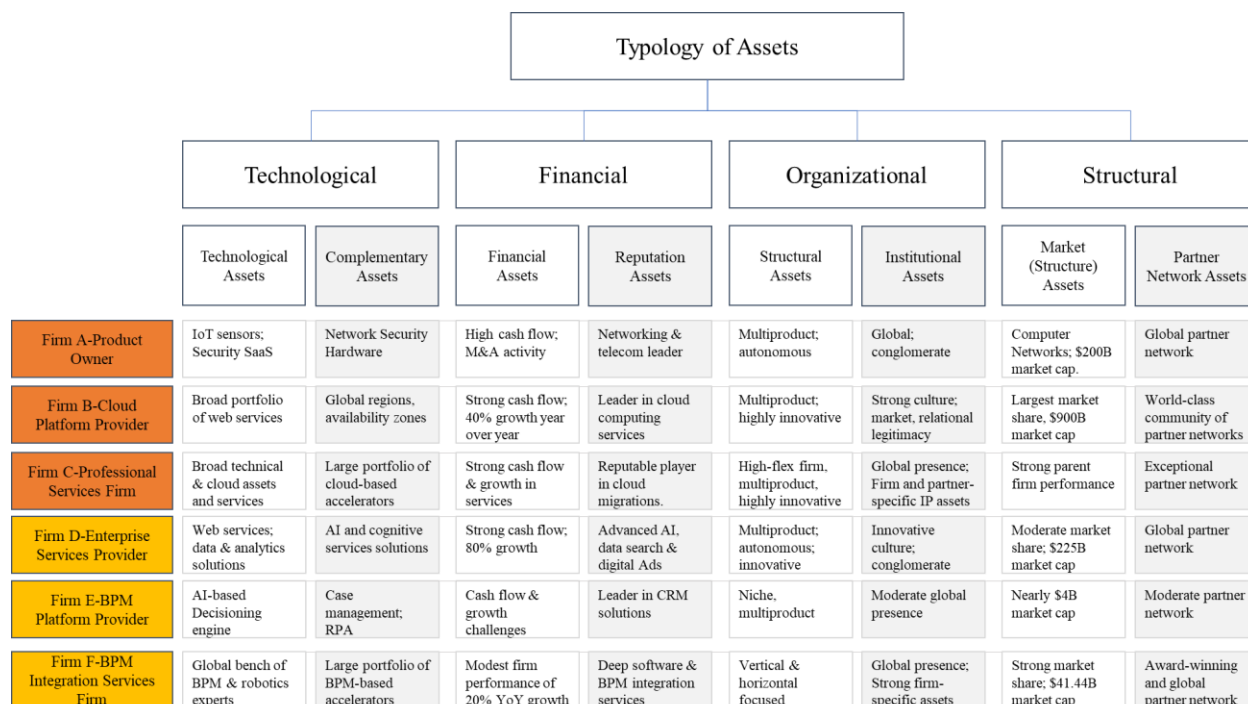
In attempting to reduce the frustrations and discomfort of platform providers not meeting the needs of customer's complex technical requirements, the digital platforms are forced to be nimble and flexible, while having strong governance and orchestration capabilities. Our findings suggest that digital platforms need to have a degree of openness and be modular in terms of architectural capabilities and services. Teece (2007) conceptualized the notion of value-enhancing orchestration of assets among firms involved in value cocreation. Nambisan & Sawhney (2011) suggest orchestration processes potentially involve characteristics or elements of both innovation

design and network design. The three design elements include modularity, openness, and embeddedness. *Modularity* implies the “degree to which the network’s innovation architecture has been decomposed into independent or loosely coupled modules (Baldwin & Clark, 2000)” (p. 43). Network *openness* relates to “how open or closed an innovation network is” (p. 44). Network *embeddedness* relates to the “contextualization of member activities and interactions in the social structures of the innovation network” (p. 44). Our findings suggest that digital platforms need to be *modular* and *open* in nature to drive more platform consumption and usage across digital platform ecosystems, but also to generate more value in the network. Similarly, network *embeddedness* is critical for digital platforms to attain legitimacy in complex and large digital platform ecosystems. Nambisan & Sawhney (2011) suggest that *innovation leverage* “generates additional value in the network (for asset owners as well as the firms that consume the assets), and the potential for innovation leverage enhances the appeal of the network to existing and future members” (p. 42). Where *innovation coherence* requires a hub firm to envision and own the changes in the network in terms of innovation goals and architecture (innovation design) and the roles and interactions of the network members (network design). Lastly, *innovation appropriability* relates to the “mechanisms available for partners to appropriate value from their innovative contributions” (p. 42).

Lastly, assets and complementary capabilities play a critical role in IT value cocreation. Grover and Kohli (2012) introduce these concepts but lack the nuances and specifics of these assets and capabilities. *Assets* involves firms contributing specialized assets that facilitate the creation of new forms of digital solutions. *Complementarity capabilities* is about exploiting each other’s complementary resources such that together strengthens the source of value cocreation and partners could not build these joint digital solutions in isolation (Grover & Kohli, 2012, p. 226).

But what exactly are those assets and complementary capabilities? We take Grover and Kohli's assets and complementary capabilities constructs to perform a deeper view into exactly what are those specialized assets and capabilities that are shared by the firms involved in the IT value cocreation journey. These assets are broken down in a typology structure where we decompose the assets into four overarching categories (Teece, 1997): technological, financial, organizational, and structural. Under the structural asset class, we expand Teece's (1997) classifications by adding *Partner Network Assets* as a new asset type that is highly relevant in IT value cocreation in digital platform ecosystems. *Partner Network Assets* refers to the deep and broad portfolio of the digital platform ecosystem and partner network inclusive of online marketplaces (curated digital catalog where customers buy and deploy third-party services, data, software), third-party developers, independent software vendors (ISVs), system integrators, etc. Figure 7 provides a summary of the typology of assets for digital platforms (BPM Platform and Cloud Platform Provider), customers, and professional services firms. The following typologies of assets were identified across cases.

Figure 7: Typology of assets



Teece et al (1997) suggest that the strategic posture of a firm is determined by its learning processes, coherence of internal and external processes, and incentives – but also by its specific assets (e.g., specialized equipment, reputational and relational assets) (p. 521). On the Technological asset classes, complementary and cospecialized assets are particularly important in our overall findings. “Cospecialized assets are a particular class of complementary assets where the value of an asset is a function of its use in conjunction with other particular assets” (Teece, 2007, p. 20). Further, cospecialization and joint use is value enhancing for customers and digital platforms – and, most importantly, cospecialized assets are hard to purchase in the market and replicate (Teece, 2007). For instance, in Case 1, the Cloud Platform Provider co-developed *accelerators* (free packaged code used to accelerate cloud adoption) with partners, competitors, and customers. Similarly, the Product Owner’s (Firm A) security and network-based hardware combined with the Cloud Platform Provider’s cloud infrastructural assets developed a cloud-based SaaS security application. In Case 2, for instance, the BPM Platform and the customer co-

developed and end-to-end business process orchestration and robotics process automation (RPA) solution which is shared and reused across the enterprise.

The Financial asset classes capture both financial (firm performance) and reputation (intangibles and position in the market) assets. The Cloud Platform Provider is clearly the market leader in their industry with superior firm performance (~40% year over year growth) when compared to the BPM Platform (financial challenges and slow platform and market growth). However, the BPM Platform is reputable in the BPM and robotics process automation space, making them a strong platform player in the market of process and workflow automation activities.

Organizational asset classes include structural (vertical and lateral integration) and institutional assets (global vs regional-based presence). For the most part, all involved firms have solid structural and institutional assets – all with global presence – where they enjoy the benefits of drawing and tapping into intellectual property, resources, and expertise at a global scale. The core difference between the Cloud Platform Provider and BPM Platform is that one is a multiproduct and conglomerate (cloud provider) with stronger platform legitimacy whereas the BPM Platform has a smaller global footprint, is recognized as a market leader but considered a niche platform.

Lastly, the Structural asset classes involve market (structure) assets with the newly added classification as *partner network assets*. From a market assets standpoint, the Cloud Platform Provider is clearly the dominant player along with the Enterprise Services Provider (Firm D) with over \$2T in market cap combined, followed by the BPM Integration Services Firm (\$41.4B market cap). Similar posture when it comes to the Cloud Platform Provider's deep and broad partner network. For instance, the Cloud Platform Provider's partner network features over 100,000

partners across more than 150 countries. On the other hand, the BPM Platform features over 250 global partners.

### **6.5 Implications and Future Directions**

Our research might also offer practical and managerial insights into the challenges and opportunities of IT value cocreation. Our proposed process model provides practitioners with a blueprint and an approach for managing the IT value cocreation journey. We offer a unique and a fresh look at IT-based value cocreation by exploring how firms cocreate joint digital solutions in highly collaborative and competitive conditions and digital platform ecosystems environments. Our results align with Teece's (2018) statement around orchestration, specifically, the firm's resources need to be "orchestrated astutely and coordinated with the activities of partner firms to deliver value to customers" (p. 43). These learnings provide distinctive value cocreation practices for managers, partners, and platform owners.

An avenue that perhaps requires further investigation is how and why firms collaborate in either loosely or tightly coupled digital platform ecosystems or innovation networks. Loose coupled innovation networks can experience unstable relationships among network members and competitive pressures among members can impair the instability where firms may stop collaborating or start collaborating with a competing network (Dhanaraj & Parkhe, 2006). Per our findings, we can infer that a mission-critical role of the hub firm – as the orchestrator – is to maintain a strong appropriability regime that is key to keep existing actors in the network. Orchestration in digital platforms and dynamic ecosystems, then, is about generating network externalities and increasing returns. Therefore, the hub firm (or the digital platform acting as the orchestrator) plays a key role because of its capacity to extract more value from the network, controlling some resources to obtain a bigger piece of the pie by managing knowledge mobility,

trust, socialization and shared identify to ensure the stability of the network's dynamics (Busquets, 2010).

## **6.6 Conclusion**

Our aim in this study is to further understand the core processes to carry out successful IT value cocreation in digital platforms. To answer our research question, we adopted the dynamics capabilities as our theoretical lens, and exploit a multi case study where multiple firms come together to cocreate IT-based solutions. These firms were involved in co-development, co-sharing of resources, co-marketing, and co-selling activities. This unique combination of firms cocreating value allows us to tease out key processes involved in IT value cocreation anchored through the lens of dynamics capabilities.

This study makes several contributions to research, and we believe our results can inform extant research in multiple ways and our study carries several implications for platform owners, customers, and partners forming partnerships to cocreate IT value. First, we proposed a process model by drawing on the dynamics capabilities (Teece et al., 1997) and its application to IT-based value cocreation (Grover & Kohli, 2012), as well as digital platform ecosystems (Hein, Schreieck, et al., 2019), to tease out the underlying processes involved in IT value cocreation in digital platform ecosystems. Second, we address the need for research on the “processes” of IT value cocreation in IT platform-based, competitive environments (Grover & Kohli, 2012). Our study highlights a unique set of processes – including challenges and roadblocks along the cocreation journey. Third, we advance extant literature by introducing multiple value drivers and inputs (assets, resources, knowledge-sharing) that trigger the value cocreation processes, as well as the outcomes and value derived (revenue, speed to market) from the IT-based value cocreation lifecycle. We illustrate the specific sources of IT value cocreation by establishing a link to Amit

and Zott's (2011) four major value drivers, which are anchored in the strategic management theory. Fourth, we extend the scope of the dynamic capabilities literature (Teece et al., 1997, 2018) by integrating a digital platform ecosystems perspective to exploit IT value cocreation in multi-firm environments (Haim Faridian & Neubaum, 2021; Helfat & Raubitschek, 2018; Mandrella et al., 2020; Sunder M & Ganesh, 2020). Firms are faced with disruptive changes and need to think outside the box by engaging with firms that form part of greater digital platform ecosystems (Dattée et al., 2017). We complement scholarly work on dynamic capabilities (Matarazzo et al., 2021) by exploring how firms cocreate IT value by reconfiguring their resources and capabilities across a partner network in fast changing ecosystems. Lastly, we link dynamics capabilities literature with IT value cocreation literature by offering insights on how digital platforms can facilitate the simultaneous development of digital solutions in multi-firm environments. We believe that our study extends extant literature in IT value cocreation and dynamics capabilities.

The research choices will create some limitations and inspire other avenues for future research. A limitation of this study is that findings are derived from two single case studies and therefore cannot be generalized to all settings. We do not claim to have an exhaustive list of processes for co-creating IT value. Rather, we provide the initial steps for future research to build upon what are the processes and the interdependencies. Other researchers have proposed focusing on specific aspects of dynamic capabilities to illuminate other aspects of digital innovation (Teece, 2018) or the orchestration of multi-layered platform ecosystems (Autio, 2022). In sum, our study demonstrates the relevancy and importance of capturing organizational processes in IT value cocreation in digital platform ecosystems.

## 7 Chapter 5: Balancing Coopetition in IT Value Cocreation

*Note:* Preliminary version of this chapter was presented at the AMCIS 2021, and was awarded **Best AMCIS 2021 Complete Top 25% Papers** [[link](#)]



Paper reference:

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### Abstract

Firms today are increasingly operating in digital platform ecosystems, bringing together various players to capture economic value through new models of collaboration. Various firms across industries are making joint IT investments in digital platforms and establishing alliances with other firms – including competitors – to cocreate IT value and to drive innovation more quickly than the competition but raises challenging tensions. How and why tensions emerge remains under searched particularly when firms cocreate digital solutions in coopetitive environments. Motivated by Grover and Kohli's (2012) framework for cocreating IT value, this research employs the paradox literature as a theoretical lens to develop a comprehensive model for examining coopetitive tensions and their management. Using grounded theory methodology, we conducted a multi case study of six firms in the digital platform ecosystems space (cloud computing vendors, BPM Platform, high-tech firm, system integrators), during which we encountered three nested paradoxes of IT value cocreation in coopetitive environments: business strategy (transactional-transformational), technology management (platform adoption-platform stability), and information sharing (efficiency-novelty). Building on paradox literature, we shed light on what triggers such tensions and theorize how management strategies and tactics help manage these intertwined paradoxes to deliver business outcomes.

*Keywords:* IT value cocreation, digital platforms, trust, co-opetition, orchestration



## 7.1 Introduction

A contemporary issue of cocreating IT value is of increasing importance as more firms seek to be agile and innovative (Grover & Kohli, 2012) by participating in collaborative environments, afforded by digital platform technologies (Ramaswamy & Ozcan, 2018). Firms today are working in digital-platform ecosystems, bringing together various players to capture economic value through new models of collaboration, and to stay relevant in the market and ahead of competition, however, tensions and competing demands among firms are inevitable and ubiquitous (Gaim & Wåhlin, 2016; Smith & Lewis, 2011). For example, profitability versus growth (Toth et al., 2022) or exploitation versus exploration (March, 1991). Despite tensions, these firms are making IT investments in digital platforms and establishing interorganizational alliances with other firms – including their customers – to cocreate IT value and innovate more quickly than the competition. By paradoxical tensions, Smith and Lewis (2011) refer to a combination of “elements that seems logical individually but inconsistent and even absurd when juxtaposed” (Smith & Lewis, 2011, p. 382).

The rise of digital platform ecosystems in recent years has increased significantly and will continue to grow as more platform owners drive value and innovation by co-creating products and services with other firms in their platform ecosystems (Evans & Gawer, 2016). The World Bank projects that an emerging set of digital ecosystems in retail and institutional spaces could account for more than \$60 trillion in revenue by 2025, or more than 30% of global corporate revenue (Atluri et al., 2017). Further, five innovation platforms<sup>5</sup> (Microsoft, Oracle, Intel, SAP and

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<sup>5</sup> An innovation platform is a technology, product or service that serves as a foundation on top of which other firms (loosely organized into an innovative ecosystem) develop complementary technologies, products or services.

Salesforce) alone have a total market cap of \$911 billion – and six integrated platform companies<sup>6</sup> (Apple, Google, Facebook, Amazon, Alibaba and XiaoMi) have a market cap of \$2 trillion (Evans & Gawer, 2016). Contemporary research suggests that the customer and the provider co-create value together in a joint sphere through direct interaction in this value creation process (Grönroos, 2011; Grover & Kohli, 2012; Vargo & Lusch, 2004, 2017). Value creation in the digital age has become value cocreation between firms and customers (Bettencourt et al., 2014), and the emergence of big data has been the primary driver for this disruptive change (Xie et al., 2016). Further, cocreation research has increased and been linked with areas such as product development (Davis, 2016; Ramaswamy & Ozcan, 2018; Sarker et al., 2012), collaborative innovation (Bogers et al., 2010), and platform-based and multi-firm partnerships (Ceccagnoli et al., 2012).

Tensions tend to arise among participating firms due to conflicting institutional demands or with inconsistencies between expectations and organizational motivations (Oliver, 1991). Tensions are coexisting and contradictory (Öberg et al., 2020) yet represent discomfort generated by ambiguity and because of the need to accommodate contrasting demands (Mini & Widjaja, 2019; Toth et al., 2022). Gaim and Wählin (2016) suggest that in contemporary firms these competing demands are inevitable and ubiquitous. Drawing on paradox theory, more researchers (Andriopoulos & Lewis, 2009; Gregory et al., 2015; Toth et al., 2022; Wei et al., 2022) are exploring the phenomenon of paradoxes in digital platforms and innovation. We believe our results can inform extant research and contributes to multiple strands of the information systems (IS) and IT-based value cocreation literature. First, our study is unique and the first to contribute to extant literature by examining how firms cocreate IT value (Grover & Kohli, 2012) and balance

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<sup>6</sup> An integrated platform is a technology, product or service that is both a transaction platform and an innovation platform. This category includes companies such as Apple, which has both matching platforms like the App Store and a large third-party developer ecosystem that supports content creation on the platform.

coopetition (cooperation and competition) in digital platform ecosystems. Previous scholars in IS have called for the need for more theory building (Gregory et al., 2015) that extend current work and our findings suggest that paradox lens may be useful in extending research in IT-based value cocreation in complex digital platform ecosystems environments. Prior research on tensions has investigated organizational and power dynamics (Greenwood & Hinings, 1996), innovation context (Andriopoulos & Lewis, 2010), IT transformation contexts (Gregory et al., 2015), and tensions between efficiency and effectiveness (Kohtamäki et al., 2021). Our study extends the paradox and IT value cocreation body of research by exploring a phenomenon that is everchanging and dynamic.

Despite of extant research, little has been shed regarding how firms cocreate IT value in digital platforms. Most prior research has viewed IT value from the perspective of a single firm with the premise that IT investment in a single firm leads to value for that firm, such as in the context of transactions in interorganizational systems or outsourcing arrangements in which the value research focused on how each firm benefits from these types of relationships (Kohli & Grover, 2008). Researchers in the digital platforms community (de Reuver et al., 2018; Gawer & Cusumano, 2014a; Kapoor & Lee, 2012; Leijon et al., 2017) claim it is necessary to expand our understanding of how firms innovate together, what capabilities are required, and the challenges and opportunities in collaborative environments. Further, although the role of digital platforms in value cocreation between firms and their partners has been studied (Ceccagnoli et al., 2012), the role of customers remains unexplored (Xie et al., 2016). Similarly, the existing literature concerns dyads (e.g., customer, provider) but neglects multifirm relationships, such as triadic arrangements (e.g., platform provider, product owner, system integrator) to achieve business outcomes (Davis,

2016). Limited research exists in value creation and value appropriation mechanisms in alliance network relationships (Ceccagnoli et al., 2012).

To investigate this important issue, we examine IT-based value cocreation arrangements in cooperative environments where multi-firms build products and services enabled by two digital platform ecosystems. I therefore ask the following research question:

*RQ: How do firms manage cooperation and competition when cocreating IT value in digital platforms?*

To answer the research question, I conducted a multiple case study as described in Chapter 3, where I explain the research setting and data collection methods in greater detail. In the next section, I detail the analytical framework for the data analysis.

## **7.2 Analytical Framework**

In this section we explain the approach and steps taken to conduct the data analysis. We thoroughly analyzed both cases, moved from raw data toward identification of specific cooperative-based tensions and management strategies in digital platform ecosystems. We applied an iterative approach to data analysis building by constantly referencing data and literature using grounded theory approach (Gioia et al., 2013; Strauss & Corbin, 1990). Primary data collected from the fieldwork was coded for analysis with the assistance of NVivo. All interviews were audio recorded and transcribed into texts, which were then processed in NVivo. This step required constant comparison between the transcriptions and audios to ensure clarity, accuracy, and consistency. While this step required time and patience as it was a rather laborious process, it allowed us to get deeply familiar with the data. On average, it took 3-4 hours to code one interview. Further, data were examined through a process of three rounds of coding, employing and following the guidelines of Gioia, Corley, & Hamilton (2012) to strengthen and guarantee rigor in our research.

### 7.2.1 Stage 1: 1<sup>st</sup> Order Analysis – Broad Explosion of Codes

The first round involved the coding of first-order codes. Within each case, we first took a birds-view approach to gain an understanding of the data and start uncovering patterns and nuances of how firms cocreate IT, identifying contradictory statements and potential tensions. We immersed ourselves with the data by reading through the transcripts and listening to each interview repeatedly. The goal was to identify an inventory of high-level ideas, as well as identify references between the data and the theoretical framework for cocreating IT value. These ideas and references were documented as memos in NVivo. Gioia et al (2012) mentions that the “number of categories tends to explode” in the 1<sup>st</sup> order analysis, and, in our case, we identified 320 NVivo codes (categories). Combing through this large bucket of categories we identified patterns, friction, and tensions using language indicators such as: ‘unlocking big bet’, ‘we have to solve’, ‘move the needle’, ‘whole value proposition’. We also paid attention to any contradictory statements within the same transcript, performing constant comparison (Strauss & Corbin, 1994). Other relevant secondary materials such as blogs or websites were imported into NVivo. The initial coding took approximately five (5) months to complete for the first case, and nearly six (6) months for the second case. In this step all transcripts were coded independently taking an iterative approach by going back and forth between the theoretical framework, literature, and emerging findings. Gioia et al (2012) suggests that at this stage it is normal to feel “lost” and that is precisely what occurred to me as we had a large sheer number of categories which became overwhelming. As described by Gioia (2004), *“You gotta get lost before you can get found (Gioia, 2004)”* (Gioia et al., 2013, p. 20). Getting “lost” in the data forced us to think about how each of the categories relate to one another, conceptually. We started asking more pointed, theory-generating questions (Myers, 2013), and theoretical concepts, themes and patterns began to emerge from the data analysis. For example,

we asked: 1. How are these categories related? 2. What is the relationship between a technology-related blocker and platform stability? 3. What is the novelty? Asking these questions helped us materialize a clear set of concepts and tentative relationships from the interviews – a process termed “theoretical sampling” (Glaser & Strauss, 1967).

To strengthen validity and reliability, a second author, my doctoral Advisor, coded two transcripts (interviews) independently to compare and contrast from my own coding results. We found that the initial first-order coding performed by my Advisor were comparable and aligned to my coding results, but also captured newly identified codes and reached consensus and agreement with my Advisor. At this stage we began to find relationships between categories and giving certain categories labels or phrasal descriptors (Gioia et al., 2012) – e.g., ‘creation of new services’, ‘technology modernization’, ‘cloud-based ecosystems’, etc. The first-order codes comprised of language used by informants or descriptive phrases when in vivo codes were not available (Strauss & Corbin, 1990).

### **7.2.2 Stage 2: 2<sup>nd</sup> Order Analysis – Emerging Themes, Linking Concepts**

During stage two we looked for links between and among the first-order concepts, which made the process of grouping them together into second-order themes (Andriopoulos and Lewis, 2009). Drawing on the theoretical literature, field notes, interview scripts, core concepts and common thematical areas, important supporting statements, and logical relationships were identified and categorized. At this stage of the process, we had identified a total of open 139 codes for the first case and 181 codes for the second case (320 total), as well maintaining an inventory of memos to record ideas, insights, and interpretations of the case data. This inventory of first-order and second-order codes helped us build a basis for a data structure (Gioia et al., 2013) but without any inferred hierarchy (Saldaña, 2016). This was an iterative process and we made

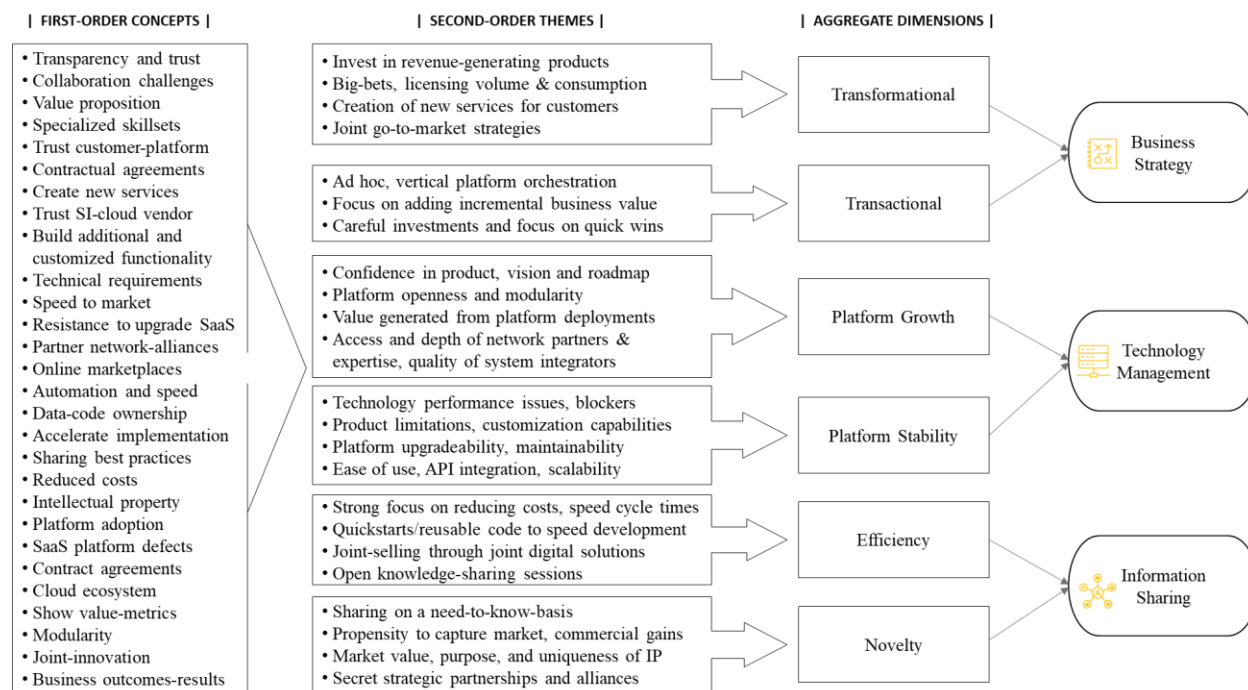
constant comparisons between the first-order and second-order codes to advance our understanding of the data and identify theoretical constructs and relationships. These concepts emerged from the data as opposed being guided by a priori hypotheses (Strauss & Corbin, 1990). Furthermore, we applied semantic relationships (Spradley, 1979; Urquhart, 2013) for first-order and second-order themes and wrote theoretical memos about their relationships (e.g., *Intellectual Property is a characteristic of Governance*; *New knowledge and retention is kind of Absorptive capacity*). The data structure began to take shape and we began identifying the major themes (“aggregate dimensions”) where we reduced the 300 plus categories to a much more manageable number (Gioia et al., 2013). We reduced the number of codes by linking and reducing the lower-level codes to a core set of themes, forming more abstract high-level categories, and consolidating lower-level themes (Appendix 4, 5). This step was rather tedious and slow and challenging, however, it allowed us to get closer to the data and be more analytical of the data. Our analysis began to bring clarity and unraveled patterns allowing us to begin drawing emerging themes (Gioia et al., 2013) and the nuances of how firms manage the process of IT value cocreation, higher level paradoxical links and tensions, and management approaches. At this point we achieved a solid set of workable themes and the culmination of the concept development process led to a “theoretical saturation” (Glaser & Strauss, 1967). This, again, was an iterative process and we felt the need to further distill the second-order themes even further into 2<sup>nd</sup>-order “aggregate themes” (Gioia et al., 2013).

### **7.2.3 Stage 3: Aggregate Dimensions**

Following within and standard cross-case analysis techniques (Eisenhardt, 1989), we looked for similarities and key differences across cases, comparing the categories developed in the second stage. As we approached the end of the analysis, we began to assess the commonalities to

better understand the relationships across cases, between categories and determine if any existing codes could help us theorize (Urquhart, 2013). As Urquhart (2012) describes, “something interesting happens when we put categories into a diagram” (p. 114), therefore, we developed multiple iterations of integrative diagrams (Strauss, 1987) and similar themes were consolidated into aggregate dimensions that served as a foundation of our emerging framework (Andriopoulos & Lewis, 2009). The exercise of building iterations of integrative diagrams helped us to narrow down and arrive at convincing explanations for the aggregate dimensions. Following Gioia et al.’s (2013) guidelines and as described by Andriopoulos and Lewis (2009), we labeled the dimensions (e.g., transformational, transactional; platform growth, platform stability, etc.) by continuously referring to existing literature and consolidating content at a much higher level of abstraction. This process was iterative and involved capturing evidence for each higher-level aggregate dimension – e.g., tension descriptors, management strategies. We assessed reliability by validating each dimension with evidence, plotting the higher dimensions on a Microsoft Excel worksheet (Appendix 5), and comparing codings of the primary author and my doctoral Advisor. We discussed and resolved any disagreements through multiple iterations and discussions. At this point and as described by Gioia et al., (2013), we were ready to transition in which our data and existing theories are considered simultaneously and begin building an emerging theoretical framework. Gioia et al., (2013) describes that this step “compels us to begin thinking about the data theoretically, not just methodically” (p. 21). We went back and drew on existing studies of IT value cocreation, paradox, and cooptation to refine our labels and understandings (Andriopoulos & Lewis, 2009). Figure 8 provides a graphical representation of our data structure and how we progressed from raw data to themes in conducting the analysis, which depict the identified paradoxes of IT value cocreation and their strategic management, respectively.

Figure 8: Data Structure: Paradoxes of IT Value Cocreation and Competition



### 7.3 Findings

We present the empirical findings in the next sections to address how firms manage cooperation and competition when cocreating IT value in digital platforms. We identify how firms manage cooperation in IT value cocreation in digital platform ecosystems, which include capturing main *tensions* and *strategies* to manage tension. After presenting these findings, we present an integrative, abstracted model that builds on the theory development in this study and the theoretical integration efforts presented in this section.

#### 7.4 Paradoxes of Coopetition in IT Value Cocreation and Their Management

Investigating cooperative IT value cocreation tensions across the platforms, we identified three robust tensions. To interpret our findings, we used paradox literature as well as past studies of IT-based value cocreation and cooperation. We applied paradox as a valued lens, integral to our emerging, conceptual model (Andriopoulos & Lewis, 2009; Lewis, 2000; Poole & Van de Ven, 1989). We now leverage this paradox framework to examine three interwoven paradoxes of cooperation in IT value cocreation: 1) Business Strategy, 2) Technology Management 3) Information Sharing.

##### 7.4.1 Paradox of Business Strategy: Transformational and Transactional

*But sorry, but to be real here for a second, it's all good positive reinforcement work, but it's not the scale of volume that we need for the big bet, we have to solve the problem.*

*[Firm E-BPM Platform Provider, Senior Director, Sales]*

This quote exemplifies the business strategy paradox as tensions emanated from needing to emphasize transformational (e.g., big bets, high volume, and rapid growth) and transactional (e.g., project by project, low volume but steady growth). The tug of war is caused by customers pursuing transactional initiatives to minimize and manage business risk; while digital platforms – and often system integrators – push for larger, transformational initiatives to drive bigger outcomes

for customers, but also to increase platform adoption resulting in higher consumption revenue and market share.

We now describe one business strategy paradox scenario for each case where we cover the underlying tension, briefly explain the nuances that causes the business strategy tensions, followed by the various management approaches employed by the case firms, and we conclude with outlining some of the business outcomes.

***Business Strategy Tension in the BPM Platform.*** Firm D (Customer) is an Enterprise Services Provider selected Firm E (BPM Platform) as their digital platform to improve and automate complex business processes and operations within a single business function. To fill the BPM integration skills gaps, the customer partnered with Firm F-BPM Integration Services Firm. Firm D's objectives are to solve tactical process deficiencies, demonstrating return on investment (ROI) one project at a time. Meanwhile, the Firm E-BPM Platform and Firm F-BPM Integration Services Firm are far more ambitious and seek larger, transformational programs (*big bets*); not ad hoc, project-by-project. For Firm F (BPM Integration Services Firm), more BPM integration services scope of work assumes increased billable resources by adding more headcount to the projects, resulting in significant increased revenue from BPM integration consulting services. The BPM Platform is in pursuit of branching out of that single business function and become the digital platform that orchestrates business process management and automation across multiple business functions, if not the entire global enterprise. Our findings suggest that case informants viewed big bet-breakthrough and slow growth tension as paradoxical. Informants from Firm E-BPM Platform articulated slow growth as transactional, whereas big bet-breakthrough as transformational with larger revenue-generating opportunities and has the potential to enhance legitimacy and branding in the BPM platform market segment. Transactional efforts assumed slow revenue growth for Firm

E-BPM Platform and Firm F-BPM Integration Services Firm, but less business risk for the customer (Firm D-Enterprise Services Provider).

Therefore, case informants viewed transformational-transactional tension as paradoxical. *Why and what exactly causes this tension?* There are internal selling challenges on the BPM Platform owner (Firm E) side because they are looking to help the customer (Firm D-Enterprise Services Provider) with process automation across the enterprise, at a much larger scale to drive platform adoption (*transformational*), and not necessarily focusing on smaller functional units. ***Transformational*** emphasis entails taking higher risks and searching for larger opportunities to not only enhance the platform's reputation internally within the customer, but also externally for branding, and higher platform consumption revenue (e.g., increased software licensing subscriptions). For instance, a VP from the System Integrator explains the frustration in trying to influence the customer to consider a larger transformational endeavor:

*We understood the value proposition, we approved it in a proof of value. The client was still not buzzing. We simply went through that motion like a thousand times with them. Everybody said yes, but nobody was willing to go ahead and sign any paperwork around it.*

*[Firm F-BPM Integration Services Firm, VP, Professional Services, System Integrator (Case 2)]*

From the customer's perspective, a transformational, big bet idea appeared to be secondary, but a valued tenet. The customer is seeking more proof of value (*transactional*) before pursuing a larger transformative effort – e.g., slower but steady growth. However, a proof of concept in the eyes of the Firm E-BPM Platform and Firm F-BPM Integration Services Firm is seen as counterproductive, slows down BPM platform consumption, and an effort that does not immediately solve the customer's business challenges. A VP of Strategy from the BPM Platform explained, *“Just one question about [System Integrator], which is relevant to the big bet, any additional insight, [Account Executive], on why they're going down this kind of proof-of-concept*

*you guys need to invest route versus, hey, this is proven, let's go solve this together, you know?"*  
 (Firm E, VP of Strategy, BPM Platform).

In contrast, **transactional** seemed infused with conservatism, as customers stressed the value of project-by-project and immediate return on investment (ROI). Customers seemed to place high priority on maintaining business operations with modest and slow improvements. The customer (Firm D-Enterprise Services Provider) insists on focusing on sequencing and delivering smaller ad hoc projects to minimize risk while driving value. While Firm E (BPM Platform owner) aimed for transformational initiatives, the customer (Firm D-Enterprise Services Provider) pursued *transactional* activity and continue to address smaller, functional challenges with the BPM Platform (slow growth), but also take advantage of the momentum that the customer and BPM Platform have created and exploit enterprise-wide as well as go-to-market opportunities, *"We already have a number of customers where we're already engaging. We're already developing real time [BPM Platform] solution for them together... there's more to us than just real time [solution]...there is a path forward for us to really reach across the [enterprise] spectrum for joint go-to-market solutions together."* (Firm E, VP of Partner Alliances/ISV, BPM Platform).

In contrast to a more aggressive big bet-breakthrough, slow growth with a laser focus on efficiency and return on investment (measurable outcomes) were of top priority to the customer, as explained by a Program Manager, *"I was having a discussion with [Account Executive, BPM Platform], [Senior Director, System Integrator] and myself and [Director, Customer] on the big bet. And the question [Director, Customer] has asked of me is, can you get me the ROI of end-to-end orchestration which we are doing. He's [customer] telling me that, I want you guys [System Integrator] and [BPM Platform] to come and tell me whatever we're implementing for [Functional Area], how much of a benefit I'm going to get"* (Firm F-BPM Integration Services Firm, Program

*Manager, System Integrator*). The BPM Platform (Firm E) and system integrator (Firm F-BPM Integration Services Firm) aligned on a go-to-market strategy that was unified and had a common goal to pursue transformational initiatives. However, the two firms experienced lower success in driving transformational initiatives because the customer leaned heavier towards transactional initiatives. In this case, the customer (Firm D-Enterprise Services Provider) was more concerned with smaller, project-by-project growth and less transformational (big bets). What are some potential management approaches and strategies to deal with such tension? Next, we describe management strategies employed.

***Management Approaches.*** In contrast to slow growth's conservatism, a big bet emphasis involves risk taking in search of joint go-to-market opportunities that may enhance the customer's and digital platform's reputation in the marketplace. The firms cultivated a paradoxical vision that accommodates the dual emphases. To manage the paradox of business strategy, firms adopted a balancing tactic (Oliver, 1991). *Balancing* tactics refer to the accommodation of multiple constituents demands in response to institutional pressures and expectations. More specifically, balance is the organizational attempt to achieve parity among or between multiple stakeholders and internal interests" (Oliver, 1991, p. 153).

Balancing this paradox and tensions (transformational/transactional), orchestrating people and processes, and coordinating cooperative relationships requires a high degree of cooperation between parties and a significant number of key stakeholders and supporting resources from all the participating firms. For instance, Firm E's account executive acts as the orchestrator and highlights their approach of balancing the needs of multiple key stakeholders, "*I spent quite a bit of time yesterday with [Program Manager, Systems Integrator] and says [Client Lead Partner, Systems Integrator] believes that if we do the discovery and get it started, [Customer] is going to*

*be less apt to question anything by driving through the commercials first. He feels like by getting it started and on its way, it will just grease the skids for them to say yes throughout the program and get really excited about the program faster without trying to dive into all the bigger questions.”* (Firm D-Enterprise Services Provider, Account Executive, BPM Platform).

Oliver (1991) suggests that balancing is about achieving parity among or between multiple stakeholders (p. 153). The BPM Platform and BPM Integration Services Firm balanced the conflicting demands by strengthening the partnership, achieving uniformity and alignment at the executive levels, and making mutual investments (e.g., resource capacity). A senior director in sales explained, *“We just got a whole cast of characters. I mean, over on our side, there are almost fifty people involved. I know there's probably 20 or 30 on your [System Integrator] side at a minimum. It's that ability to serve and align on a goal that I think drives this success in the partnership. And if you're not aligned and you're not, don't have the same core DNA, the fracturing starts happening or the failure starts happening”* (Senior Director, Sales, BPM Platform). Similar to the sales director, an account manager noted the importance of balancing the needs of participating firms and stakeholders and finding the strategic alignment, *“So, the other thing we've done on the big bet is, is we're working with [Director, System Integrator] and [Professional Services Director, BPM Platform] and [Partner Alliances Manager, BPM Platform] to make sure that our [System Integrator] and [BPM Platform] executives have the right alignment.”* Furthermore, the balancing tactic also involved raising and escalating the big bet opportunity at the highest executive level within the system integrator, *“[Lead Client Partner, System Integrator] did present to [System Integrator's] president of North America this week.”*

*Outcomes.* The paradox of business strategy is a balancing act between transactional and transformational initiatives. Informants depicted the need for the digital platform providers and

system integrators to be aligned strategically and establish executive sponsorship at all levels of the organization. At the same time, the firms make joint specialized investments to drive both transactional (slow growth) and transformational (big bet) growth. A win-win situation is where customers achieve their desired business objectives, the platform provider realizes growth and achieves their revenue targets, and the system integrator increases their consulting contract value. As a VP explained where they challenge customers to pursue transformational efforts over small, project-based transactions, “...till we came up with an idea to update a little bit of sales motion with the messaging changed to say it's not about what you're going to get alone when you implement it. It's also about what you are missing with every single passing day that you did not make a decision and being able to throw it in their faces that they're losing close to around \$350K every single passing day that they're not making this decision. We heard it from some other organizations that that did the trick.” (VP, Professional Services, System Integrator). Next, we summarize key findings from the second case.

*Business Strategy Tension in the Cloud Provider Platform.* We encountered tension in the context of co-competitive relationships and environments that led firms to pursue transformational efforts to either stay ahead of competition or not be left behind and slowly lose out on market share. Firm A-Product Owner and Firm B-Cloud Platform Provider are both partners and direct competitors joining forces to drive transformational and transactional initiatives. The paradox of business strategy, therefore, assumes managing co-competitive relationships and intellectual property (IP) become crucial tasks. The following exemplifies some of the difficulties in dealing with transformational initiatives and managing cooperation-competition tensions.

***Transformational.*** Interviews suggest that transformational initiatives between the customer and digital platforms often lead to a co-competitive relationship. Co-competition was one core

theme that emerged during the analysis. We identified how customers build digital solutions with cloud providers, who happen to be competitors as well. A Firm B-Cloud Platform Provider's partner manager explains, *"This whole coopetition where the provider and their customer are competing, we're seeing snowflake competing with redshift, for example, or Netflix with video. And so, this is a fascinating kind of phenomena that, you know, these customers still, the provider-customer relationship that may also be competing with each other"* [Firm B-Cloud Platform Provider, Partner Manager]. Joint selling between customer-cloud providers through channels such as digital marketplaces are core elements that form part of how IT value cocreation enables coopetition. A key concern to the participating firms is the management of intellectual property (IP) during and after the value cocreation journeys, *"And there is a whole deal of IP that we share with third parties to be able to make that happen. And if a third party was going to do the same thing with a different cloud provider that could be a competitor of [Cloud Provider], they will have this information but of course, as partners and covered under mutual NDA's that are always in place when we work with third parties"* [Firm C, Partner Business Development Manager, Professional Services].

Informants highlighted another transformational-based example of co-selling and co-marketing activity. In this scenario, there are four firms that are cooperating and collaborating in a series of joint selling and co-marketing campaigns across North America, yet these four firms are direct competitors. These firms held a series of roadshows across eleven cities where they shared customer examples, architectural patterns and sort of a way of explaining how the Cloud-based data-warehousing software and the visualization software run and work together running on the cloud provider. The Sales and Business Development Manager further explains the cooperative nature of the alliance yet with tremendous potential for larger, transformational efforts: *"So here*

*we have two independent software vendors that are partners themselves. [Cloud-based Data-warehousing Vendor] being a data warehouse usually works with a business intelligence tool like [Visualization Software Vendor]. So they're great partners. Those two technologies run on [Cloud Provider]. So what [Professional Services Firm] is trying to do is trying to explain to their prospects, to the market, the value of having a data-driven culture on the cloud.*" The professional services firm is responsible for explaining the "how" to migrate to the cloud; they can help drive migrations from on-premises data warehouse deployments, or new projects completely bought on the cloud, given their expertise on the cloud provider's platform. This is a unique example of co-marketing, joint selling, or going to market together to exploit the market and aggregate value as a collective, not a single solution. What these four firms did is tailored the messaging to what their prospects business needs – all in one turnkey solution: cloud platform, data-warehousing solution, visualization and business intelligence solution, and the professional services firm that knows how to stitch these digital platforms together and help prospect customers migrate all of these solutions.

What exactly triggers or drives cooperative and transformational activity? Informants suggest that exogenous as well as endogenous factors such as competitive threats, limited organizational skillsets and specialized resources lead customers to look outside and fill these gaps with other partners and competitors. We found that customers are comfortable building solutions with their competitors but are selective in terms of which providers they build these relationships with, especially in cases where there is direct competition between firms, as noted by a partner solutions architect, *"So, in addition to cooperation from a partnership standpoint, there's also a lot of competition and there's a fine line between there. So that dynamic is very much real, and we call it cooperation. Especially with [Customer], that's very much there. I've also seen where companies are reluctant to engage with the partner ecosystem because they think that it's going to*

*put them out of business” [Firm B-Cloud Platform Provider, Partner Solutions Architect, Cloud Provider]. Transformational initiatives often exhibit customer’s vulnerabilities in terms of skillsets, technologies, and capabilities. Therefore, customers look externally and form value cocreation alliances with competitors. Customers understand the need to look externally, or they will be left behind. Firms that repeat alliances with the same vendor(s) expect to earn superior benefits from those partnerships because of trust and better coordination of relation-specific assets and knowledge-sharing routines (Dyer et al., 2018). A partner solution architect highlights the need to establish alliances, or you are going to be left behind the competition, “... in the case of [Customer], but the reality is that if you fail to do that, you are going to be left behind...that's just how businesses today are operating. And if you're beginning to realize the potential of partnerships and you are going to get left behind “[Firm B-Cloud Platform Provider, Partner Solutions Architect, Cloud Provider].*

**Transactional.** While *transactional* activity is perceived as smaller, ad hoc projects, it also involves cocreating IT value with direct competitors and partners, leading to cooperative relationships. For example, part of the security-based SaaS application scope of work that was co-developed between the customer and cloud provider, there was a smaller, in-flight project on internet of things (IoT) that the customer (Firm A-Product Owner) was looking to launch with the cloud provider (a competitor to Firm A-Product Owner). The customer was looking at its existing customer base and how they could provide value added capability in the space of IoT to their end customers by leveraging best in class IoT service capability. The customer decided to partner with the cloud platform provider, also a competitor, to launch this best-in-class IoT service to their end customers. However, the customer solely wanted to build a proof of concept which was categorized as transactional activity – or as a *building block* as described by the cloud provider. From the cloud

provider's point of view, they were looking at it as an adoption vehicle for their IoT services. This was a significant opportunity for both firms, on one hand, the cloud provider can expand and market these IoT capabilities; and the customer is able to strengthen their footprint in the security and networking space.

*So, in the context of the IoT project, [Customer] was looking at its existing customer base of providers and they were looking at how they could provide value added capability in the space of IOT to their end customers by leveraging best in class IOT service capability that its cloud platform at [Cloud Provider] could provide. And from [Cloud Provider] perspective, we were looking at it as an adoption vehicle for our service. [Partner Solutions Architect, Cloud Provider]*

The customer identifies the cloud provider as a competitor but also as a foundation and backbone for innovation. The cloud provider's entire business model is designed for companies to build capabilities for customers or other third-party developers to use and develop innovative solutions on top of. This co-production between the customer and cloud provider is a great example of complementary resources and capabilities and co-specialized assets that create value in the alliance: *"From our perspective, we were writing a building block in the form of [Cloud Provider] IoT services, namely the [name of IOT service] as a building block that could be leveraged within Customer's hardware and ecosystem."* [Firm B-Cloud Platform Provider, Partner Solutions Architect, Cloud Provider].

Transactional activity often turns into larger, transformational initiatives, and pursuing a transformational initiative is exactly the objective of the cloud provider. Risk management and trusting relationships are typically factors as to why firms resist transformational initiatives during the early phases of the trust and relationship building process. Informants suggested that the Cloud Provider Platform (Firm B) approached the customer (Firm A-Product Owner) and proposed an entirely new initiative with the intention of bringing new ideas (*art of the possible*), even if these ideas start small, these eventually morph into larger transformational efforts. The customer's

objective was to develop a security, cloud-based software-as-a-service (SaaS) platform to serve the customer's internal end users, which holds highly sensitive security data. The customer then needs to decide which cloud provider to go to and help solve their challenges. The cloud provider was already serving this customer across other lines of businesses. However, the cloud provider needed to earn the customer's trust, specifically the Senior Director of Information Security and the Chief Information Security Officer. What surprised the customer was the level of attention and care by the cloud provider. The cloud provider proactively met with the customer's senior leadership and fully understood the customer's business challenges and what problems they wanted to solve. This is a critical phase of how trust is established among the participating actors and key stakeholders. The customer entrusts the cloud provider with their data since it will reside on the cloud provider's data centers, *"[Cloud Provider] folks came to me and said, let's talk about security of [Cloud Provider]. Let's talk about the shared responsibility model. Let's talk about how to help you. And I was like, wow, I didn't expect that. I figured they have millions of customers already. Was the score really that important? So, I was pleasantly surprised. [Firm A-Product Owner, Senior Director of Information Security, Customer]."*

We found that the cloud platform provider and professional services firm challenge the customer's thinking and push them to think outside the box and innovate to stay in par or ahead of competition. The cloud platform provider claims that external partners collectively bring new, diverse, fresh ideas to the table. Some of these ideas can be defined as transactional, such as prototypes or proof of concepts, however, the cloud platform provider and professional services firm use these ad hoc efforts as anchor projects that often transform into larger programs. Thus, combining these mixture of skills and capabilities from the collaborating firms can potentially yield to transformational, bigger outcomes, as noted by a Firm C-Professional Services Firm's

partner business development manager, *“And I think there's always an appetite from senior leadership to do something different, do something new, do something innovative and innovation drives-innovation...they're working with companies with different cultures, different ways of working different ideas. And they may challenge the way things are done, they may bring new ways of doing things. And I think that's an incentive as well to partner with other companies in that way.”* [Firm C, Partner Business Development Manager, Professional Services].

However, while pushing the customer to ‘think outside the box’ is a good practice, there are tensions and conflicting messaging and interests between the Firm B - Cloud Platform Provider and Firm C - Professional Services Firm: *“So, there have been cases where they bring in professional services and the [Cloud Provider] account team is desperately pushing service A and we look and we professional services look at the problem at hand and say to the customer “actually services is not going to solve your problem”. And here are the reasons why, this is not a fit, we suggest to go this other route instead, that other route may or may not involve the services that the account team is being incentivized to sell right then”* (Firm C, Principal Data Scientist, Professional Services). This means that the professional firm is looking after the customer’s best interests to prevent the customer from pursuing a transformational initiative when they may not need to or be ready for a transformational idea that is uncertain and not fully defined. To prevent going down the wrong path and protect the customer’s interests, customers rely on contractual agreements but also goodwill. When there is trust in these strategic relationships – including cooperative environments – the actors and key stakeholders tend to move beyond – and to some extent – ignore the contractual agreements and focus on the mission and business outcomes at hand. As described by a Firm A-Product Owner’s Senior Director of Information Security, *“I think a lot of the relationships in the business world are very common sense types. There is all these*

*legal contractual stuff as a sort of, safety net when things go really bad, if they go really bad”*  
*[Firm A-Product Owner, Senior Director of Information Security].*

**Management Approaches.** To manage the paradox of business strategy, firms adopted balancing and influencing tactics (Oliver, 1991). *Balancing* tactics “refer to the accommodation of multiple constituents demands in response to institutional pressures and expectations. More specifically, balance is the organizational attempt to achieve parity among or between multiple stakeholders and internal interests” (Oliver, 1991, p. 153). *Influencing* tactics “may be more generally directed toward institutionalized values and beliefs or definitions and criteria of acceptable practices or performance” (Oliver, 1991, p. 158). Further, Oliver (1991) suggests that “manipulation of belief systems is reflected, for example, in the efforts of a trade association to influence public perceptions of its industry and to lobby government regulators for changes in the institutional rules to which its members are advised or required to conform” (p. 158).

Balancing this tension (transformational/transactional), orchestrating people and processes, and coordinating cooperative relationships requires a high degree of cooperation between parties and a significant number of key stakeholders and supporting resources from all of the participating firms. As a Firm B-Cloud Platform Provider’s solutions architect noted, *“Ideally, you have someone assigned to that kind of collaboration. If it's like a project manager, kind of quarterback person, and they probably kick off with some sort of legal document, like a statement of work or some sort of intention. You have a communication plan, you try to stick to it, and then get the executives involved and see what they're going to do. And then working teams and going to go from there. I don't think it's too standardized on how it gets done. You know, sometimes there's a lot of folks in the kitchen type organization and sometimes there's just a lot of builders”* [Cloud Provider – Solutions Architect]. The cloud provider assigns account managers and/or project

managers to orchestrate the relationships and ensure there is adequate cooperation from all firms. Then the account managers and project managers engage other key resources from the cloud provider's ecosystem – from product, service, support, marketing, and to cloud architecture teams, as noted by a sales and business development manager, *“I am supposed to manage the relationship, sort of 360 degree, I'm supposed to manage everything as their key account manager...I manage any support situation with the help of the technical account managers. I manage every question around building things on [Cloud Provider]. I manage the relationship between [Competitor/Cloud-based Data-warehousing vendor] and our product teams, our service teams”* [Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider].

*Influencing* tactics were adopted by the cloud provider in which they creatively brought clarity and alignment of goals, as well as offering substantial investments and support from the cloud provider to the customer. This tactic influences the customer's perceptions of the cloud provider and to lobby customer's key stakeholders and decision-makers: *“You know we have a lot of different programs in place that help our customers. And anytime there has to be alignment of goals right where there has to be a value proposition for both for all parties. We have as far as who we call on to help our customers. That's pretty broad. We have our account team is the first line of defense...our solutions architect is always there. We understand what the customer challenges are many times as we understand things that are asked by our customers that we are unable to provide an immediate response to, we expand beyond that. We have support engineers, services teams, partner teams, partner success managers; we have professional services to deliver value from a long-term perspective”* (Senior Technical Project Manager, Cloud Provider).

The Cloud Platform Provider's digital partner network ecosystems seemed to be a key ingredient in helping to *balance* and *influence* the business strategy tension. Particularly those

initiatives that lean more towards transformational endeavors and require building partnerships with external players. The coordination of these types of cooperative relationships and alliances are facilitated through a formal partner network. For instance, the partner network is a powerful ecosystem and is managed and owned by the cloud provider. A cloud provider's partner network is composed of hundreds of companies around the world – from small startups, independent software vendors, to large, global enterprises. Many of these network member firms are formal partners of the cloud provider and, in many cases, are direct competitors as it is in this case. As described by a partner solutions architect from the cloud provider, there is a large ecosystem of resources involved that need to cooperate and coordinate different aspects of the project – e.g., architecture solutioning, enterprise support between customers and partners. The partner solutions architect also highlights the importance of having executive sponsorship,

*There is involvement from product folks on both sides. So, they're doing the engineering work so that is there. There's involvement from legal sides so that any agreements that are formed between the two parties, we need to make sure that from a legal aspect, things are clearly called out. The names of the parties have drafted the agreements and get sign offs. There are typically executive sponsors for this...So, the event concerns come from one of the above beings that I mentioned, typically, you have an executive sponsor signing off on an initiative like this. The executive sponsor could be somebody like the VP of a particular service, they can do a service on our side and the VP of a particular view on their side, or it could be the VP of [Cloud Provider Partner Network] televise or somebody on our side that's sort of sponsoring the initiative. [Firm B-Cloud Platform Provider, Partner Solutions Architect]*

**Outcomes.** Coordinating between transactional and transformational initiatives in cooperative environments is challenging. The Cloud Platform Provider applied effective tactics such as balancing and influencing by effectively managing the needs of diverse set of stakeholders, allocating a plethora of resources to support transactional and transformational initiatives. The customer noticed the value generated by the Cloud Platform Provider and their ability to deploy a successful solution that met the customer's needs: *“And I can say that our effort was overall extremely successful, much better than in terms of overall quality, time to market, it runs flawlessly”*

*(Senior Engineering Manager for Collaboration Platforms, Customer. At the same time, the Cloud Platform Provider strategically established executive sponsorship at all levels of the organization, including business partners and competitors. For example, new cooperative alliances were established and announced strategic initiative with customers, competitors, and partners: “... having three platforms get together and rallied to co-create value in the market...we announced and it's an initiative driven by one of our largest focus consulting partners, [Professional Services Firm]. So [Professional Services Firm] just announced a series of events called [Marketing Event]. These are eleven events in eleven cities plus a webinar across North America, where [Professional Services Firm] is joining forces with [Cloud Provider], with [Cloud-based Data-warehousing Vendor], and with [Visualization Software Vendor” (Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider). The cloud provider competes directly with the three vendors, namely, a visualization software vendor, Cloud-based data-warehousing vendor, and a global professional services firm. This event is led by a professional services firm, which is a major partner of the cloud provider. The reason and motivation for this type of collaboration is because the visualization software and cloud-based data-warehousing vendors are both cloud-native and were built on top of the cloud provider’s platform. Therefore, the combined addressable market when these four firms form alliances, opens an opportunity for enormous value creation for all firms.*

***Cross-case analysis: Summing up the paradox of business strategy.***

The above analysis outlined the paradox of business strategy and offered nuances of the transactional-transformational tension. The transactional approach is perceived as more modest and conservative (smaller, low risk projects but with a modest return on investment). Transformational, on the other hand is perceived as larger (‘big bets’) and more complex endeavors.

As seen, balancing the paradox of business strategy involves careful attention to customer's objectives (e.g., cost reduction, innovation, new alliances, etc.), balancing the needs of diverse set of stakeholders, and allocating resources and specialized investments while managing cooperative relationships. Both the BPM Platform and Cloud Platform Provider adopted a **balancing** tactic – a management approach – to mitigate the (transactional/transformational) tension. The difference between the two is that the Cloud Platform Provider created a sense of urgency where the customer can fall behind the competition if they focus on transactional, status quo. The urgency they created pushed the customer to pursue cooperative relationships and strategic go-to-market alliances. On the other hand, the BPM Platform Provider created value proposition to becoming the business process automation orchestration engine for the customer's entire business operations. Meanwhile, the customer preferred smaller ad hoc projects but ensure that there is clear success criteria and measurable outcomes (e.g., ROI).

**Influencing** means that there is a degree of lobbying and manipulating the customer's perception of the cloud platform provider. The approach taken by the Cloud Platform Provider involves bringing a broad range of resources and dedicated team members to serving the needs of the customer. Despite the cooperative nature and relationship between the Cloud Platform Provider and customer, the Cloud Platform Provider's deep digital platform ecosystem appeared to entice customers to pursue both transactional and transformational initiatives. On the other hand, the BPM Platform achieved successful transactional initiatives with slower growth and momentum on the larger, transformational initiatives. The Table below highlights and summarizes the tension on both digital platforms and the adopted tactics (management approaches). We now examine how tensions also appeared nested within existing projects, posing a paradox of technology management.

Table 3: Business strategy tension: Cross-case analysis.

Digital Platform	Tension	Examples from interviews	Management approaches
<b>BPM Platform</b>	Big bet-breakthrough and slow growth tension as paradoxical. BPM Platform pursued larger, <b>transformational</b> efforts (increased licensing revenues).	<p>“...any additional insight, [Account Executive], on why they're going down this kind of proof-of-concept you guys need to invest route versus, hey, this is proven, let's go solve this together”</p> <p>“We understood the value proposition, we approved it in a proof of value. The client was still not buzzing.”</p>	<b>Balancing</b> : accommodating multiple constituents demands in response to organizational pressures. Balancing assumes achieving parity among or between multiple stakeholders. The BPM Platform and BPM Integration Services Firm balanced the demands by achieving uniformity at the strategic levels and making mutual investments (e.g., adding resources capacity to the projects): “We just got a whole cast of characters. I mean, over on our side, there are almost fifty people involved. I know there's probably 20 or 30 on your [System Integrator] side at a minimum. It's that ability to serve and align on a goal that I think drives this success in the partnership.”
	Meanwhile, the customer (Enterprise Services Provider) preferred smaller project-by-project, ad hoc projects ( <b>transactional</b> ). Customer seeks clear ROI and quantify exactly what business value they receive before pursuing new projects.	“And the question [Director, Customer] has asked of me is, can you get me the ROI of end-to-end orchestration...I want you guys [System Integrator] and [BPM Platform] to come and tell me ... how much of a benefit I'm going to get”	
<b>Cloud Platform Provider</b>	Coopetitive relationships and environments that led firms to pursue <b>transformational</b> efforts to either stay ahead of competition or not be left behind and slowly lose out on market share.	<p>“in addition to cooperation from a partnership standpoint, there's also a lot of competition and there's a fine line between there. So that dynamic is very much real, and we call it coopetition.”</p> <p>“... in the case of [Customer], but the reality is that if you fail to do that, you are going to be left behind...”</p>	<b>Balancing</b> appeared to be a common tactic on both digital platforms. The Cloud Platform Provider balanced the tension by orchestrating people, processes, and coopetitive relationships. This requires a high degree of collaboration and cooperation from multiple parties: “Ideally, you have someone assigned to that kind of collaboration. If it's like a project manager, kind of quarterback person”
	The customer was looking to launch a small SaaS-based application with internet of things (IoT) capabilities to serve an existing customer base. However, the Cloud Platform Provider considered the IoT service as a <b>transactional</b> building block.	“From our perspective, we were writing a building block in the form of [Cloud Provider] IoT services, namely the [name of IOT service] as a building block that could be leveraged within Customer's hardware and ecosystem.”	
			<b>Influencing</b> tactics refers to manipulation of beliefs, about trying to influence public perceptions. The Cloud Platform Provider offered substantial investments and support to the customer; this was a tactic used to influence the customer's perception of

the cloud provider: *“You know we have a lot of different programs in place that help our customers. ... We understand what the customer challenges are many times as we understand things that are asked by our customers that we are unable to provide an immediate response to, we expand beyond that.”*

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#### 7.4.2 Paradox of Technology Management: Platform Growth and Platform Stability

*This is getting critical to the point where we're looking at all these things, some of these issues and looking at the work we're starting to line up, the first week of April, it's starting to get a little bit, we're putting work items in jeopardy, meaning, we don't have an environment upgraded, it limits our ability to do some work things that our Marketing teams is asking us for. [Firm D-Enterprise Services Provider, Senior Program Manager, Customer]*

This quote exemplifies the technology management paradox as tensions emanated from an unstable platform, unmet customer needs, product's capability shortcomings, and challenges from troubled technology deployments (e.g., BPM Platform application upgrade projects, Cloud platform provider's integration limitations with other 3<sup>rd</sup> party applications). Informants depicted a paradox of technology management surfacing during technology-based value cocreation, grappling with the need to expand the digital platform's capabilities across other functional areas while attending and dealing with stabilizing digital platform services. We now illustrate one technology management paradox for each digital platform starting with the underlying tension, we then explain the root causes of such tensions, followed by the various management approaches employed by the case firms, and we conclude with highlighting some of the business outcomes.

***Technology management tension in the BPM Platform.*** *Platform growth* (consumption and expansion) becomes a blessing and a curse because on one hand, the customer can drive business value to their constituents; however, on the other hand, *platform stability* – including quality of the digital platform – slows down the adoption and platform consumption and adds a high degree of friction between the digital platform, customer, system integrators, and other third-party firms. For instance, the BPM Platform's interoperability limitations or an unstable platform discourage customers and system integrators because these technological bottlenecks increase the scope of work of software development, jeopardizes project timelines, and adds a considerable degree of project complexity due to the required software code customizations and/or workarounds

to meet the needs of the customer. Informants explained and articulated platform expansion and platform stability as intertwined. *Platform growth* stresses the need to meet business objectives key results which lead to higher platform consumption, whereas *platform stability* denotes platform availability, confidence, resiliency, and flexibility. Therefore, platform growth is positive and the primary objective of the digital platform. Platform stability is positive for the customer and their primary objective as it assumes zero impact and downtime to their customers and end user communities. There is a cooperative element since the customer has a competing BPM Platform within their portfolio of solutions. Should the BPM Platform owner fail to stabilize the platform, the customer may well go with a competing platform or a different provider altogether. A Firm D-Enterprise Services Provider's (customer) executive highlighted the business risk and the tension between platform expansion and stability: "*we need all eyes on glass because we're running out of runway.*" At the same time, the BPM Platform owner agrees to cooperate with the customer knowing that they may compete at some later stage. Firms in an alliance cooperate in the early stages of the relationship knowing that they may compete at some point, yet they are willing to invest time and effort in anticipation of mutual benefits and outcomes (Park & Ungson, 2001).

***Platform growth.*** Platform growth was described in terms of platform usage and consumption across other functional areas and groups with the customer. The quality of the platform and partner's expertise can also set the tone and foundation for platform adoption. Quality and experience are important ingredients for platform adoption thereby enhancing value creation. From a customer's point of view, they expect that the digital platform provider and professional services firms bring on the top talent to the projects, industry and technical experience, and high-quality delivery. The customer's value drivers are to improve operational and customer-facing business processes and fuel digital business innovation. A Firm D-Enterprise Services Provider's

technical program manager explained the motivation to expand: *“we're seeking to expand into supporting other teams as well now that we do have time and now that we have more time and resources [customer].* Similarly, a customer engineering manager highlights their goals to improve processes and workstreams outside of their business functional area: *“We are trying to improve our cycle time even more outside of just our organization and our team there are many work streams upstream that we're trying to improve as well and have using automation as you know part of our native structure...we're trying to implement that for them as well.”* [Firm D-Enterprise Services Provider, Engineering Manager, Customer].

Exploiting joint complementary resources and capabilities drives or, at least, speeds platform adoption and expansion. These capabilities have significant value and are the result of joint investments that have been made between the BPM Platform and the customer. The customer, in this case, is a large cloud computing provider. A senior program manager and an operations manager highlight the value of BPM Platform integrations and their cloud platform such that together, their joint complementary capabilities facilitate platform adoption and scalability regardless of the daily ticket volume and transactions: *“The other thing is that we have the other integrations built, the long-term business as usual cost will also go down. We don't need someone to repeat the same tasks in two different locations. You don't need someone who can pull in information like process it into it, because everything can be done using the cloud. So, I think that's where you come up with advantages, you can easily quantify this depending on the ticket volume and what you're doing”* [Firm D-Enterprise Services Provider, Senior Program Manager, Customer].

Informants described scalability of the platform and quantifying the value generated from the joint solutions as important factors that support and enable platform adoption. The BPM

Platform grapples with the need to drive business value while managing the platform stability. Whereas customers stress efficiencies and measurable value, resulting in a paradox of adoption-stability: *“These are easily quantifiable numbers and more importantly, the solutions scale up. If you go from a thousand tickets to a thousand instances to ten thousand instances, it scales up because it's running on a robust cloud platform, it's running on a robust [BPM] Platform. So that's the other value-add creation that you can think about. [Firm D-Enterprise Services Provider, Operations Manager, Customer]*

From the BPM Platform point of view, their motivation is not only to increase platform adoption but also to ensure that the customers are running their operations on the latest platform version because it will naturally be more secure and stable. A marketing director explicates, *“You're always secure. You're always getting the latest bug fixes for better performance. And all of those things minimize your downtime and maximize your ability to focus on adapting features that will drive your business” [Marketing Director, BPM Platform].*

**Platform stability.** On the other hand, *platform stability* to customers was stressed because of the high-risk business operations that were in jeopardy if and when there were platform stability incidents that could result in any operational downtime. An unstable and complex platform seemed to signify the core blocker for future expansion and platform adoption. This ‘tug-of-war and push-and-pull’ between the platform, integration services firm (system integrator), and the customer stems from dealing with ongoing technical issues and challenges which leads to some frustration and platform deployments with poor confidence. An architect shares the pains from dealing with an unstable environment and complex customer ecosystem: *“So, yeah, I mean, any time I'm thinking about any integration where I think it's simple, we end up spending six months. I mean, to me, it should have been very easy ... but nothing is very clear once we were inside their network.”*

*[Firm F-BPM Integration Services Firm, Lead Systems Architect]*. Oliver (1991) posits that organizations that challenge institutional pressures go on the offensive in defiance of these pressures (p. 156). In addition to dealing with technical integration and platform challenges, the system integrator needs to deal with the integration between the BPM Platform and the customer's own cloud computing environment.

When technical blockers arise, the finger is almost always pointed at the digital platform, in this case, the BPM Platform. Our data exposed far more technical challenges with the BPM Platform. Therefore, part of the bargaining process, however, the BPM Platform may defy and challenge the customer by highlighting that they are too to blame for some technical challenges and blockers. Though due to the trust that has been built over the years between the BPM Platform and the customer, the BPM Platform has the freedom to push back to the customer, as described by an account executive:

*Well, the way not to do that with [Customer] is to have everything lined up like, hey, here's what really happened in the upgrade, and, by the way, it really was four weeks where we stopped the other work and we did the upgrade but four weeks isn't a year. [Firm E-BPM Platform, Account Executive].*

An unstable BPM Platform environment slows user adoption but, most importantly, leads to significant business risks and challenges that effect user experience for the customer and revenue-generating opportunities for the BPM Platform because the system performance impacts customer-facing services. As one Senior Product Manager noted, *"We need to get unblocked or rethink this a little bit, so as I've gotten into the testing of the application, the customer service side, run into a number of issues that are preventing us from moving forward. One is just the overall performance is very, very bad compared to the existing environment. [Senior Product Manager, Customer]*. However, dealing with these environment and performance issues reduces the level of confidence on current and future deployments of new functionality, which results in

slowing down the BPM Platform adoption or put it completely on hold. A VP of Operations reiterated, “*And this is going to create complications for us and impact our ability to start to execute, if we continue to run into these challenges*” [VP Operations, Customer]. A major risk for the BPM Platform is software churn or attrition, which is a probability that the customer will cancel their BPM Platform subscription, leading to recurring revenue loss for the BPM Platform provider. Churn is conceptualized as an information system (IS) replacement: “premature termination of the use of the current SaaS system and replacement of it with an alternative” (Xiao et al., 2020, p. 1812). The other risk for the BPM Platform owner is that the customer may well directly compete against the BPM Platform owner with the customer’s own internal competing BPM Platform solutions or pursuing a competitor solution.

**Management Approaches.** To manage the paradox of technology management, the firms employed multiple tactics, such as blending, bargaining, buffering, and pacifying. *Blending* refers to as “finding blended solutions that convince the organization that a given set of two demands is only seemingly paradoxical and is in fact harmoniously combinable” (Gregory et al., 2015, p. 76). A blending strategy seemed to stress exploiting existing cloud platform and BPM Platform capabilities and highlighting key wins and success stories, while exploring options to mitigate ongoing technical barriers, particularly with the BPM Platform. A Firm D-Enterprise Services Provider’s program manager noted the successes that they’ve been able to achieve and value that they’ve generated for the business, “*Our success within this application has definitely been celebrated within our team but also a number of other teams have reached out to us seeing that you know we took what used to be a very manual and toils and process that was taking up a bunch of our teammates team and now freeing them up for other opportunities*” [Program Engineering Manager, Customer].

Bargaining and buffering tactics were also employed by the BPM Platform to deal with the paradox of technology management. Oliver (1991) suggests that bargaining is an active form of compromise than pacifying. *Bargaining* tactics “involve the effort of the organization to exact some concessions from an external constituent in its demands or expectations” (Oliver, 1991, p. 154). Oliver (1991) suggests that bargaining is a negotiation tactic, for example, “an organization may negotiate with a government agency to reduce the frequency or scope of its compliance with a newly instituted government policy” (p. 154). For instance, the BPM Platform owner aims to negotiate an agreement with the customer and system integrator to continue with the platform adoption efforts while allocating resources and financial investments to address the platform stability challenges: “*What if we did this in the CoE [center of excellence] and we staff two [BPM Platform] people or one [BPM Platform] or one additional [System Integrator] and we used [Program] funds. I want to find the right way to use them because it adds people without adding cost. I've been on projects where [BPM Platform's] done design reviews that were only for the partner to help the partner get stronger in front of the customer and not ever even shared with the with the customer. But to give some skill and other relief to the team on the ground, we're not blocking your current billing hours.*” *Account Executive, BPM Platform*). Further, managing the tradeoffs and developing a joint proposal for the customer requires the system integrator firm and the BPM Platform to be aligned and in agreement: “[*BPM Platform*] right now has got some limitations on the reporting, however, on [*the latest version*], we believe that we can meet 70 plus percent of your requirements. So, our proposal is give us your [*Customer*] green light to install the [*latest BPM Platform version*]” [*Customer Success Manager, BPM Platform*].

*Buffering* “refers to an organization's attempt to reduce the extent to which it is externally inspected, scrutinized, or evaluated by partially detaching or decoupling its technical activities

from external contact” (Oliver, 1991, p. 155). The BPM Platform stance in dealing with the instability of the platform is to continue to push the customer to maintain the BPM Platform’s current version in order to exploit the latest features and functionality that the platform provides and improve overall performance. As explained by a BPM Platform customer success manager, his stance on why the customer needs to/should upgrade and deploy the latest features, *“I strongly believe that they have to. I think the fact that the new bells and whistles on the reporting and dashboarding, out of the box, and the new kind of look and feel, I think that might also increase the level of adoption. And that’s one of the big drivers that [customer] has on its plate. So, I think that is one compelling case to really consider the upgrade” [Customer Success Manager, BPM Platform].*

Lastly, a pacify tactic seemed to play a role in support of the paradox of technology management as well as to appease or placate the customer’s resistance. *Pacify* tactic refers to “partial conformity with the expectations of one or more constituents” (Oliver, 1991, pp. 153–154). Further, organizations that employ pacifying tactics “typically mounts a minor level of resistance to institutional pressures but devotes most of its energies to appeasing or placating the institutional source or sources it has resisted” (Oliver, 1991, p. 154). Placating and accommodating the situation through executive-level escalations and specialized investments were employed by the BPM Platform to balance the technology management paradox, which enabled the expansion projects to progress forward. A Firm E’s services director explained, *“I’m working with the team on this as well. And we are escalating this. So, it is getting a lot more visibility. Give us a little bit of time to get some internal meetings when we get the right people online and let us see what we can do here” [Professional Services Director, BPM Platform].* In addition to escalating to executive levels, at the project level there is a need for both the BPM Platform and system integrator to bargain with

the customer and come up with a blended approach, recognizing that there are tradeoffs, and the customer may not get the desired business requirements: *“We may not get there 100 percent, we know we will not get there 100 percent. But if we can get 70, 75 percent there and then come up with a recommendation on how that percentage could be better, they'll be happy with it. They're open to that. But us throwing [BPM Platform] and putting up our hands and saying we can't do that at all, that's what the problems are going to come in.”* [Lead Business Architect, System Integrator]. To further placate the tension, BPM Platform also invested in dedicated teams – at no cost to the customer – to help the customer with the BPM Platform application modernization planning, as explained by a director in marketing, *“The [application readiness assessment] data behind it and what the outcome is, is we provide a roadmap for the recommended path to get current. We do that engagement free of charge. [Director Marketing, BPM Platform].* The customer perceived the sense of urgency and strong partnership from the BPM Platform as positive: *“You know, we've had other experiences where we were the ones driving the conversation, explaining what we wanted, what we're going for. And, you know, [BPM Platform] came to the table and really did a good job driving us to where we are.”* [Senior Product Manager, Customer]. These tactics seemed to imply temporal stability of the BPM Platform-customer relationship; however, the paradox of technology management persists.

**Outcomes.** While the customer ended up accomplishing the desired goals and outcomes, it was not an easy feat for the BPM Platform owner. There was a tone of defiant strategy on behalf of the BPM Platform, challenging the customer's perception of the BPM Platform's performance and stability. As Oliver (1991) cited, “Organizations will be more prone to challenge or contest the rationalized norms or collective rules of the institutional environment when the challenge can be reinforced by demonstrations of organizational probity or rationality” (p. 156). A Firm E's services

director explained the frustration in a challenging tone: *“We tried to upgrade for over a year, it didn't happen, even though there were a lot of issues on the [Customer] side, we don't have the [Customer] cloud experts, and we don't have that skill set we learned as you go along. But it just has to be characterized properly, and at that point, then [Customer] can't argue. He just can't argue, because it's there on paper, here's how the time flowed”* [Firm E-BPM Platform, Services Director].

The feedback from a select group of end users highlighted the value received from the BPM Platform resulted in stronger platform adoption, as described by a loyalty manager, *“We've heard overwhelmingly positive feedback and the adoption has been remarkably high. I think I thought we set very high goals from the start of 80 percent as an open rate goal and our PoC reached that within weeks. And that group has remained above 80 percent every week since June. And so I think that speaks to how much they believe in it.”* [Senior Loyalty Manager, Customer]. These success stories highlighted by the customer help ease and often remove the tensions because some customers across some functional areas are realizing and generating business value from the BPM Platform.

However, despite these success stories and incentives thrown at the customer to foster adoption, there is a flavor of customer's resistance and low confidence in the BPM Platform. Additionally, a high-level executive on the customer questioned the business value from the last BPM Platform upgrade. Therefore, to mitigate this tension, the BPM Platform and system integrator need to present blended and viable options to the customer. As described by the Services Director, *“I just want to present to them the best way forward and not get a verbal whiplash, right? They could say, no, no. I just don't want to get a verbal whiplash from [Customer], right?”* [Services Director, BPM Platform]. The system integrator iterated, *“It is, right, the problem with [Customer]*

is, 'I didn't see a value come out of [BPM Platform]', and I think in their eyes, value means adoption. [Program Manager, System Integrator].

We now illustrate the underlying tension and paradox of technology management for the second case, as well as their management approaches.

**Technology management tension in the Cloud Platform Provider.** In the Cloud Platform Provider, we encountered paradoxical tension more evident in platform adoption given the cooperative nature of the relationship between the Cloud Platform Provider and customer. Although, the customer was willing to cooperate and collaborate with the Cloud platform as long as they continue to achieve their mutual business objectives. Platform stability was less of a challenge for the Cloud Platform Provider, although the customer still maintained a close pulse on the cloud computing services, their infrastructure stability, quality and expertise, and costs.

**Platform growth.** Our findings suggest that case informants viewed platform growth as a natural workflow given the benefits of running services on the Cloud. However, platform growth will grow over time as long as the customer continues to benefit from and exploit the high caliber of expertise and quality from the cloud provider and professional services firms. Efficiency, cost containment, and continuous improvement appeared to be a primary tenet: *"If we have continuous support in quality services group from the vendor, we can keep this going. So, I think is a very essential one; you have a really good relationship and then your service provider or team really knows about your security needs. And then at the same time they dispatched the right people in then to help address your problem. And then we build, co-create this together and then we help the broader environment and people who is using it. And then at the same time come back more and they improve. So, the actual process, it's like, it's no stop, right? You just keep doing it until there's*

*no perfection because you just got to do it better and better” [Firm A-Product Owner, Program Manager for Architecture & Security Technologies].*

Interviews suggested tangible and intangible benefits and incentives to customers, which include dedicated learning and enablement. The cloud provider and system integrator constantly enlighten the customer with various types of trainings, workshops, informing the customer what are the latest product features and cloud services coming out of the cloud platform. In many cases, the cloud provider offers free credits and discounts for customers to access cloud platform services for free, which are incentives and techniques to build and earn customer’s trust, but also to promote higher cloud platform services growth. The incentives are offered to speed platform growth and to help customers achieve their business objectives, while at the same time, the cloud provider is looking for a financial return and increasing the long-term value of the lifetime value with their customers: *“I mean if we have a partnership and then we have an agreement in place or supposed to receive some sort of discounts is that's always an incentive for our finance to have a partner like that.” [Program Manager for Architecture & Security Technologies, Customer].*

**Platform stability.** In contrast to platform adoption, *platform stability* involves avoiding severe platform instability or data security and privacy issues, as well as delivering positive customer experiences. For instance, systems downtime refers to systems or services that are unavailable to customers and end users, which result in loss of productivity or revenue if those application(s) are mission-critical and revenue-generating services. The customer is also aware of the cooperative relationship between the two firms. The customer understands that the Cloud Platform Provider is incentivized to do the right thing for the customer and continue to grow their global brand and market leadership in the cloud space. And, at the same time, the customer is encouraged by the cloud provider’s robust technology infrastructure (stability), corporate values,

and their obsession in customer-centricity. These corporate values on behalf of the cloud provider become key ingredients for platform stability objectives. A Firm C-Professional Services Firm's solution architect describes the tension of platform expansion and the technology infrastructure stability, "*So, we want to, when we work with the customers, we want to make sure that what they implement is scalable but addresses, first of all, it addresses their needs. It's scalable, it's highly available. They have DR strategy so they can recover, but they also are implementing it according to the best practices, right, so there's no, for example security implications*" [Solution Architect, Professional Services].

**Management Approaches.** To manage the paradox of technology management, the firms employed *influencing* and *buffering* tactics to deal with platform growth-stability tensions. Seeking platform stability and platform growth are different matters, the latter demanding skillful tactics given the cooperative relationship between firms. The Cloud Platform Provider and customer are willing to sustain the cooperative relationship because of the mutual value that is generated from their cooperation and collaboration. Existing studies posit that cooperation can provide a "crucial foundation for steady cooperation to complement each entity's goals" (D. Yoo et al., 2020, p. 5765).

*Influencing* tactics, according to Oliver (1991) is a form or part of a manipulation strategy. Further, Oliver (1991) suggests that "manipulation of belief systems is reflected, for example, in the efforts of a trade association to influence public perceptions of its industry and to lobby government regulators for changes in the institutional rules to which its members are advised or required to conform" (p. 158). Finding blended solutions for the customer is an ongoing concern for the Cloud platform and different types of incentives are offered to customers to facilitate their platform growth and masking any platform stability challenges: "*So that's one way to look at it, the other way is we may provide credit to our partners and that helps them reduce the cost to our*

*customers for these types of engagement... these types of engagement can last months, even years. So, we can help our customers get what they need by reducing the cost for them to our partner and the value that we get is that you know obviously we don't think of the short term you know hundred thousand and two thousand million dollars here and there with our customer we think of the long-term value of the lifetime value with our customer...*” [Senior Technical Program Manager, Cloud Provider]. Specialized investments are part of the influencing tactics and a way to impact the paradox of technology management. The Cloud Platform Provider offers free credits for training and additional financial and platform economics knowledge to customers to strengthen the customer’s financial business case (to migrate to the cloud or to build applications on the BPM Platform); accelerate the migration process and speed up the customer’s employees learning curve. A Firm B-Cloud Platform Provider’s technical program manager highlights the cloud credits to speed the project and reduce overall implementation costs, *“And then similarly you know what we've come to find is there are certain things that will help accelerate the engagement. For example, we're giving our partners credit that will help them build a better business case in order to support our customers. So, we find different ways that we reduce the cost to them by providing credits for training. We brought training we helped them accelerate from a knowledge perspective. We helped them create a path for migration.”* [Senior Technical Program Manager, Cloud Provider].

*Buffering* on the other hand “refers to an organization's attempt to reduce the extent to which it is externally inspected, scrutinized, or evaluated by partially detaching or decoupling its technical activities from external contact” (Oliver, 1991, p. 155). Cocreating IT-based digital assets between digital platforms and partners results in different complexities around asset integration and interoperability challenges. Therefore, the digital platforms, in this case the cloud provider, needs to orchestrate the flow of assets and IP with the participating firms and other third

parties, as described by a sales and business development manager, “*So, it is [Cloud Provider] when they talk to the partner, it is the responsibility to talk about how these interoperate. And there is a whole deal of IP that we share with third parties to be able to make that happen*” [ISV Sales and Business Development Manager; Cloud Provider]. Robust integration and interoperability fosters platform growth. Integration flaws or poor interoperability would result in unstable environments and poor performance, which slows down platform growth.

**Outcomes.** The management approaches when dealing with the technology management paradox result in an increase of platform growth and usage by influencing and blending solutions catered to different key stakeholders. For instance, there are incentives for the cloud platform provider to promote and expand their innovation on their platform by inviting third-party developers and customers to build solutions on their infrastructure. Expanding the cloud provider’s partner community enhances the value of the cloud provider and strengthens its platform ecosystem. However, the cloud provider offers its services in a modular way, providing several choices to its customers and partners, making it easy for them to build and to innovate on the cloud and with a high degree of freedom in terms of architectural choices and plug and play. A Firm B-Cloud Platform Provider’s Sales and Business Development manager quotes the concept of the *flywheel*: “*But also we're providing choice, in the case of [Cloud Provider...we're all about customer choice. So, providing choices is something that I don't know if you're familiar with the concept of the flywheel effect that [Cloud Provider's Founder] kind of coined back in the day saying, if a platform offers more choice to the buyers, then he's going to attract more buyers*” [Firm B-Cloud Platform Provider – Independent Software Vendor (ISV) Sales and Business Development]. So having more choices is a key value of working with the cloud provider’s

expanded ecosystem which facilitates the customers to adopt and expand the usage of cloud services.

***Cross-case analysis: Summing up the paradox of technology management.***

The above analysis outlined the paradox of technology management and described the and offered characteristics of the platform growth-stability tension. Naturally, as customers generate value from the platform and IT value cocreation, the digital platform providers will realize higher ***platform growth*** (consumption and usage). While ***platform stability*** challenges often slow down or bottlenecks platform growth. As Hannah and Eisenhardt (2018) describe, ecosystems have bottlenecks. They refer to bottlenecks as components that constrain the overall growth or performance of the ecosystem due to poor quality, weak performance, or scarcity” (Hannah & Eisenhardt, 2018, p. 3164). As illustrated in Table 4, the BPM Platform adopted and employed more complex tactics to balance the tension (platform growth-platform stability) due to the degree of their ongoing platform performance challenges. For example, they adopted blending and bargaining tactics to find synergies on multiple paradoxical demands from the customer (to improve platform performance and upgrade the platform to a new version with zero impacts to the customer’s operations). The BPM Platform bargained and negotiated by adding more technical resources to the projects. Two other tactics employed by the BPM Platform were buffering and pacifying as the customer temperament and frustration grew over time due to the ongoing technical difficulties and blockers experienced with the BPM Platform. Buffering as a tactic was employed by both digital platforms; however, the BPM Platform focused on disguising the platform’s limitations, while the Cloud Platform Provider focused on flooding their account team with diverse set of resources and subject matter experts. Additionally, the Cloud Platform Provider influenced

decision-makers – as a manipulation tactic – by offering incentives and free cloud platform credits to offset the costs of the cloud migration.

We now examine how tensions also appeared in different projects between participating firms, posing a paradox of information sharing.

Table 4: *Technology management tension: Cross-case analysis.*

Digital Platform	Tension	Examples from interviews	Management approaches
BPM Platform	<b>Platform growth</b> was described as platform usage and consumption across other functional areas and groups with the customer; at the same time, it stresses the need to meet business objectives key results which lead to higher platform consumption.	<p><i>“we’re seeking to expand into supporting other teams as well now that we do have time and now that we have more time and resources [customer].”</i></p> <p><i>“These are easily quantifiable numbers and more importantly, the solutions scale up.”</i></p>	<b>Blending</b> refers to finding blended solutions and that given set of two demands seemingly paradoxical are in harmoniously combinable (e.g., platform growth while dealing with stability challenges). <i>“Our success within this application has definitely been celebrated within our team but also a number of other teams have reached out to us”</i>
	<b>Platform stability</b> – including quality of the digital platform – slows down the adoption and platform consumption and adds a high degree of friction between the digital platform, customer, system integrators, and other third-party firms.	<p><i>“...This is getting critical to the point where we’re looking at all these things...we’re putting work items in jeopardy...we don’t have an environment upgraded, it limits our ability to do some work things that our Marketing teams is asking us for.”</i></p> <p><i>“We need all eyes on glass because we’re running out of runway.”</i></p> <p><i>“We need to get unblocked or rethink this a little bit...”</i></p>	<p><b>Bargaining</b> is a negotiation tactic used by the BPM Platform which was to bargain with the customer to continue with the project and in return, add additional resources to the CoE. <i>“What if we did this in the CoE [center of excellence] and we staff two [BPM Platform] people or one [BPM Platform] or one additional [System Integrator] and we used [Program] funds.”</i></p> <p><b>Buffering</b> is an attempt to reduce the extent to which the digital platform is inspected, scrutinized, or evaluated. <i>“I strongly believe that they have to [Upgrade]...I think the fact that the new bells and whistles on the reporting and dashboarding, out of the box, and the new kind of look and feel...that might also increase the level of adoption...I think</i></p>

*that is one compelling case to really consider the upgrade”*

**Pacifying** is about achieving partial conformity with the expectations of one or more constituents. The goal of the BPM Platform is to placate and accommodate the tension through escalations. *“I’m working with the team on this as well. And we are escalating this. So, it is getting a lot more visibility. Give us a little bit of time to get some internal meetings when we get the right people online and let us see what we can do here.”*

<b>Cloud Platform Provider</b>	The customer viewed cloud <b>platform growth</b> as a natural workflow given the benefits of running services on the Cloud Platform’s infrastructure. However, platform growth will grow over time as long as the customer receives incentives, exploits the expertise and quality from the Cloud Platform Provider and Professional Services firms.	<i>“If we have continuous support in quality services group from the vendor, we can keep this going.”</i>	<b>Influencing</b> tactics refers to manipulation; in this case the Cloud Platform uses this tactic to influence the customer’s perceptions by providing incentives and platform credits to reduce costs to the customer. <i>“The other way is we may provide credit to our partners and that helps them reduce the cost to our customers ...we can help our customers get what they need by reducing the cost for them...we don't think of the short term...we think of the long-term value of the lifetime value with our customer...”</i>
	<b>Platform stability</b> involves avoiding severe platform instability or data security and privacy issues, as well as delivering positive customer experiences. Platform stability was less of a challenge for the Cloud Platform Provider, although the customer still maintained a close pulse on the cloud computing services, their infrastructure stability, quality and expertise, and costs.	<i>“I mean if we have a partnership and then we have an agreement in place or supposed to receive some sort of discounts is that's always an incentive for our finance to have a partner like that.”</i>  <i>“When we work with the customers, we want to make sure that what they implement is scalable but addresses, first of all, it addresses their needs. It's scalable, it's highly available.”</i>	<b>Buffering</b> tactics refers to the Cloud Platform’s attempt to reduce the extent to which they are inspected, scrutinized, or evaluated. In this case, the Cloud Platform’s goal is to reduce the scrutiny in some of their limitations around integrations and interoperability with other partner’s third-party solutions and shifting the blame and burden to its partners. <i>“So, it is [Cloud Provider] when they talk to the partner, it is the responsibility to talk about how these interoperate. And there is</i>

*a whole deal of IP that we share with third parties to be able to make that happen”*

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### 7.4.3 Paradox of Information Sharing: Closed-door (Novelty) and Transparency (Efficiency)

*No, that's not an answer. It's not his code. It's our code. That's [Customer] code. He gives it to us. I don't care. So that is the direction. I will talk to [Code Owner]. We will get the code. There's ownership here. Anything I build here is [Customer] owned. So that reaction is not right. So, we'll talk. [Firm D-Enterprise Services Provider, Technical Project Manager, Customer].*

This quote exemplifies the information sharing paradox as tensions emanated from a ‘tug-of-war-like’ dilemma around information sharing between customers, partners, and the BPM Platform; specifically, the degree of information sharing for *closed door-secrecy* (novelty) and *open-transparency* (efficiency) initiatives. Our cases highlight *novelty* and *efficiency* value drivers to paradox management. Amit and Zott (2001) introduced key value creation mechanisms: novelty and efficiency. *Novelty* refers to “tapping of new markets have been the traditional sources of value creation through innovations” (p. 508). *Efficiency* is about streamlining transactions and improving the coordination of activities. Further, “transaction efficiency increases when the costs per transaction decrease...” and that the greater the transaction efficiency the lower the costs and the more valuable it will be (p. 503). We now describe one *information sharing* paradox scenario for each case where we cover the underlying tension, briefly explain the nuances that causes the information sharing paradoxical tensions, followed by the various management approaches employed by the case firms, and we conclude with outlining some of the business outcomes.

*Information sharing tension in the BPM Platform.* Our findings suggest that informants (Firm D-Enterprise Services Provider-Customer, Firm E-BPM Platform, Firm F-BPM Integration Services Firm) viewed efficiency and novelty (Amit and Zott, 2001) as paradoxical. Informants

articulated novelty (close-secrecy) and efficiency (open-transparent) as intertwined. In their view, *novelty* (to capture revenue and market share) and *efficiency* (improve internal operational efficiencies) demand certain levels of knowledge sharing, collaboration, and cooperation between customers, partners, and competitors. As Hannah and Eisenhardt (2018) posit, firms in ecosystems balance cooperation to create value and competition to capture value (p. 3164). Informants described information sharing as interdependent in network-based, IT value cocreation projects. More specifically, information sharing seems to be dependent on value and purpose, the uniqueness and competitive advantage of intellectual property. The level of information sharing in a cooperative environment can take different forms and depend on informal or formal safeguards between firms. The degree of transparency and level of information sharing is dependent on what the customer is looking to achieve. If the business use case is to build a commercial, revenue-generating product or service where new intellectual property is being created, then there will be less information sharing and transparency from the customer. On the other hand, if the use case is an internal endeavor or a service for their internal customers, the customer is more receptive to share and collaborate.

**Novelty.** Novelty as a value creation was described as capturing knowledge and sharing knowledge to cocreate joint digital solutions with the purpose of mutually generating revenue and expanding market share. In certain circumstances, information sharing is often kept on a *need-to-know-basis* or *masking* certain information. As a Firm D-Enterprise Services Provider's director stressed, some knowledge sharing is kept on a need-to-know basis and, ultimately, it comes down to trust between the customer and its partner(s): "*Keep things at a need-to-know basis, things that are very confidential. For instance, let's say [Customer] is expanding its services to 20 more countries, and it comes to [Cloud Provider] and says, hey, I need 20 more servers in these countries.*

*It's very easy to put one and one together and find out what exactly what we're up to. And it might give [Competitor] some sort of competitive advantage. So, keeping things on a need-to-know basis or masking when it's probably important...and the one that's probably the most important thing, is just Trust. Build a strong relationship with your point of contact, make sure that you're trustworthy and make sure you both follow proper business ethics. It has to go both ways for things to work. [Firm D-Enterprise Services Provider, Director Operations, Customer].*

Masking and keeping things on a need-to-know basis is an effective approach when there are strategic alliances underway between firms. A joint selling, go-to-market strategy between the customer and the BPM Platform (Firm E) is in the early stages of formalizing the alliance, therefore, information sharing is limited given the commercial aspects of the alliance between the two firms. For instance, A VP of strategy explicates, *“You know, I would love to know or have someone summarize what was actually said, because I got this fear that we're not saying the right stuff based on some data points this week” [VP Strategy, BPM Platform].* A sales senior director expresses a similar view in that there are knowledge gaps between the BPM Platform and system integrator teams, specifically at the leadership team level, *“I'm still not confident that we're positioning or presenting this big idea the right way. So, it would be nice to be able to triangulate what was said and how it was said” [Senior Director, Sales, BPM Platform].* Their mutual goal is to build revenue-generating solutions which entails cocreating intellectual property that is highly competitive in the marketplace developing customer-facing solutions on the BPM Platform which runs on the customer's cloud infrastructure. However, the nuances and details behind the alliance are not shared and there is a fragranciness of *close-secrecy*. A senior director explains, *“We do have interest and sponsorship from the [BPM Platform] leadership side, from Sales and from Industry Market Marketing Leadership to pursue some joint opportunities” [Senior Director, BPM*

*Platform*]. The sales and market strategy teams are pragmatic and careful on how much they share in the early stages of the joint go-to-market strategy. A sales director shares the idea of both organizations (customer and BPM Platform) joining forces and co-selling digital solutions, “So *[BPM Platform industry solution]*, as basically a package slice running on *[Customer] cloud platform that we could jointly sell together, with our [Customer] cloud counterpart. [Firm E, Senior Director, BPM Platform]*.”

**Efficiency.** In contrast to novelty, an *efficiency* emphasis entails lower risk in terms of intellectual property to the customer and digital platform providers. Similarly, informants stressed how information sharing – including sharing complete digital solutions – promotes new market opportunities for all parties – customers, BPM Platform provider, and system integrator. A technical program manager explained, “*There's nothing intellectual about it, but let's say [potential customer] wants to move to [Customer], you can just give them the actual application and show what has been done. Give them access to the people who have helped developed...like product owners on the [Customer] side, Business analysts on [System Integrator] side, and even some of the [BPM Platform] folks who helped. You give access to these people so that you understand that use cases and see whether you can tailor whatever you have built for them. [Firm D-Enterprise Services Provider, Technical Program Manager, Customer]*”

Information sharing is also about making it easier (efficient) for customers to consume the BPM Platform and other joint solutions that are codeveloped between the BPM Platform and customer. A Firm E’s technical program manager explains their level of information sharing at the project level (more tactical) and not necessarily at an organization and enterprise-wide level, “*Like the knowledge sharing that we have is, we share everything that the project needs to work successfully, basically things like if [BPM Platform] has to be installed on [Customer's cloud*

*platform]. We need to share how [Customer's cloud platform] works, how we can have a successful install and how things basically work. And these are all non-proprietary information” [Firm E, Technical Program Manager, Customer].*

However, information sharing for solutions that have some level of sensitive intellectual property and are in the early stages of development, the parties involved are more careful as to what and how much sharing is done. For instance, the customer was in the process of building a proof of concept to prove the value of the BPM Platform and to convince the customer's high-level leadership to move forward with a business process automation initiative enabled by the BPM Platform's capabilities. This expansion assumes deprecating several siloed applications causing discomfort to a large user community, which leads to information sharing and collaboration challenges. For the proof of concept to become a reality, the customer needs to reuse code and key functionality from a similar solution; also, to avoid recreating the wheel and speed their development. However, a separate team which is made up of third-party consultants, are resisting sharing the code. A software engineer explains, *“if you can change [Application] code to point to our [BPM Platform] instances or share whatever Python code he has written, but from what I understand, I don't think he is comfortable to share that code” [Firm D-Enterprise Services Provider, Software Developer, Customer].* A system integrator consultant experienced a similar challenge of other customer team members, including contractors, not being open to sharing and collaborating with the BPM Platform and system integrator, *“the main thing is to reuse their code for our stuff without spending much and reinventing it. But it looks like they're not OK in sharing the code and they don't have a design document that we can use here” [Firm F-BPM Integration Services Firm, Application Architect, System Integrator].*

**Management Approaches.** To manage the paradox of information sharing, masking, complying, and pacifying (Oliver 1991) tactics are employed to cope with the efficiency and novelty paradox (open-transparent vs close-secrecy). We identified one variation of resolving paradoxical tensions, which we refer to as *masking*. *Masking* refers to the ability for firms to share information on a need-to-know-basis to avoid spillover of sensitive partner alliances information and intellectual property. Comply refers to as “conscious obedience to or incorporation of values, norms, or institutional requirements” (Oliver, 1991, p. 152). In the case of the joint solution and go-to-market strategy between the BPM Platform and customer (cloud computing platform), the BPM Platform manages these critical and sensitive efforts and conflicting demands by complying to the customer’s institutional norms (e.g., secrecy, *‘keeping things on a need-to-know-basis’*). The messaging and terms for the go-to-market strategy need to be clear and mutually agreed upon between the executives from both parties. However, the BPM Platform consciously and strategically chooses to comply with the customer’s institutional pressures to achieve their desired goals.

Further, an “organization may comply with external pressures because the approbation of external constituents or society enhances its legitimacy, increases its stability...” (Oliver, 1991, p. 153). Therefore, a comply tactic is present to build and enhance legitimacy in the relationship. For context and in comparison, the customer (Firm D-Enterprise Services Provider), who is considered a leading cloud computing provider, has a market cap of nearly \$2 Trillion, where the BPM Platform (Firm E) is \$8.5 Billion. The system integrator (Firm F-BPM Integration Services Firm) has a market cap of \$45 Billion. The BPM Platform’s structural position and legitimacy in the digital network ecosystem becomes important. Given the BPM Platform’s structural position, it is imperative that they lean towards an *open-transparency* information sharing model and comply to

the needs of multiple stakeholders and strategies. Paradox literature suggests that performing paradoxes stem from the multitude of actors and result in competing strategies, and tensions surface because of differing and conflicting demands (Smith & Lewis, 2011).

A pacify tactic seemed to play a role in support of the paradox of information sharing to appease the customer's resistance. *Pacify* tactic refers to "partial conformity with the expectations of one or more constituents" (Oliver, 1991, pp. 153–154). Further, organizations that employ pacifying tactics "typically mounts a minor level of resistance to institutional pressures, but devotes most of its energies to appeasing or placating the institutional source or sources it has resisted" (Oliver, 1991, p. 154). The BPM Platform employed a cross-functional team structure where there are executive and senior management stakeholders involved in shepherding the joint solutions and go to market efforts between the customer and BPM Platform. The BPM Platform hesitates and chooses to avoid adding pressure to the customer's executives and decision-makers to pacify the situation. *"I kind of hesitate to bring this up because this is only just happening last evening. But [BPM Platform's CEO] responded back to [Customer's Executive] last night and essentially said that [BPM Platform] is ready to move forward based on [Customer Executive's] prescribed path forward. [Director, Partner & Alliances, BPM Platform]."*

**Outcomes.** We find that resolving paradoxical tensions (novelty-efficiency) results in firms finding a common ground for sharing information. We found that establishing a degree of information sharing between firms enhances value creation (e.g., new innovations cocreated, new revenue-generating opportunities). The collaboration and information sharing between the customer (Firm D-Enterprise Services Provider) and the BPM Platform (Firm E), were more positive since it was a net new, novel innovation that was being carried out as a pilot/experiment program. A program engineering manager explains, *"I would be remiss to say I, my team, overall*

*had a ton of support from the [Customer] cloud team within my organization as well but there are a number of [System Integrator] business analysts and developers who definitely helped us out in the whole process. I wanted to call out [Architect, System Integrator] on my team, he has been fundamental and instrumental in making sure our program is up and running” [Firm D-Enterprise Services Provider, Program Engineering Manager, Customer]. Both efficiency and novelty type of activity require a degree of information sharing, collaboration, and cooperation between the customer, partner(s), and the BPM Platform provider. Management approaches in dealing with such tension differ depending on the project and business objectives. Though information sharing becomes more transparent at the product-level, meaning that participating firms are open to sharing documentation and best practices. A senior program manager explained the logic behind sharing commercially ready, packaged solutions that have been cocreated between the BPM Platform and the customer (who is a large cloud computing provider) with other customers, including competitors: “I’m assuming they have a very similar process, something that runs on [BPM Platform] and along with all the reporting and everything that we do on [Customer] can actually be packaged as a feature and given to them. We can share all the know-how and say, I know you guys are trying to do this on [BPM Platform], this is what [Customer] did. It just basically would give them all the documentation on what we did. So then that deployment becomes much quicker. [Firm D-Enterprise Services Provider, Senior Program Manager, Customer].*

On the other hand, case informants that have been cocreating digital solutions together have developed a mutual trust and are more willing to share their vision and business strategy, specifically, the BPM Platform’s product roadmap. Sharing product roadmap information to customers can have a negative effect if the BPM Platform’s timelines are impacted and fail to deliver its promises. But sharing this level of product roadmap information is a form of pacifying

and complying to earn the customer's trust and appease key decision-makers (those who are resistant to using the platform). A senior product manager shared their business vision with the BPM Platform, *"just wanted to provide additional examples of what we're looking at in terms of our roadmap and our vision longer term. Those types of examples and what we're going to pursue aggressively in the near term are things like voice translation to provide in-service recommendations to our front line"* [Senior Product Manager, Customer]. The intention is to turn this conceptual vision into reality, into a physical digital solution. The goal is to cocreate these novel innovations between the customer and BPM Platform to gain competitive advantage and differentiate themselves from the competition. A product manager explains some of the revenue-generating and joint innovations initiatives they have in their product roadmap, *"It's a great avenue for us to be able to surface some type of recommendation to get them to just stick around with us and extend that customer lifetime value. So just in terms of where we're going, utilizing and maximizing the technology that we have at our disposal through [BPM Platform] and our partners is really how we're going to get there"* [Marketing Product Manager, Customer]. The customer has confidence and trusts the BPM Platform and sees them as a partner to drive and enable their business vision and grow their revenue. A VP explains, *"I mean, you guys [BPM Platform] have been adding a lot of products. You know, how do you see this as continuing to grow that revenue stream for the organization and in making those customers more sticky."* [Firm D-Enterprise Services Provider, VP Product Development, Customer].

We now illustrate the underlying tension and paradox of information sharing for the second case, as well as their management approaches and outcomes.

*Information sharing tension in the Cloud Platform Provider.* Despite the cooperative relationship between the Cloud Provider Platform (Firm B) and the customer (Firm A-Product

Owner), information sharing is less transparent and carefully managed due to the sensitivity and privacy of information, such as unique intellectual property (“secret sauce”) or two firms joining forces and publicly announcing a strategic partnership alliance. On one hand, the Cloud platform provider is cocreating a security-based software-as-a-service (SaaS) solution with the customer; while on the other, the firms are balancing coopetitive relationships given their strategic partner alliances (e.g., joint selling, go-to-market strategies). The paradoxical link between novelty and efficiency, however, was clear in different claims that trust between firms enables and facilitates information sharing. Why and how much knowledge are shared between parties often depends on mutual trust. The combination of trust, relationship diversity and knowledge transfer are considered prominent cornerstones of well-functioning networks (Osarenkhoe, 2010; Thorgren et al., 2009). There are situations where the cloud provider absorbs and replicates the partner’s complementary resources and capabilities (Dyer et al., 2018). Further, the nature of the relationships could be either collaborative or opportunistic (Gulati et al., 2000).

*Novelty.* The customer (Firm A-Product Owner) partnered with the Cloud Provider Platform (Firm B) to cocreate an internal software SaaS product to serve the needs of the customer’s security and compliance policies. They had a successful journey and the value of collaboration and cocreation was mutually beneficial for both organizations. On one hand the customer built an innovative product on top of the cloud provider’s platform. And the cloud provider expanded their services at this customer around security, storage, compute, and other application services. Several months later, the cloud provider had built and launched a similar security software-as-a-service (SaaS) application that was built and designed for the customer. The cloud provider ended up commercializing and monetizing this product rather successfully in the market. This is an example where the cloud provider leveraged and absorbed the customer’s

product knowledge and subject matter expertise and then ended up replicating one of their customer's internal security products (SaaS application) which was not meant to be commercialized and monetized: *"I feel we did some fairly innovative work and I don't want to stretch it too far by saying maybe that's what even led to creation of some of the [Cloud Provider] services, like the security hub or the, you know there's a bunch of capabilities that came from [Cloud Provider] after all the work that we had done on [Customer's SaaS Product]. Right, very similar to that where you can set guard rails, you can measure compliance and all those types of things. So, it seems like to me in some ways that maybe other customers did the same type of stuff, which [Cloud Provider] ended up in some ways productizing as a service."* [Firm A-Product Owner, Senior Director of Information Security, Customer].

As described in the quote above, information sharing is dependent on what and how the Cloud Platform Provider is going to do with the digital solution that are cocreated with customers and partners. A Firm A-Product Owner's program manager and senior director explains the paradoxical link between the information sharing tensions, specifically with regards to sensitive intellectual property, *"I think again the amount of sharing goes into what value are you creating and what are you going to do with it? And clearly if there is the level of complexity and there is a level of intellectual property that's going into that you're going to make loads of money on at some point you're going to have a lot more hesitation in sharing."* Customers will hesitate to share sensitive intellectual property (novelty) due to potential opportunistic behaviors from the participating firms whether it is intentional or not, as described by a customer's senior director: *"I think there is a level of, is this value creation at a very sort of deep innovation that is very unique and a differentiator and you're going to monetize at some point. And if so, there is obviously less of sharing and more formality even if you were shared."* [Firm A-Product Owner, Senior Director

*of Information Security*]. However, sharing information such as programming code to operationalize and automate processes and workflows, as an example, is perceived as less risky, “Whereas if this is more about operationalizing a best practice that's already out there and yes, you're writing a piece of code to digitize it, it's not like you're creating a whole new intellectual property...you're still creating value by automating it, by codifying it that somebody is going to get tremendous value out of it. But you know, it's not necessarily all that unique and a special sauce that nobody else is going to figure it out on their own.” [Firm A-Product Owner, Program Manager for Architecture & Security Technologies, Customer].

Sharing information depends on the nature of the project, business outcomes and what is at stake for participating firms. Based on our findings, interviews suggest that customers are less likely to share technological knowledge and assets if there is a sensitive information and an innovative endeavor that has potential for monetization. A Firm A-Product Owner senior director explicated: “I think the level of sharing is basically based on, you know, how much innovative and how much of a monetization risk maybe they are if you were to share it” [Firm A-Product Owner, Senior Director of Information Security, Customer]. Only certain IP and digital assets cocreated between the cloud provider and its competitors are shared to the public, “Of course, there are some things that are shared internally that are not necessarily public” [ISV Sales and Business Development Manager, Cloud Provider]. In other circumstances, knowledge sharing becomes part of the IT value cocreation process such as exchanging software code or sharing software user experience best practices.

In contrast to project-level information sharing, the paradoxical link between these information sharing tensions (novelty and efficiency) offers a different perspective in cooperative environments and relationships. Our findings suggest that for situations where the Cloud Platform

Provider and customers are joining forces to co-market and co-sell together in the marketplace, information sharing is also managed with a high degree of discretion. Establishing information sharing tactics is important between participating firms, which allows the partners (and competitors) involved to have access into the Cloud platform provider's product roadmap and, in some cases, facilitate special arrangements in their (Cloud platform provider) annual user conferences. This arrangement requires careful cooperation and management between the cloud provider's Partner Manager and Account Managers. The Partner Manager from the cloud provider brokers and facilitates these interactions between the cloud provider and their partners, who are also direct competitors: *"It's something that you know, you get access to that as you become a more and more important customer. So, if [SaaS Data Warehouse Platform] wants to meet with a product manager, if they want to have a conversation about roadmap under NDA, what are the things we can discuss? What are the things we can disclose to them?" [Firm B- Cloud Platform Provider, Independent Software Vendor (ISV) Sales and Business Development]*. The cloud provider and direct competitors form trusting relationships and cocreate IT-based digital assets for revenue-generating purposes. The cloud provider orchestrates all of the information and intellectual property of the commercial asset and IP, and the level of usage and adoption across their customer base. The two competitors (partners), in this case, the Visualization Software and Cloud-based Data-warehousing vendors trust the cloud provider's goodwill and do not expect 'free-riding' and other opportunistic behavior. The cloud provider acts as the 'hub firm' or *innovation integrator*, where the cloud provider "defines the basic architecture for the core innovation and then invites network members to design and develop the different components that make up this core innovation" (Nambisan & Sawhney, 2011, p. 41). A Firm B-Cloud Platform Provider's sales and business development manager describes information sharing nuances and

dynamics between the cloud provider and its competitors, *“And this is important because [Cloud Provider] will not provide the personal information of the prospects or customers who are deploying the Accelerator because we protect our customers, but we are able to provide statistics which they value for the customer, and that is information that's private, or public, but it's shared across the two parties...Those are ways of how we share IP.” [Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider].*

**Efficiency.** In contrast to novelty, *efficiency* is less about cocreating and sharing rich intellectual property and more about cocreating solutions to enable higher productivity and process efficiency for internal and external-facing activity. More importantly, educating the customer on how they can leverage and use these new services to continue to drive business value. The customer suggests that while there is some value in the IP being created by the collaborating firms, there is more value in terms of the service(s) being delivered by the professional services firm and the cloud provider. By value, the customer expects an accelerated migration, cost savings, and high-quality product and service. We can infer that the IP created during the engagement is based on replication and reusability of existing artifacts and publicly available knowledge. That experience, quality, knowledge and knowhow are precisely the value that the customer expects from the cloud provider and professional services firm, as noted by a Firm A-Product Owner's senior director, *“There's not a huge intellectual property value there perhaps, but the value is more in terms of the service itself, right? Where somebody is going to save time, save cost in trying to glue all these pieces together to create that service that you end up creating. But it's not so much of a sharing problem as opposed to okay, you invested in it, you created that service through a bunch of public knowledge and public data that's already out there. But people are still willing to*

*pay money for that service because it saves them time and cost to some extent. And gives them some level of quality” [Senior Director of Information Security, Customer].*

Trust in such cooperative relationships does not just magically happen. Across cases, to maximize value cocreation from the relationship, the customer needs to be transparent, receptive, and open to the ideas, opinion and guidance of the digital platform provider and professional services firms. In other words, the actors involved which are collaborating daily with the customer need to be trusted but at the same time, they need to earn the customer’s trust and establish their credibility early in the relationship. For instance, the Cloud platform provider offers expertise around architectural design patterns to the customer which have enterprise and financial implications: *“And they need to be open to hearing the opinion that we have because there are many cases where enterprise support may go in and you know, the customer is just not receptive. I may have a phenomenal message, but if the recipient of the message is you know, not willing to listen or engage and then that idea is not going to go anywhere.” [Firm B- Cloud Platform Provider, Enterprise Support Leader].*

As trust begins to establish between the participating firms, they begin to collaborate and share information. A Firm A-Product Owner’s Program Manager for Architecture & Security Technologies explains that once they understand how these new services fit and align to their business goals, that the participating firms join forces to build together. The customer shares how the Cloud Platform Provider ‘enlightens’ them with a plethora of training, sharing information around platform features, as well as software development practices. The customer also acknowledges that without this type of collaboration or information sharing, it would make it difficult for the customer to build digital products and solutions in isolation, *“And then also enlighten us with various type of trainings, opportunities letting us know what is the latest for*

*coming out of that platform where we can leverage and utilize and then if we are interested to go to a next step, and that's where the three of us, the three of the components can work together and deep dive, get into more discussions or even hands on to build that functionalities that we all wanted to build. And I think it's a back-and-forth benefit mutually beneficial type of relationship because not only we get to know what the best of the capabilities we can offer.” [Program Manager for Architecture & Security Technologies, Customer].* But the Cloud Platform Provider goes above and beyond the information sharing boundaries and incorporates the customer’s product feedback into the Cloud Platform Provider’s product roadmap, demonstrating customer-centricity and exemplary partnership, *“At the same time, [Cloud Provider] also consumed a feedback and the use cases from our company and then they go out and then come out with even better services in the future to make the platform services as a whole. I think this is a very good ecosystems that we're running. Definitely you cannot achieve success without any of these components. [Program Manager for Architecture & Security Technologies, Customer].*

Information sharing even in the context of efficiency is not always fluid and positive. A point of friction between the Cloud platform provider and customer had to do more with resistance to change. This friction is around resistance to change from an on-premises data center model to a cloud-native model. Moving work from on-premises environments assumes that much of the operational and day-to-day management of data center operations are eliminated, which means that the cloud provider takes on more of that responsibility, which is referred to as fully managed services. Services that are effectively managed and under the responsibility of the Cloud platform provider. Further, the lack of transparency and fear from the customer that they may be displaced by the other collaborating firms. These unique situations where trust between the actors on the value cocreation project are exposed when change management and resistance issues surface in

the relationship between the customer's resources (architects, developers) and the Cloud Provider Platform (Firm B) and Professional Services Firm (Firm C) resources. *"People can be more transparent than others. It depends on trust and relationships and executive. It's one of the key things with executive directors getting the, you know, the top-down approach. You know, there's always that element of people not sharing what they need to or being, you know, maybe worried about their jobs or exposed by something. [Partner Business Development Manager, Professional Services]."*

**Management Approaches.** To manage the paradox of information sharing, comply, control, and conceal (Oliver 1991) tactics are employed to cope with the *open-transparent vs close-secrecy* paradox (efficiency and novelty). Comply is defined as "conscious obedience to or incorporation of values, norms, or institutional requirements" (Oliver, 1991, p. 152). The Cloud Platform Provider is part of a robust digital platform ecosystem where third-party developers, competitors and partners cocreate solutions on top of the Cloud Platform Provider's cloud infrastructure and they have full trust in the cloud provider in terms of data privacy and potential for opportunism or relational inertia, where the cloud provider takes advantage of the partner's goodwill (Dyer et al., 2018). A Firm B-Cloud Platform Provider's sales and business development manager explains how they comply with the rules of engagement and respect their customers, partners, and competitors' information privacy, *"But there's something very clear, which is we will never look into our customers' infrastructure. And we don't know where they're running. We don't want to know where they're running in terms of the data that's in there and the code. That is something that we have to stay out of when we always say that the only reason we will disclose the data. Some customer data is because we have some sort of order from federal agency or some government institutions and it goes through legal routes too, to have [Cloud Provider] provide that information. I doubt we're*

*never looking at that and you can think of a number of ISV's that like, another one that comes to mind because I've also worked with them is [Partner/Competitor]. [Partner/Competitor] is a \$15.6 billion valuation company that's running on [Cloud Provider]. But all that information is protected under the mutual NDA."* [Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider]. Oliver (1991) posits that an organization may comply with external pressures because the approbation of external constituents enhances legitimacy. Here we have a case where the Cloud Platform Provider complies with a partner-competitor given a sizable market cap (\$15.6 billion). Therefore, maintaining that relationship and cooperative partnership is absolutely critical to the market success of both firms. A senior director of information security confirms how the collaborating firms comply with the rules of engagement (e.g., NDAs, contractual agreements, etc.), *"So, the under NDAs and all those types of agreements that you kind of know where the boundaries of sharing lay."* [Firm A-Product Owner, Senior Director of Information Security, Customer].

*Controlling* tactics on the other hand, are "are specific efforts to establish power and dominance over the external constituents that are applying pressure on the organization" (Oliver, 1991, p. 154). The firm's objective is to dominate rather than to influence institutional processes (Oliver, 1991). The Cloud Platform Provider acts as the central hub as the orchestrator which controls the flow of the processes and cooperative relationships with its customers, partners, and competitors, *"A lot of it goes public; there's a deployment guide, there's a template, but a couple of things go private and the couple that I can share that are not super sensitive are how [Cloud Provider] tells the ISV, hey, you need to connect to these, you need to deploy these API's. These are important for us to do monitoring and all these things. And then the other thing is, we're able to provide statistics on the usage of the Accelerators."* [Independent Software Vendor (ISV) Sales

and Business Development, Cloud Provider]. Part of the control tactic is establishing power and dominance by managing the various stakeholders involved – including competitors – in the value cocreation and brokering the interactions among firms, *“I’m more or less the conduit for that. And then on the go to market side. I broker the interactions. So that can be anything from contracts procurement to them using a new service or feature to helping them navigate.”* [Business Development Manager, Cloud Provider].

*Concealing* tactics are similar to *masking* nonconformity. Oliver (1991) suggests that “Concealment tactics involve disguising nonconformity behind a facade of acquiescence” (p. 154). To provide context, Firm A-Product Owner (\$240B market cap) and Firm B-Cloud Platform Provider (\$1.5T market cap) are two large organizations but Firm B (Cloud Provider Platform) is the dominating platform. As mentioned above, despite the replication from the cloud provider, no IP-related issues surfaced from this imitation and there were no hard feelings between these companies. The customer whose software assets were imitated by the cloud provider avoided any confrontation with the cloud provider. In fact, months later, the customer delivered a presentation at a large, global user conference hosted by the cloud provider. In that conference, one of the customer’s cloud architects presented the entire product’s architecture and its general product design as if it was an open-source product, but also highlighting the software asset replication and imitation, *“I forgot the service name, but they came out with the service very similar to [Customer SaaS Product]. It’s not [Cloud Provider service name]. It was something else...but they were here to do a demo for us and we’re like, hey, this is [Customer SaaS Product]. Where did you guys get the idea from? ... but to [Cloud Provider] as a whole, maybe they can come out with something similar as well.”* [Firm A-Product Owner, Program Manager for Architecture & Security Technologies, Customer].

Despite the product replication and imitation, the customer and Cloud platform provider continued their customer-competitor relationship. A senior director of information Security believes that there's not that much of a secret sauce in building and replicating this SaaS product. There is a sense that this is part of the competitive landscape in the Silicon Valley, and it is part of this fast-changing innovation phenomena that we live in. Other innovative startups have done very similar architectures very similar solutions on top of the cloud provider. The customers also understand that the cloud provider themselves have done some of this replication from other customers. *"I don't know, maybe even if we try to pack and then you have this, we may have still been stuck in US patent discussions about should this be a patent and here it is already in multiple places...the rate of innovation is pretty fast and on all of this. I didn't think of that enough to put any sort of specific clause on."* [Senior Director of Information Security, Customer].

**Outcomes.** Managing the paradox of knowledge sharing requires a multi-tactics to reduce or solve such tension because of the complexities and nuances with information sharing, particularly in situations where firms cooperate and compete simultaneously. A key element in managing the information sharing paradox is having transparency and visibility around costs, and protection and privacy around intellectual property. The service-based costs structure and platform modularity from the Cloud Platform Provider promotes a level of transparency which has a positive influence on building trusting relationships between the customer and the cloud provider. There are no hidden costs. From a customer's point of view, it eliminates a major concern knowing exactly what the implementation costs and run rates are going to be for each cloud service. A Firm B-Cloud Platform Provider's enterprise support leader stated the cost transparency as follows: *"The second thing that happens with modularity is that you understand, you as a customer understand the costs of data. You know, if your hardware vendor is selling you hardware for*

*multiple parts of your platform, your costs are very hard to calculate. Whereas with the modularity that [Cloud Provider] offers, I know exactly what my security is costing me and that is independent from what my database are costing me and that's independent from what my compute is costing me. And so just having a better means to account for your spend and have the optionality to make independent decisions are probably the two big factors.” [Enterprise Support Leader, Cloud Provider].*

In addition to transparency around costs, we found that across cases, a key factor in building safe information sharing environment is when the system integrators and digital platform providers go above and beyond the contractual terms and agreements. In other words, the cloud provider and BPM Platform are generating and bringing more value-add to the relationship. Here, a customer’s (Firm A-Product Owner) Senior Director of Information Security, values the fact that their cloud provider is open to sharing new ideas and adding net new value to the relationship, free of charge and without being too stringent on costs and contractual terms: *“And a lot of times in the industry we’re in you know, people are the intellectual assets and they’re always going to come forward and share ideas and, you know, share more than what’s written in an SOW or what is written in the contract.” [Senior Director of Information Security, Customer].*

Part of the successful journey between the Cloud Platform Provider and customer was the solidarity and trust that was established between the firms and other parties involved, as well as dedicated program management and leadership. This assumes controlling the interactions between firms and balancing the existing cooperative relationships. A Firm B-Cloud Platform Provider’s business development manager explained the importance of having a dedicated program manager dedicated as part of a top-down, governance model, *“it needs to be program managed by a senior resource program manager to ensure that you know, things when they do go off track, they compare*

*with their senior peers within the customer. And have those difficult conversations...So, all that collaboration is required and if it's not there, specifically the things that I mentioned, top-down, governance, these very components are not there, then the project just becomes, in my experience, it falls apart and you don't achieve what you set out to achieve.*" [Partner Business Development Manager, Cloud Provider]. Further, this successful alliance and cooperative relationship between the customer and Cloud Platform Provider is due to the physical interaction and socialization. Customers stressed the importance of socialization and having physical presence to foster a higher level of information sharing. A Firm C-Professional Services Firm's business development manager explains, *"I think that's quite important, but it adds to the cost is face to face time, I think, partly, you know, working with someone, being with them can help a lot in terms of looking him in the eye and building trust. I think that's important"* [Firm C-Professional Services, Partner Business Development Manager]. The process of forming a safe environment where ideas and information are shared between players is not an easy task. IT value cocreation projects can be complex where several players – including partners and competitors – interplay with one another on a recurring basis. In some cases, several of these players come from different backgrounds and locations from around the world. Establishing mutual trust between collaborating firms can be challenging and more so in virtual environments. Traditional channels of communication and interaction (e.g., videoconferencing, web, email, chat, etc.) enable strong collaboration, however, it limits the actors' ability to co-design and co-develop on the project. Therefore, firms choose to make investments and ensure that there is some level of physical interaction and engagement between the actors responsible for IT value cocreation projects. Physical presence from the actors responsible for the value cocreation project helps build and establish trust, leading to more open information sharing over time. A Senior Engineering Manager for Collaboration Platforms from

the customer offers their views on why physical interaction is important to build trust and key to the success of the engagement: *“I tried to do that on all of my projects, even if it's just once or twice, and there's people from around the world coming together, bringing them all together into a room for a day and getting the most out so they will actually know each other and people. I think it deepens that. Mainly, in summary, I think the tooling is important, giving the making communication easier, but also the face-to-face time is also important.”* [Firm A-Product Owner, Senior Engineering Manager for Collaboration Platforms, Customer].

***Cross-case analysis: Summing up the paradox of information sharing.***

The above analysis outlined the paradox of information sharing. Several tactics are employed to balance the *closed-door-secrecy* (novelty) and *open-transparency* (efficiency) paradox. Information sharing in efficiency activity was depicted as open-transparent by case informants but not so much when there is sensitivity and IP-related privacy matters that may jeopardize revenue-generating opportunities. Both digital platforms (BPM Platform and Cloud Platform Provider) adopted a compliance tactic (“conscious obedience...”) to ‘comply with external pressures’. The differences, however, is that the BPM Platform complied to the customer’s strict and aggressive requirements to enhance its legitimacy and increase its firmness as the customer’s BPM platform of choice. On the other hand, the Cloud Platform Provider complied not for legitimacy purposes but to incentivize the customer to increase the Cloud Platform Provider’s services (to make things ‘more sticky’). Further, to manage the paradoxical tension (*closed-door-secrecy* and *open-transparency*), the BPM Platform adopted masking and pacifying tactics. The BPM Platform and customer maintained their close-secrecy stance; meaning, the customer ‘masked’ sensitive information and kept the BPM Platform on a ‘need-to-know’ basis throughout their journey. The pacify tactic employed by the BPM Platform helped to carefully share strategic

information and soften the sensitivity around the planned yet secret go-to-market alliance between the customer and the BPM Platform.

On the other hand, Cloud Platform Provider employed different tactics to cope with the *open-transparent vs close-secrecy* paradox (efficiency and novelty), which include control and conceal (Oliver 1991). For example, the Cloud Platform Provider's willingness to share information (e.g., reusable code or APIs) with its customers and partners but had a tendency to control and dictate how these APIs/services are to be implemented by partners and customers. This controlling tactic gave the Cloud Platform Provider the ability to monitor and track usage and consumption. A concealing was employed by the Cloud Platform Provider and the customer due to the Cloud Platform Provider's replication of the customer's SaaS product that was co-developed between the customer and the Cloud Platform Provider. The customer's disguised their "nonconformity behind a facade of acquiescence (Oliver, 1991).

Lastly, in both digital platforms, the system integrators (Professional Services and BPM Integration Services Firm) play a critical role in balancing these tactics because Integrators develop strong partnerships with customers and foster a greater degree of information sharing even when the participating firms are direct competitors.

Table 5: *Information sharing: Cross-case analysis.*

Digital Platform	Tension	Examples from interviews	Management approaches
<b>BPM Platform</b>	<b><i>Closed-door-secrecy (novelty)</i></b> as a value creation was described as capturing and sharing knowledge to cocreate joint digital solutions with the purpose of commercializing a product, generating revenue, and expanding market share. Informants are more careful when sharing information and	<p>"No, that's not an answer. It's not his code. It's our code. That's [Customer] code. He gives it to us. I don't care. So that is the direction."</p> <p>"Keep things at a need-to-know basis, things that are very confidential."</p> <p>"...but from what I understand, I don't think he [Customer] is comfortable to share that code"</p>	<p><b><i>Masking</i></b> refers to the ability for firms to share information on a need-to-know-basis to avoid spillover of sensitive partner alliances information and intellectual property.</p> <p><b><i>Complying</i></b> refers to as "conscious obedience" to values, norms, or institutional requirements. "Build a strong relationship with your point of contact, make sure that you're</p>

	are kept on a 'need-to-know-basis'.		<i>trustworthy and make sure you both follow proper business ethics. It has to go both ways for things to work."</i>
	<b>Open-transparency (efficiency)</b> as a value creation emphasizes on operational efficiencies; an emphasis entails lowering costs (e.g., automating processes) and risk management in terms of compromising intellectual property to the customer and digital platform providers.	<p><i>"There's nothing intellectual about it, but let's say [potential customer] wants to move to [Customer], you can just give them the actual application and show what has been done."</i></p> <p><i>"...we share everything that the project needs to work successfully..."</i></p>	<b>Pacifying</b> is about achieving partial conformity with the expectations of one or more constituents. The BPM Platform hesitates and chooses to avoid adding pressure to the customer's executives and decision-makers to pacify the situation. <i>"I kind of hesitate to bring this up because this is only just happening last evening..."</i>
<b>Cloud Platform Provider</b>	<b>Closed-door-secrecy (novelty)</b> information sharing is less transparent and carefully managed due to the sensitivity and privacy of information, such as unique intellectual property ("secret sauce") – e.g., cloud provider absorbs and replicates a customer's products and capabilities.	<p><i>"I feel we did some fairly innovative work and I don't want to stretch it too far by saying maybe that's what even led to creation of some of the [Cloud Provider] services..."</i></p> <p><i>"I think again the amount of sharing goes into what value are you creating and what are you going to do with it? ... if there is a level of intellectual property that's going into that you're going to make loads of money on at some point you're going to have a lot more hesitation in sharing."</i></p>	<b>Complying</b> refers to as "conscious obedience" to values, norms, or institutional requirements. <i>"But there's something very clear, which is we will never look into our customers' infrastructure. And we don't know where they're running."</i>
	<b>Open-transparency (efficiency)</b> information sharing is less about cocreating and sharing rich intellectual property and more about cocreating solutions to enable higher productivity and process efficiency for internal and external-facing activity.	<p><i>"There's not a huge intellectual property value there perhaps, but the value is more in terms of the service itself...But people are still willing to pay money for that service because it saves them time and cost to some extent. And gives them some level of quality"</i></p> <p><i>"And then also enlighten us with various type of trainings, opportunities letting us know what is the latest for coming out of that platform where we can leverage and utilize..."</i></p>	<b>Controlling</b> tactics focuses on establishing power and dominance. The Cloud Platform shares information but dictates what/how the services need to be deployed. <i>"[Cloud Provider] tells the ISV, hey, you need to connect to these, you need to deploy these APIs."</i>
			<b>Concealing</b> tactics involve "disguising nonconformity behind a facade of acquiescence" (Oliver, 1991). <i>"I forgot the service name, but they came out with the service very similar to [Customer SaaS Product]... Where did you guys get the idea from? ... but to [Cloud Provider] as a whole, maybe they can come out with something similar as well."</i>

## 7.5 Discussion

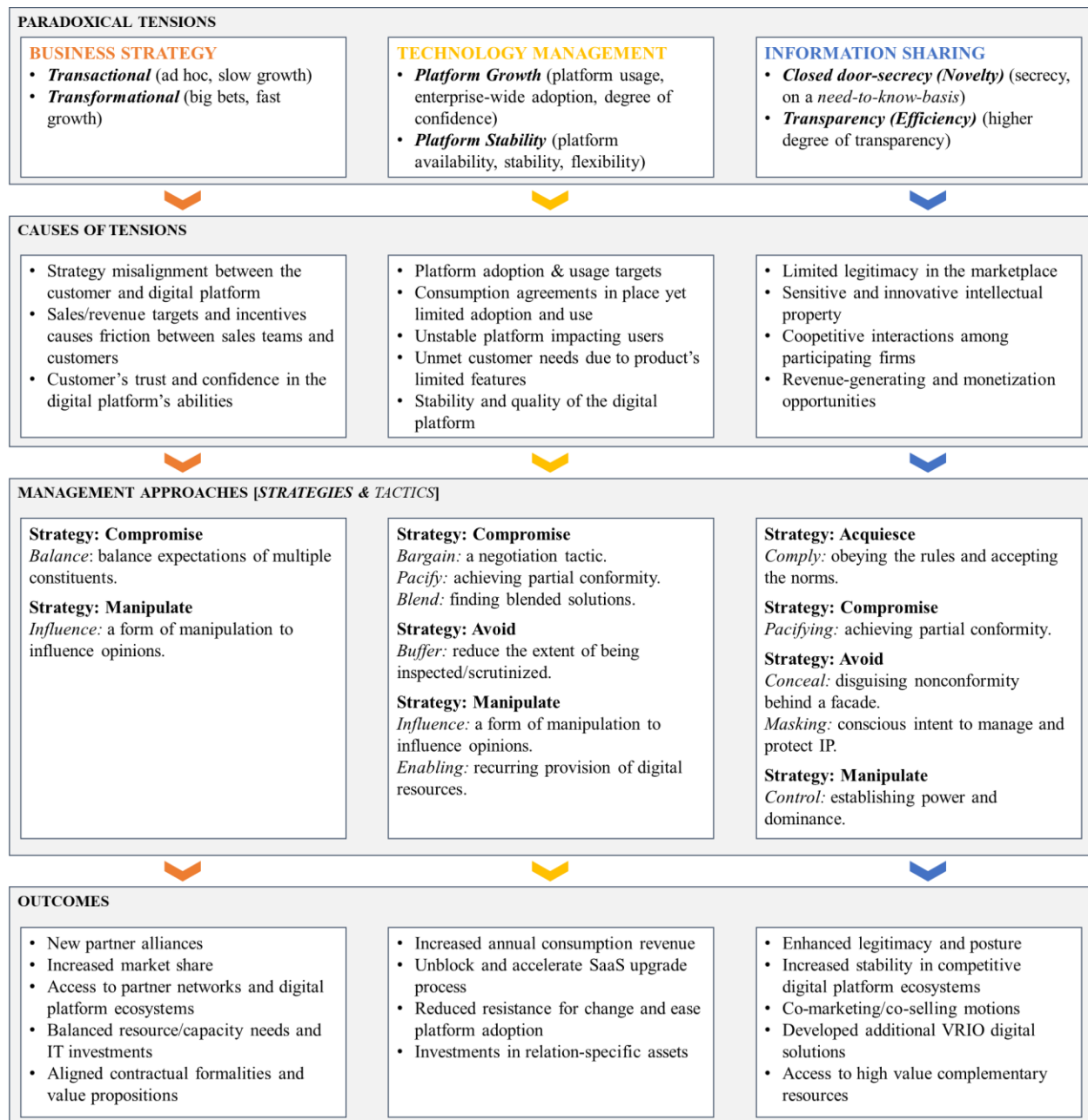
### 7.5.1 An Integrative Model of IT Value Cocreation in Coopetitive Environments

Through this study we sought to contribute an alternative model for examining IT value cocreation tensions. Our findings highlight three nested tensions, presented as paradoxes of IT value cocreation. We now build from our multiple case study findings and existing literature to theorize how firms might manage IT value cocreation paradoxes in coopetitive environments and digital platform ecosystems (see Figure 8 for illustration). To interpret our findings, we used paradox literature as well as past studies of IT-based value cocreation and coopetition. We applied paradox as a valued lens, integral to our emerging, conceptual model (Andriopoulos & Lewis, 2009; Lewis, 2000; Poole & Van de Ven, 1989). Managerial responses for resolving paradoxical tensions are consistent with Gregory et al (2015) and Smith and Lewis's (2011) observations that "confronting paradoxical tensions involves iterating between choosing one of the two demands at one time while working toward an accommodation and integration of the two demands" (Gregory et al., 2015, p. 75). We employ Oliver's (1991) strategic responses and tactics for resolving paradoxical tensions. Additionally, we identify two general variations of resolving paradoxical tensions, which we refer to in the model as *enabling* and *masking*. We describe these constructs in the emerging model below in Figure 9.

As shown in Figure 9, we present an integrative, abstracted model that builds on the theory development in our study and the theoretical integration efforts illustrated in this section, inclusive of comparisons with extant literature in the field of coopetition, paradox, and IT value cocreation. The model illustrates three interwoven paradoxes of IT value cocreation in coopetitive environments: *business strategy*, *technology management*, and *information sharing*. For each paradox, we represent *causes of tensions* and strategic responses as *management approaches* to

cope with such tensions. In particular, paradoxical tensions triggered by the incentives, motivations, and business drivers for each participating firm in the IT value cocreation process. The model concludes by highlighting IT value cocreation *business outcomes*. Consistent with Andriopoulos and Lewis (2009), we argue that a multilevel approach is needed to manage nested paradoxes and that these paradoxes are interrelated across levels. The *business strategy* paradox appears predominant at the firm level, where *technology management* particularly affects efforts within projects. *Information sharing* appears impactful in both firm level and project levels depending on the intent of the IP that is jointly developed (e.g., for profit/revenue generation vs internal operational efficiencies).

Figure 9 An Abstracted Integrative Model of ITVC in Coepetitive Environments and Digital Platform Ecosystems



First, concerning the *business strategy* paradox, we posit that the power of the digital platform ecosystem is a core ingredient in the pursuit of transactional and transformational activities, but it also acts as a key complementor to coepetition. To manage such tension, specifically strategy paradox, it requires a level of coordination of people and a plethora of digital technologies (proprietary and 3<sup>rd</sup> party platforms). Firms find that compromising and balancing

the needs of multiple constituents are effective strategies and tactics to achieve the desired outcomes (transactional-slow growth; transformational-big bets). At the firm level (customer), however, we found that firms seeking value cocreation and co-innovation with other competitors and digital platform providers understand that they, alone, cannot innovate in isolation without access to specialized skills and digital technological assets. A pattern that surfaced in the second case (BPM Platform-customer) is referred to as “*stuckness*” (Jay, 2013), where the BPM Platform was pursuing transformational, innovative, big-bet initiatives; meanwhile the customer resisted big-bet ideas, was less collaborative, and preferred slow growth, transactional and tactical activity. The cloud provider-customer relationship, on the other hand, demonstrated that to achieve business strategy objectives and innovation outcomes, transformational or transactional, digital platforms enable organizations to pursue innovation collaboratively (Nambisan et al., 2017; Tiwana et al., 2010). Consistent with research, our findings suggests that the need for interoperability and network externalities are motives for competitors to cooperate in networked-centric environments (Fjeldstad et al., 2004). Competitors need to cooperate and find a level of interoperability across the technology value chain because they cannot build products and services in isolation (Ritala, Hurmelinna, et al., 2009).

Based on our analysis we posit the following proposition:

**Proposition 1 (PP1):** *In order to manage the business strategy tension in IT value cocreation in digital platforms, the involved firms must be willing to compromise and manipulate by balancing expectations and demands and influence opinions of multiple stakeholders, respectively.*

Second, managing the *technology management* paradox, we found that effective coordination in dealing with *platform growth* and *platform stability* requires program and project

management, governance, cooperation, and high levels of collaboration between firms and actors participating directly in day-to-day activities. Program and project management are mechanisms that facilitate mutual communication and are key ingredients to balancing the *technology management* paradox. Customers continue to adopt and use the digital platform as long as they continue to achieve the desired business value from their IT investments and are far more cooperative. However, we found that the platform stability slows down or impacts platform adoption altogether and customers tend to be less cooperative and are not as confident in making additional investments in the digital platform. Our finding aligns to research in that as our selected firms cooperate overtime, relational governance emerged through trust, which facilitates mutual communication and strengthens the cooperative relationship (Gnyawali & Ryan Charleton, 2018). To cope with such tension, firms pursue a blending (Gregory et al., 2015), compromising and defying (Oliver, 1991) strategies as management approaches. Blending, in our case, means that the digital platforms offer a wide range of incentives, specialized resources, and discounted services to influence greater adoption while at the same time, make considerable investments in stabilizing the digital platform. Firms also adopt a more compromising strategy, a pacify tactic (Oliver, 1991) to placate the storms, emotions, and tensions between the digital platform, customer, and system integrator. In contrast to compromising and blending strategies, in some cases digital platforms adopt a defiant strategy and challenge the customer on issues and blockers that are impacting the stability of the digital platform (e.g., digital platform upgrade delays are caused by the customer's lack of commitment or poor allocation of resources). Through our analysis process, we arrived at a new theme and identified a general variation of management strategy for resolving paradoxical tensions, which we refer to in our model as *enabling*. Knowledge-sharing between participating firms leads to new discoveries of additional complementarities (Dyer et al., 2018). In Hein et al's

(2019) Digital platform ecosystems paper, they stated the essence of enabling with the following statement made by the software company SAP: “reaching our full potential depends on how well we enable our partners, providing them with [the] tools they need to accelerate growth and exceed customer expectations in an increasingly complex world.” (SAP Partner Edge 2017) (p. 1). Building on Hein et al. (2019), they suggest that a governance mechanism is the provision of boundary resources (APIs, SDKs, toolkits) to integrate and enable an ecosystem of actors to co-create complementary products or services (Ghazawneh & Henfridsson, 2013). Further, the platform owner provides affordances by offering development tools for complementors to co-create value-adding complements (Ghazawneh & Henfridsson, 2013; Hein, Schrieck, et al., 2019; Nambisan et al., 2019). The combination of our data analysis and literature in digital platforms, we define *enabling* as a recurring provision of digital resources (knowledge, training, assets, online communities) and subject matter expertise and coordination of an ecosystem of actors to drive easy platform adoption and speed the cocreation of complementary digital solutions.

**Proposition 2 (PP2):** *To cope with technology management tensions and facilitate platform growth while managing platform stability (bottlenecks, ‘stuckness’) in IT value cocreation in digital platforms, platform firms should employ avoiding and compromising strategies to reduce platform growth barriers and achieve customer conformity.*

Third, in the case of *information sharing* paradox, balancing both *close-secrecy (novelty)* and *open-transparency (efficiency)* tension is challenging. Information sharing seems to be dependent on value and purpose, the uniqueness and competitive advantage of intellectual property. As described by (Dyer et al., 2018), an important challenge is one of addressing the tensions between value creation and value appropriation. Our findings suggest that as mutual trusting relationships are developed, over time, partners and customers become more comfortable

exchanging knowledge, resources, and complementary IT assets with one another (Gnyawali & Ryan Charleton, 2018) in order to achieve a common goal. (Blomqvist et al., 2005) argues that cooperation and competition interaction is dependent on the proximity of a business activity to its customers: “firms compete in activities close to the customers and cooperate in activities far from the customers. In competition, the focus is on value appropriation strategies, whereas in cooperation the focus is on collective strategies for value generation” (Osarenkhoe, 2010, pp. 204–205). Information sharing assumes a level of transparency around intellectual property but this poses a challenge as partners may seek to appropriate the benefits of cooperation, including knowledge absorption, learning, and processes of replicating partner resources (Dyer et al., 2018), which are key findings and consistent with our research. Similarly, conceptualized by Cohen and Levinthal (1990), absorptive capacity indicates a firm’s ability to recognize, assimilate, and apply new knowledge. Further, research attention has been called to address the platform-relevant tensions such as openness and control and to manage collaboration and competition simultaneously (Rietveld & Schilling, 2021). Our findings surrounding the *information sharing* paradox offers insights on approaches to cope with such complex tensions like openness vs control and collaboration vs competition.

Managing complex programs and projects that deal with sensitive knowledge and intellectual property (IP) and where there are dozens of actors represented by three or more firms surfaced as a key theme, and a major requirement for IT value cocreation success. Therefore, coordination, cooperation, and collaboration play a crucial role in dealing with information sharing across participating firms. Coordination in multifaceted, triadic relationships requires task level decomposition, division of labor between project team members (roles and responsibilities), investments in partner-specific assets, and integration between participating firms. Cooperation

between participating firms is required to align on common interests and establishing mutually beneficial relationships without room for opportunistic behavior. In other words, specialized skillset, and dedicated personnel (e.g., an orchestrator) from all parties is required to glue the partners together, and to ensure alignment in terms of investments (time and resources) and agree on mutual business outcomes. Cooperation involves considerable amount of time, mutual investments and commitments, and access to each other's resources and specialized assets and skillsets to achieve the common purpose. We found that cooperation often depends on the level of risk, privacy, and sensitivity of IP, and monetization opportunities for the participating firms. From an ambidexterity standpoint, if projects are more exploitation oriented (March, 1991), for example building an application to reduce costs and comply with security policies, as in our case between the cloud provider and the customer; then competitors are more likely to share information and cooperate. However, the opposite occurs if the value cocreation projects are exploration oriented. In our case, the customer (product owner) was more likely to share sensitive information with the cloud provider – also a direct competitor – since the security software application that was co-developed did not have critical IP, and no commercial and monetization opportunities were at risk. This finding aligns to research suggesting that in order to cocreate value, the level of cooperation may be moderate to extensive mutual sharing of resources and risk, roles and responsibilities, and returns (Romero & Molina, 2011). Collaboration is a key ingredient to the overall orchestration effectiveness. The actors on multidimensional IT value cocreation endeavors need to master the art of influence to establish a safe, open, and transparent climate for all participating firms.

An interesting finding in our study is that levels of trust and distrust result in higher levels of collaboration and greater flow of information sharing between firms, which result in achieving the common business goals. This is consistent with (Raza-Ullah & Kostis, 2020), based on their

study involving dyadic inter-firm cooperative relationships, they argue that “cooperation intensity positively relates to relationship performance through trust, and distrust positively moderates this linkage” (p. 374). This means that trust is a mechanism through which cooperation intensity enhances relationship performance, while distrust plays a key role and is a condition under which the link between cooperation intensity relationship performance is further strengthened (p. 374). In one of our cases, a compliance strategy was adopted as a management approach to manage the information sharing paradox, mainly due to the aspirations of the BPM Platform’s desire to enhance its legitimacy and increase its stability (Oliver, 1991) in the relationship. A surprising management approach when there is opportunistic behavior in cooperative relationships, firms adopt an avoidance strategy, concealing their nonconformity (Oliver, 1991). “Concealment tactics involve disguising nonconformity behind a facade of acquiescence” (Oliver, 1991, p. 154). In the case of the cloud provider and customer (both competitors), the customer pretended and did not respond to the cloud provider’s opportunistic behavior because the IP that was replicated and imitated by the cloud provider did not have material or monetization impact to the customer’s bottom line.

Lastly, a new form of a management approach we uncovered in our study is the concept of a *Masking*. Organizational *Masking* depends on the organization’s (customer) conscious intent to manage and protect intellectual property, its degree of strategic and intentional transparency and secrecy, and its organizational objectives related to efficiency or novelty. This management approach is a strategy that requires a broad set of stakeholders and account teams from all levels to manage and reduce risk, and continuously find an equilibrium between cooperation versus competition, novelty versus efficiency, and value creation versus value appropriation.

**Proposition 3 (PP3):** *To cope with information sharing tensions while managing novelty and efficiency efforts as part of IT value cocreation in digital platforms, platform firms could employ acquiescence, compromise, avoid and manipulation strategies.*

Our proposed emerging conceptual model IT Value Cocreation in Coopetitive Environments and Digital Platform Ecosystems offers a multilevel and dynamic approach for managing complex paradoxical tensions in hypercompetitive and coopetitive environments. For instance, a paradoxical vision of the digital platform seeking big bets and high growth opportunities may attract the customer if it is aligned to their business strategic objectives. In turn, the customer may seek to exploit smaller, project-by-project value creation opportunities and avoid a ‘big-bang’, transformational endeavor. Therefore, the management approaches and strategies play a key role in balancing and managing each paradoxical tension in order to achieve at the desired business outcomes. For this reason, our aspiration is that these case firms serve as paradigms and motivate further research. In this light, we now examine the implications of our research and suggest directions for future research.

## **7.6 Implications and Future Directions**

Leveraging multiple case studies and blending IT value cocreation, coopetition, and paradox literature enabled development of a model that explicates coopetitive-based IT value cocreation tensions and their managerial approaches and responses. We exploit a unique group of firms – global leaders in their respective industries – encompassing digital platforms (BPM Platform, Cloud computing vendor), high-tech customers, and global system integrators. Drawing on paradox theory, more researchers (Andriopoulos & Lewis, 2009; Gregory et al., 2015; Toth et al., 2022; Wei et al., 2022) are exploring the phenomenon of paradoxes in digital platforms and innovation. We believe our results can inform extant research and contributes to multiple strands

of the information systems (IS), paradox, and IT-based value cocreation literature. First, our study is unique and the first to contribute to extant literature by examining how firms cocreate IT value (Grover & Kohli, 2012) and balance coopetition (cooperation and competition) in digital platform ecosystems. Previous scholars in IS have called for the need for more theory building (Gregory et al., 2015) that extend current work and our findings suggest that paradox lens may be useful in extending research in IT-based value cocreation in complex digital platform ecosystems environments. Prior research on tensions has investigated organizational and power dynamics (Greenwood & Hinings, 1996), innovation context (Andriopoulos & Lewis, 2010), IT transformation contexts (Gregory et al., 2015), and tensions between efficiency and effectiveness (Kohtamäki et al., 2021). Our study extends the paradox and IT value cocreation body of research by exploring a phenomenon that is everchanging and dynamic. Specifically, our work identifies nested tensions, represented as paradoxes of IT value cocreation in digital platform ecosystems and cooperative arrangements, and theorizes the potential for interwoven paradoxes, and their strategies and tactics to achieve desired business outcomes and customer value propositions.

Second, we respond to Grover and Kohli's (2012) research agenda where they suggest that "Cocreation among firms is likely to encounter partners who are also competitors" (p. 231). They also raise a question that is a core finding in our study, "*How can firms compete and cooperate in an environment of coopetition and still appropriate equitable value (Hurmelinna-Laukkanen and Ritala 2010)?*" Specifically, we shed light on the crucial question regarding how firms cocreate IT value in cooperative environments and digital platform ecosystems and extend Grover and Kohli's (2012) Cocreating IT Value framework by uncovering possible paradoxes and explaining how firms cope with paradoxical tensions.

Third, we contribute to the IT value cocreation literature by identifying two general variations of resolving paradoxical tensions in complex digital platform ecosystems, which we refer to in the model as *enabling* and *masking*. *Enabling* refers to the recurring provision of digital resources (knowledge, training, assets, online communities) and subject matter expertise and coordination of an ecosystem of actors to drive easy platform adoption and speed the cocreation of complementary digital solutions. *Masking* depends on the organization's (customer) conscious intent to manage and protect intellectual property, its degree of strategic and intentional transparency and secrecy, and its objectives related to efficiency or novelty. Based on our knowledge and investigation, these tactics did not exist in the literature. Given our goal of developing a paradoxical model that may spur more comprehensive empirical research, we now examine opportunities for testing and extending our model.

In summary, we contribute an emergent theoretical framework of paradoxes in IT value cocreation and hypercompetitive digital platform ecosystems. Prior research conceptualizes how firms navigate cooperation and competition in ecosystems (Hannah & Eisenhardt, 2018) and IT-based value cocreation (Grover & Kohli, 2012). We contribute by bridging these streams together, which is blending coopetition (cooperation and competition) and IT value cocreation with research on digital platform ecosystems. In doing so and by applying paradox theory, we offer a (a) more complete view on why tensions emerge when cocreating with other digital firms, (b) a set of paradoxical tensions in IT value cocreation, and (c) insights and managerial approaches into how firms may resolve paradoxical tensions in digital platform ecosystems.

A limitation of our study is that our examination of IT value cocreation paradoxes was limited to two case studies involving six firms (two cloud provider, BPM Platform, high-tech customer, and two system integrators). We consider a limitation that it is not longitudinal to

examine such paradoxes across a longer period. Extending our analysis to multiple different case contexts and types of digital platforms (e.g., Airbnb, Alibaba Cloud, Venmo, etc.) – including legitimacy in the marketplace (new incumbent digital platform vs an established digital platform) – could yield additional paradoxes and tensions that we could not currently find given the limitations of two cases.

An important avenue for future research is to uncover roles and responsibilities, capabilities, and leadership abilities required to manage successful IT value cocreation endeavors. A deeper analysis into each management strategy could provide rich insights – both theoretical and managerial. Researchers suggest that coopetition between competitors facilitate the learning of knowledge between partners (Schiavone & Simoni, 2011). We illustrated how high-tech customers and digital platforms (cloud provider and BPM Platform) can approach and manage risky situations that may stimulate opportunistic behavior of competitors particularly when there is tension, and the intensity of the competition is high. We encourage future mixed methods studies to extend our work to other types of digital platforms, customers, and industries. These studies would allow us to understand if these paradoxes are transferrable and useful to explain IT value cocreation and coopetition in other contexts.

## **7.7 Conclusion**

In today's competitive environments, it is difficult for isolated firms to maintain and sustain a competitive advantage and pursue digital innovation strategies without leveraging strategic alliances, partner ecosystems, and the use of innovative yet cost-effective technological platforms. It is expensive for firms to set up infrastructure services to enable the launch of new products and services, increase the speed of the digital innovation lifecycle, and keep up with time-to-market demands. We knew that managing IT value cocreation in cooperative environments is challenging

and our grounded theory explains what causes tensions between firms and the proposed paradoxes, as well as managerial approaches to resolve paradoxical tensions. Researchers (Gregory et al., 2015) encourage more scholarly engagement in building grounded theories in IS research and more extensive application of the paradox theory lens (Toth et al., 2022). We believe that the results of our grounded theory study offer insights, strategies, and practices to organizations that establish coopetitive alliances in digital platform ecosystems with other organizations to cocreate IT value while maximizing joint IT investments.

## 8 Chapter 6: Overarching Conclusion

In this dissertation, we have examined how firms cocreate IT-based value in collaborative environments, describing an emerging set of key processes that are dynamic and interrelated in nature, and how firms interpret and balance coopetition in the journey of IT value cocreation in digital platform ecosystems.

In our first empirical findings, presented in Chapter 4, we draw on the dynamics capabilities theoretical framework to consider how firms cocreate IT-based value in digital platform ecosystems, in which we focus on two leading digital platforms – a major cloud computing vendor and a BPM Platform provider. We attempt to take an end-to-end perspective on how firms cocreate IT value, beginning with the *why*, *how*, and *what*. Taking a process-based perspective, we explore the business drivers and motivations (the *why*) that lead firms to drive IT value cocreation initiatives in multi-firm environments. Results show that these business drivers lead to a set of dynamic *processes* of how firms cocreate IT value (the *how*). Over time, these key processes, actions, and interactions between participating firms – customers, partners, and competitors – culminate in different expected business efficiency, complementarities, revenue generation, and innovation outcomes (the *what*).

In our second empirical findings, presented in Chapter 5, we find that firms navigate paradoxical tensions while balancing coopetition (*cooperation* and *competition*) when cocreating IT value in digital platform ecosystems. Although these paradoxical tensions appear to be at odds, firms describe their responses as evidence of their strategies and management approaches to address or mitigate such tensions. We encountered three nested paradoxes of IT value cocreation in coopetitive environments: business strategy (transactional-transformational), technology management (platform growth-platform stability), and information sharing (efficiency-novelty).

Building on paradox literature, we shed light on what triggers such tensions and theorize how management strategies and tactics help manage these intertwined paradoxes to deliver business outcomes.

### **8.1 A Reflection of the Dissertation Results**

In this section, we provide an overarching reflection of this dissertation and highlight key observations around the emerging processes of IT value cocreation as well as the nuances of how firms cope with cooperative environments when cocreating IT value with other firms. We also ask questions that remain open, such as are these findings generalizable for digital platforms only or are there other settings? We then provide a comparison of our results in light of Grover and Kohli's (2012) Cocreating IT Value model and the IS literature.

Motivated by Grover and Kohli's (2012) Cocreating IT Value model and research agenda, this dissertation focused on the "*process*" of IT-based value cocreation and the examination of IT platform-based competition and IT-based value cocreation. Grover and Kohli (2012) suggest that while conceptually the idea of IT-based value cocreation seems simple and intuitive, the process of successfully delivering IT value cocreation poses several challenges – as well as opportunities. They therefore ask key fundamental questions, which are "*How do firms select partners?*" And "*How do relationships evolve?*" (p. 231). What are the intangible inputs to cocreate tangible value; and lastly, "...are there stages that need to be followed that articulate the necessary conditions that must be in place before moving to the next stage? (p. 231). We focused on the "*process-based*" question by employing a dynamic capabilities theoretical lens to tease out the IT-based value cocreation *processes* involved between firms that are participating in digital platform ecosystems.

Two fundamental elements within the sensing dynamic capability are to identify new technological possibilities or as Teece (2018) refers to sensing the existence of customers with

unmet needs and who are willing to pay for a product and service. This assumes that the customer has identified unmet needs as well as specific business drivers and business problem(s) that need to be solved. Further, the strength of a firm's dynamic capabilities determines the speed and degree of aligning resources (Teece, 2018), which also implies mobilizing internal and external resources through their partner network. Our results demonstrate an interesting phenomenon when and how customers select platforms and partners, specifically, between aspiring platforms and established platforms (BPM Platform) versus platform leaders (Cloud provider). Aspiring platforms and as in our second case, the BPM Platform for example, is recognized as an evolving platform – with a legacy history and trajectory – in the market. Not only does the BPM Platform needs to offer distinctive and novel value propositions (Khanagha et al., 2022), but they work extra hard to ensure that the platform is perceived as legitimate by influential actors from the customer, who may reject or pushback on the platform unless it aligns with what they perceive a prevalent platform (Adner & Kapoor, 2010; Cennamo et al., 2018; Masucci et al., 2020; Zhu & Iansiti, 2012). On the other hand, the Cloud Platform Provider is one of if not the largest cloud computing provider in the world with hundreds of thousands of customers and ISVs that are running and building digital solutions and services on top of the cloud provider's infrastructure, did not face the legitimacy scrutiny by the customer when they were selecting a cloud computing vendor. The customer in this case (Case 1), however, was cautious and did consider competitive threats from the cloud provider; meaning that the customer's market-facing products and services directly compete with the cloud provider's core services. Could platform legitimacy be a fundamental factor in the weighting criteria when selecting digital platforms for IT value cocreation?

Our results align with Khanagha et al (2020) in that a dominant platform ecosystem, an established firm with legacy business capabilities can only support and complement the platform

leaders (p. 20). The role of a complementor can secure profits but the firm's ability to exploit and maximize value compared to platform leaders is rather limited. During the process of selecting a platform of choice, platform legitimacy becomes a critical component in the decision-making process, as well as for platform expansion, adoption, and growth. The Cloud Platform Provider (Case 1) is by far a dominant and platform leader, not a complementor, while the BPM Platform (Case 2) is considered an established/legacy firm that often plays a complementor role with the notion that, over time, they create a market niche to become that central digital platform orchestrator. So, how does an aspiring platform capture a market niche given their limited legitimacy? When there are unmet customer user needs in existing platform (Shah & Tripsas, 2007) and new opportunities arise (Agarwal et al., 2017) or services and capabilities not being served, a firm may seize these opportunities to create a platform that plays a central role in the ecosystem – as the platform orchestrator – delivering various functions and services. The BPM Platform demonstrated effective vertical and horizontal orchestration by identifying and exploiting customer's unmet needs and new value cocreation opportunities. To become the central platform orchestrator, the aspiring platform capitalized on its strengths and resources, they focused on delivering business value to the customer throughout the IT-based value cocreation processes. In our case, the BPM Platform brought unique capabilities around AI-driven business process management, intelligent robotics process automation, and low-code/no-code software development functionality. As the BPM Platform continues to address the customer's unmet needs, services, and capabilities, the platform begins to take more of a platform leader role and not solely a complementor in the cocreation relationship because the platform demonstrates and delivers business value to influential actors and key stakeholders. As a result, the BPM Platform improves

its degree of platform legitimacy – vertically and horizontally – and across the customer’s enterprise.

Fundamentally, customers are accountable and responsible for evaluating and selecting the ‘right’ digital platform and partner(s) involved in the IT value cocreation lifecycle. However, our results demonstrate how system integrators (SI) can play a critical role in the selection and decision-making process, especially when there is an established business and trusting relationship between the customer and the SI, and between the SI and the digital platform. The SI, in some cases, becomes the mediator and orchestrator when customers are searching for candidate digital platforms. After the platform/partner selection process, the vertical and horizontal orchestration process is perhaps the most complex due to the multiple moving parts, technologies, influential actors, and key resources from several participating firms. As Teece (2007) pointed out, the innovation process requires active orchestration of assets (tangible/intangible) by managers – or the notion of organizing for “orchestration”. But platform differentiation or novel value propositions from the platform, as mentioned above, are equally important. Researchers argue that differentiation is a way of avoiding ambiguous competitive positioning (Cennamo & Santalo, 2013). Other researchers further this conversation by suggesting that when platform creators are faced with legitimacy challenges, they need to focus on not only differentiation but also conformance at various stages given the everchanging needs of stakeholders (E. Zhao et al., 2017), and shifting the legitimacy criteria in the ecosystem (Rietveld & Eggers, 2018; Überbacher, 2014). In the context of ‘orchestration’ of innovation, Teece (2018) emphasizes processes between organizational levels and functions and organizations to enable innovation. Further, Brink (2018) suggests the concept of orchestration of dynamic capabilities developed within innovation platforms can enable innovation to support competitive advantage. We argue that in addition to

platform differentiation and conformance, the *vertical* and *horizontal orchestration* process is critical to gaining platform growth momentum at the customer or at the firm-level, as well as creating platform legitimacy within the digital platform ecosystem. A contribution to the literature on IT-based value cocreation and dynamics capabilities is made through explanation of the need for effective vertical/horizontal orchestration of processes and dynamic capabilities (Teece et al., 1997) and IT-based value cocreation (Grover & Kohli, 2012) in digital platform ecosystems.

A caveat to platform growth is that ecosystems have *bottlenecks* (Hannah & Eisenhardt, 2018). Bottlenecks are “components that constrain the overall growth or performance of the ecosystem due to poor quality, weak performance, or scarcity (Adner, 2012; Baldwin, 2015)” (Hannah & Eisenhardt, 2018, p. 3164). In our cases, the BPM Platform resolved multiple bottlenecks to solve for a stringent platform with limited openness to interact and interoperate with other internal and external systems through APIs, particularly with regards to the process of *co-integrating platform modularity*. Meaning that due to their platform’s shortcomings around interoperability, the BPM Platform invested heavily in delivering better platform modularity capabilities – hence requiring additional *co-sharing of resources* leading to larger specialized investments. Firms that stumble with bottlenecks have a chance to reduce the constraint on ecosystem evolution and slow down platform growth. Bottlenecks may also contribute to reduced platform legitimacy creating a negative brand within the digital platform ecosystem.

## 8.2 Limitations and Future Research

This research is limited to two digital platforms and thus the findings cannot be generalized to all settings. Future research could extend the number of cases, covering a broader number of industries participating in network-centric innovation and digital platform ecosystems.

Future research studies may involve exploring what other processes and IT value cocreation capabilities are required when firms enter innovation networks for IT-based value cocreation. Ritala et al., (2009) suggest that orchestration capability is especially required in future-oriented value creation, in search for both incremental and radical innovation and new business opportunities (Möller et al., 2005). Further, orchestrating for innovation is a managerial function to set a new path of efficiency, managing an ongoing equilibrium between the actors' benefits and costs that can vary along the way (Busquets, 2010, p. 491).

Future research can explore platform competition within complementors, aspiring platform leaders, and platform leaders. Where does the 'cloud wars' fit in this dilemma? Meaning, one customer that is a major cloud provider may not choose to invest in a BPM Platform because it has strong ties to a direct cloud competitor – as in our case 2 of our research.

On the basis of the findings from this study, it would be beneficial to analyze the interactions at the individual level – between roles and actors – who participate in the entire IT value cocreation process lifecycle, specifically, to detail the artifacts exchanged and quantify its economic value and exchanges.

### **8.3 Managerial Implications**

These research insights offer practical implications for digital platform ecosystems and network-centric innovation communities. It extends our understanding of how firms cocreate IT value in highly collaborative, cooperative environments. Results from this study create a good starting point for managers acquiring and combining knowledge for new IT value cocreation and collaborative innovation initiatives, particularly when cooperation and competition dynamics are in place.

## 9 Capítulo 6: Conclusión General

En esta tesis, hemos examinado cómo las empresas cocrean valor basado en TI en entornos colaborativos, describiendo un conjunto emergente de procesos clave que son dinámicos e interrelacionados por naturaleza, y cómo las empresas interpretan y equilibran la coopetición en el viaje de la cocreación de valor de TI en ecosistemas de plataformas digitales.

En nuestros primeros hallazgos empíricos, presentados en el Capítulo 4, nos basamos en el marco teórico de las capacidades dinámicas para considerar cómo las empresas cocrean valor basado en TI en los ecosistemas de plataformas digitales, en el que nos centramos en dos plataformas digitales líderes: un importante proveedor de computación en la nube y un proveedor de plataforma BPM. Intentamos adoptar una perspectiva de extremo a extremo sobre cómo las empresas cocrean valor de TI, comenzando con el por qué, cómo y qué. Tomando una perspectiva basada en procesos, exploramos los impulsores y motivaciones comerciales (el *por qué*) que llevan a las empresas a impulsar iniciativas de cocreación de valor de TI en entornos multi-empresariales. Los resultados muestran que estos impulsores de negocio conducen a un conjunto de procesos dinámicos de cómo las empresas cocrean valor de TI (el *cómo*). Con el tiempo, estos procesos, acciones e interacciones clave entre las empresas participantes (clientes, socios y competidores) culminan en diferentes resultados esperados de eficiencia empresarial, complementariedades, generación de ingresos e innovación (el *qué*).

En nuestros segundos hallazgos empíricos, presentados en el Capítulo 5, encontramos que las empresas navegan por tensiones paradójicas mientras equilibran la coopetición (*cooperación y competencia*) al cocrear valor de TI en ecosistemas de plataformas digitales. Aunque estas tensiones paradójicas parecen estar en desacuerdo, las empresas describen sus respuestas como evidencia de sus estrategias y enfoques de gestión para abordar o mitigar tales tensiones. Nos

encontramos con tres paradojas anidadas de la cocreación de valor de TI en entornos cooperativos: estrategia empresarial (transaccional-transformacional), gestión de la tecnología (crecimiento de la plataforma-estabilidad de la plataforma) e intercambio de información (eficiencia-novedad). Basándonos en la literatura sobre paradojas, arrojamos luz sobre lo que desencadena tales tensiones y teorizamos cómo las estrategias y tácticas de gestión ayudan a gestionar estas paradojas entrelazadas para ofrecer resultados comerciales.

### **9.1 Un Reflejo de los Resultados de la Tesis**

En esta sección, proporcionamos una reflexión general de esta tesis y destacamos las observaciones clave en torno a los procesos emergentes de cocreación de valor de TI, así como los matices de cómo las empresas hacen frente a los entornos cooperativos al cocrear valor de TI con otras empresas. También hacemos preguntas que permanecen abiertas, como ¿estos hallazgos son generalizables solo para plataformas digitales o hay otras configuraciones? Luego proporcionamos una comparación de nuestros resultados a la luz del modelo *Cocreating IT Value* de Grover y Kohli (2012) y la literatura de SI.

Motivada por el modelo de cocreación de valor de TI y la agenda de investigación de *Cocreación de valor de TI* de Grover y Kohli (2012), esta tesis se centró en el "*proceso*" de cocreación de valor basada en TI y el examen de la competencia basada en plataformas de TI y la cocreación de valor basada en TI. Grover y Kohli (2012) sugieren que, si bien conceptualmente la idea de la cocreación de valor basada en TI parece simple e intuitiva, el proceso de entrega exitosa de la cocreación de valor de TI plantea varios desafíos, así como oportunidades. Por lo tanto, hacen preguntas fundamentales clave, que son "*¿Cómo seleccionan las empresas a los socios?*" Y "*¿Cómo evolucionan las relaciones?*" (pág. 231). Cuáles son los insumos intangibles para cocrear valor tangible; y por último, "... ¿Hay etapas que deben seguirse que articulan las condiciones

necesarias que deben existir antes de pasar a la siguiente etapa? (pág. 231). Nos centramos en la cuestión "*basada en procesos*" empleando una lente teórica de capacidades dinámicas para desentrañar los procesos de cocreación de valor basados en TI involucrados entre las empresas que participan en los ecosistemas de plataformas digitales.

Dos elementos fundamentales dentro de la capacidad dinámica de detección son identificar nuevas posibilidades tecnológicas o como Teece (2018) se refiere a detectar la existencia de clientes con necesidades no satisfechas y que están dispuestos a pagar por un producto y servicio. Esto supone que el cliente ha identificado necesidades no satisfechas, así como impulsores comerciales específicos y problemas comerciales que deben resolverse. Además, la fortaleza de las capacidades dinámicas de una empresa determina la velocidad y el grado de alineación de los recursos (Teece, 2018), lo que también implica movilizar recursos internos y externos a través de su red de socios. Nuestros resultados demuestran un fenómeno interesante cuando y cómo los clientes seleccionan plataformas y socios, específicamente, entre plataformas aspirantes y plataformas establecidas (Plataforma BPM) versus líderes de plataforma (proveedor de la nube). Las plataformas aspirantes y, como en nuestro segundo caso, la Plataforma BPM, por ejemplo, son reconocidas como una plataforma en evolución, con una historia y trayectoria heredadas, en el mercado. La plataforma BPM no solo debe ofrecer propuestas de valor distintivas y novedosas (Khanagha et al., 2022), sino que trabajan muy duro para garantizar que la plataforma sea percibida como legítima por actores influyentes del cliente, que pueden rechazar o rechazar la plataforma a menos que se alinee con lo que perciben como una plataforma prevalente (Adner & Kapoor, 2010; Cennamo et al., 2018; Masucci et al., 2020; Zhu e Iansiti, 2012). Por otro lado, el proveedor de plataforma en la nube es uno de los proveedores de computación en la nube, si no el más grande del mundo, con cientos de miles de clientes e ISV que ejecutan y construyen soluciones y servicios

digitales sobre la infraestructura del proveedor de la nube, no enfrentaron el escrutinio de legitimidad por parte del cliente cuando seleccionaron un proveedor de computación en la nube. El cliente en este caso (Caso 1), sin embargo, fue cauteloso y consideró las amenazas competitivas del proveedor de la nube; lo que significa que los productos y servicios orientados al mercado del cliente compiten directamente con los servicios principales del proveedor de la nube. ¿Podría la legitimidad de la plataforma ser un factor fundamental en los criterios de ponderación a la hora de seleccionar plataformas digitales para la cocreación de valor de TI?

Nuestros resultados se alinean con Khanagha et al (2020) en el sentido de que un ecosistema de plataforma dominante, una empresa establecida con capacidades comerciales heredadas solo puede apoyar y complementar a los líderes de la plataforma (p. 20). El papel de un complementador puede asegurar ganancias, pero la capacidad de la empresa para explotar y maximizar el valor en comparación con los líderes de la plataforma es bastante limitada. Durante el proceso de selección de una plataforma de elección, la legitimidad de la plataforma se convierte en un componente crítico en el proceso de toma de decisiones, así como para la expansión, adopción y crecimiento de la plataforma. El proveedor de plataforma en la nube (caso 1) es, con mucho, un líder dominante y de plataforma, no un complementador, mientras que la plataforma BPM (caso 2) se considera una empresa establecida / heredada que a menudo desempeña un papel de complemento con la noción de que, con el tiempo, crean un nicho de mercado para convertirse en ese orquestador central de la plataforma digital. Entonces, ¿cómo una plataforma aspirante captura un nicho de mercado dada su legitimidad limitada? Cuando hay necesidades de usuario de clientes no satisfechas en la plataforma existente (Shah & Tripsas, 2007) y surgen nuevas oportunidades (Agarwal et al., 2017) o servicios y capacidades que no se atienden, una empresa puede aprovechar estas oportunidades para crear una plataforma que desempeñe un papel central

en el ecosistema, como orquestador de la plataforma, entregando diversas funciones y servicios. La Plataforma BPM demostró una orquestación vertical y horizontal efectiva al identificar y explotar las necesidades no satisfechas del cliente y las nuevas oportunidades de cocreación de valor. Para convertirse en el orquestador central de la plataforma, la plataforma aspirante capitalizó sus fortalezas y recursos, se centró en ofrecer valor comercial al cliente a lo largo de los procesos de cocreación de valor basados en TI. En nuestro caso, la plataforma BPM trajo capacidades únicas en torno a la gestión de procesos de negocio impulsada por IA, la automatización inteligente de procesos robóticos y la funcionalidad de desarrollo de software de código bajo / sin código. A medida que la plataforma BPM continúa abordando las necesidades, servicios y capacidades no satisfechas del cliente, la plataforma comienza a asumir un papel más de líder de plataforma y no solo un complementador en la relación de cocreación porque la plataforma demuestra y ofrece valor comercial a actores influyentes y partes interesadas clave. Como resultado, la plataforma BPM mejora su grado de legitimidad de la plataforma, vertical y horizontalmente, y en toda la empresa del cliente.

Fundamentalmente, los clientes son responsables de evaluar y seleccionar la plataforma digital "correcta" y los socios involucrados en el ciclo de vida de la cocreación de valor de TI. Sin embargo, nuestros resultados demuestran cómo los integradores de sistemas (SI) pueden desempeñar un papel crítico en el proceso de selección y toma de decisiones, especialmente cuando existe una relación comercial y de confianza establecida entre el cliente y la SI, y entre la IS y la plataforma digital. El SI, en algunos casos, se convierte en el mediador y orquestador cuando los clientes buscan plataformas digitales candidatas. Después del proceso de selección de plataformas/socios, el proceso de orquestación vertical y horizontal es quizás el más complejo debido a las múltiples partes móviles, tecnologías, actores influyentes y recursos clave de varias

empresas participantes. Como señaló Teece (2007), el proceso de innovación requiere la orquestación activa de los activos (tangibles / intangibles) por parte de los gerentes, o la noción de organización para la "orquestación". Pero la diferenciación de la plataforma o las nuevas propuestas de valor de la plataforma, como se mencionó anteriormente, son igualmente importantes. Los investigadores argumentan que la diferenciación es una forma de evitar el posicionamiento competitivo ambiguo (Cennamo & Santalo, 2013). Otros investigadores profundizan esta conversación sugiriendo que cuando los creadores de plataformas se enfrentan a desafíos de legitimidad, deben centrarse no solo en la diferenciación sino también en la conformidad en varias etapas dadas las necesidades siempre cambiantes de las partes interesadas (E. Zhao et al., 2017), y cambiar los criterios de legitimidad en el ecosistema (Rietveld & Eggers, 2018; Überbacher, 2014). En el contexto de la "orquestación" de la innovación, Teece (2018) enfatiza los procesos entre los niveles y funciones organizacionales y las organizaciones para permitir la innovación. Además, Brink (2018) sugiere que el concepto de orquestación de capacidades dinámicas desarrolladas dentro de las plataformas de innovación puede permitir que la innovación apoye la ventaja competitiva. Argumentamos que, además de la diferenciación y conformidad de la plataforma, el proceso de *orquestación vertical* y horizontal es fundamental para obtener un impulso de crecimiento de la plataforma en el cliente o a nivel de empresa, así como para crear legitimidad de plataforma dentro del ecosistema de la plataforma digital. Se hace una contribución a la literatura sobre la cocreación de valor basada en TI y las capacidades dinámicas a través de la explicación de la necesidad de una orquestación vertical / horizontal efectiva de procesos y capacidades dinámicas (Teece et al., 1997) y la cocreación de valor basada en TI (Grover y Kohli, 2012) en los ecosistemas de plataformas digitales.

Una advertencia para el crecimiento de la plataforma es que los ecosistemas tienen *cuernos de botella* (“*bottlenecks*”) (Hannah y Eisenhardt, 2018). Los cuernos de botella son "componentes que limitan el crecimiento general o el rendimiento del ecosistema debido a la mala calidad, el rendimiento débil o la escasez (Adner, 2012; Baldwin, 2015)" (Hannah & Eisenhardt, 2018, p. 3164). En nuestros casos, la Plataforma BPM resolvió múltiples cuernos de botella para resolver una plataforma estricta con una apertura limitada para interactuar e interoperar con otros sistemas internos y externos a través de API, particularmente en lo que respecta al proceso de *cointegración de la modularidad* de la plataforma. Lo que significa que debido a las deficiencias de su plataforma en torno a la interoperabilidad, la plataforma BPM invirtió mucho en ofrecer mejores capacidades de modularidad de plataforma, por lo que requiere compartir *recursos* adicionales que conducen a mayores inversiones especializadas. Las empresas que tropiezan con cuernos de botella tienen la oportunidad de reducir la restricción en la evolución del ecosistema y ralentizar el crecimiento de la plataforma. Los cuernos de botella también pueden contribuir a reducir la legitimidad de la plataforma creando una marca negativa dentro del ecosistema de la plataforma digital.

## 9.2 Limitaciones e Investigación Futura

Esta investigación se limita a dos plataformas digitales y, por lo tanto, los hallazgos no se pueden generalizar a todos los entornos. La investigación futura podría ampliar el número de casos, cubriendo un número más amplio de industrias que participan en la innovación centrada en la red y los ecosistemas de plataformas digitales.

Los estudios de investigación futuros pueden implicar explorar qué otros procesos y capacidades de cocreación de valor de TI se requieren cuando las empresas ingresan a redes de innovación para la cocreación de valor basada en TI. Ritala et al., (2009) sugieren que la capacidad de orquestación es especialmente necesaria en la creación de valor orientada al futuro, en busca de

innovación incremental y radical y nuevas oportunidades de negocio (Möller et al., 2005). Además, orquestar para la innovación es una función gerencial para establecer un nuevo camino de eficiencia, gestionando un equilibrio continuo entre los beneficios y costos de los actores que pueden variar a lo largo del camino (Busquets, 2010, p. 491).

La investigación futura puede explorar la competencia de plataformas dentro de complementadores, aspirantes a líderes de plataforma y líderes de plataformas. ¿Dónde encajan las "guerras de nubes" en este dilema? Es decir, un cliente que es un proveedor importante de nube puede no optar por invertir en una plataforma BPM porque tiene fuertes vínculos con un competidor directo de la nube, como en nuestro caso 2 de nuestra investigación.

Sobre la base de los hallazgos de este estudio, sería beneficioso analizar las interacciones a nivel individual, entre roles y actores, que participan en todo el ciclo de vida del proceso de cocreación de valor de TI, específicamente, para detallar los artefactos intercambiados y cuantificar su valor económico e intercambios.

### **9.3 Implicaciones de Gestión**

Estos conocimientos de investigación ofrecen implicaciones prácticas para los ecosistemas de plataformas digitales y las comunidades de innovación centradas en la red. Amplía nuestra comprensión de cómo las empresas cocrean valor de TI en entornos altamente colaborativos y cooperativos. Los resultados de este estudio crean un buen punto de partida para que los gerentes adquieran y combinen conocimientos para nuevas iniciativas de cocreación de valor de TI e innovación colaborativa, particularmente cuando existen dinámicas de cooperación y competencia.

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## Appendices

### 9.4 Appendix 1: Interview Questions

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#### Cocreating IT Value

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*How do firms cocreate IT value when participating in digital platforms?*

Definition of *IT value cocreation* (per the definition of *IT-based cocreation of value*)

- |  |   |
|--|---|
| (a) IT value is created and realized through actions of multiple parties   | Give me an example of how you collaborate with other companies to create a product/service which is based on digital technologies?                        |
| (b) value comes from strong collaborative relationships between firms  | What benefits have you gained from those products/services that you created together?   |
| (c) structures and incentives for parties come from strong and equitably share emergent value are necessary to sustain cocreation: | What is the level of formality necessary for realizing such collaborations? I.e., contracts, mechanisms?  |
| Four Layers: Framework for cocreating IT value (Grover & Kohli, 2012)  |   |
| Knowledge sharing  | How do you share information knowledge with your collaborators when designing and creating those products/services?                                       |
| Assets   | In that collaboration in creating a product/service, what resources (hardware and/or software) do you contribute to, and what do you receive in exchange? |
| Complementary capability   | Would you have been able to create those products/services without this type of collaboration? ( <i>Product Owner</i> )                                   |
| Governance   | Did you receive any additional/extras that were not necessarily included in the contractual agreement?  |

#### Orchestration Processes (Nambisan & Sawhney, 2011)

*How do hub firms orchestrate IT value cocreation in digital platforms?*

- |                            |  |
|----------------------------|--|
| Innovation coherence       | How did you manage the relationship with other partners in the collaboration?  |
| Innovation leverage        | What benefits do you get from the modularization the platform offers? How easy is it to build on the platform? ( <i>openness to join and exit the platform</i> ) |
| Innovation appropriability | From the initial project objectives, were there other new opportunities for innovation that were discovered?   |
| Innovation appropriability | How do you handle the intellectual property rights to the final product/service?   |
-

## 9.5 Appendix 2: Categories and subcategories Identified as Number of Occurrences in

### Data

Categories and Subcategories	Number of occurrences
Benefits for customers	25
Cloud drives innovation	38
Co-opetition	20
Customer obsessed	14
Governance	12
Knowledge assets	11
Program and project management, project management method, project duration	13
Knowledge sharing	14
Partner network and alliances	24
Q1 - Examples of collaborations	40
Q2 - Benefits from collaboration	16
Accelerate implementation	31
Access to immense value	39
Cloud ecosystem	14
Reduced costs	26
Specialized skillsets	33
Q3 - Level of formality in the collaboration	10
Contractual agreements	34
Go-to-market selling strategy	12
Innovate on the cloud	10
Platform adoption	14
Platform growth	13
Platform scalability and reliability	12
Speed to market	24
Technology choice	17
Q4 - Examples of knowledge-sharing	22
Building together	10
Continuous learning and online communities (Accelerators, workshops, blogs, training)	40
Partnership	40
Sharing best practices, New knowledge and retention	21
Q5a - Asset contribution	18
Business and technical requirements	19
Sharing sample code	15
Q5b - Asset reception	15

Architectural artefacts, proof of concepts	31
Technology integration	12
Q6 - Create products without collaboration	35
Build additional and customized functionality	12
Q7 - Additional benefits or extras	14
Status reporting and strong communication	11
Transparency and trust	28
Q8 - Manage relations with partners	31
Trust between SI and cloud vendor	28
Cocreation with internal-external partners	14
Collaboration challenges	29
Joint marketing	10
Joint planning	11
Q9a - Benefits from modularity	22
Architectural choices	25
Modularity and ease of use depends on firm size and complexity	22
Q9b - Openness to join and exit platform	16
Q9c - New discovered innovations	23
Joint innovation	11
HW and SW assets	21
Q10 - Sharing of rewards	12
Co-opetition	37
Intellectual property (IP Management and Liability protection)	39

## 9.6 Appendix 3: Codebook

Category [Selective Codes]	Open Codes   Sub codes [NVivo]	Spradley's semantic relationship	Theoretical reference	Files	References
Relation-specific Assets	Asset usage monitoring	Is a kind of / characteristic of	(Nambisan & Sawhney, 2011)	1	1
Benefits	Benefits for cloud provider	Is a kind of / characteristic of		1	1
Benefits	Benefits for customers	Is a part of / characteristic of		1	3
Benefits	Benefits of migrating to cloud	Is a part of / characteristic of		1	6
Modularity	Benefits of modularization	Is a kind of / characteristic of		1	3
Partner Network Ecosystem	Bringing new partners to project	Is a reason for, is a stage of		1	2

[Trust ?]		Is a result/cause of, is a place for		
Trust	Challenge in knowledge sharing	Is a characteristic of Is a reason for, is a stage of	1	1
Cloud Agnostic	Cloud agnostic	Is a kind of / characteristic of Is a result/cause of, is a place for	1	2
Innovation	Cloud drives innovation	Is a kind of / characteristic of Is a reason for, is a stage of	10	33
Innovation	Creating new services for customers	Is a result/cause of, is a place for Is a characteristic of	1	2
Culture	Cultural aspects		2	2
Customer-centricity	Customer obsessed		8	13
Customer-centricity	Customer problem		1	1
Digital Platform	Customer solution		1	1
Decision-making Process	Decision process		1	1
Digital Transformation	Digital transformation		3	4
Cloud Experience	Experience of cloud provider		1	1
Governance [Formal Safeguards]	Formal contracts in the project		1	1
Collaboration	Global presence enhance the relationship of collaboration		3	5
Governance	Governance		1	2
Governance	IP Management		1	1
Knowledge-sharing	Knowledge assets		1	1
Knowledge-sharing	Knowledge sharing		1	3
Cloud Agnostic	Open-source		2	3
Partner Network Ecosystem	Partner network and alliances		2	15
Governance	Program and project management		2	4
Governance	Project duration		1	1
Governance	Project management method		1	3
Collaboration	Q1 - Examples of collaborations		13	34
Customer-centricity	Business pain points and challenges		2	3
Cloud Agnostic	Vendor neutral and agnostic		2	2
Innovation Appropriability	Q10 - Sharing of rewards	(Nambisan & Sawhney, 2011)	8	12
Co-opetition	Co-opetition		8	20
Innovation Appropriability	Compensation models	(Nambisan & Sawhney, 2011)	3	3
Governance	Intellectual property	Is a reason for, is a stage of	9	22
Innovation Appropriability	Marketplaces	Is a characteristic of Is a result/cause of, is a place for Is a characteristic of	(Nambisan & Sawhney, 2011) 2	3
Benefits	Q2 - Benefits from collaboration		7	13
Benefits [Customer]	Accelerate implementation		11	29
Benefits [Customer]	Access to immense value		13	37

Benefits [Customer]	Agile development		3	6	
Benefits [Customer]	Asset reusability		4	6	
Benefits [Customer]	Cloud ecosystem		3	11	
Business Models [Innovation ?]	Creation of new business model		2	6	
Benefits [Customer]	Focus on core competencies		3	8	
Benefits [Customer]	Iterative development		5	9	
Benefits [Customer]	New sources of revenue		4	7	
Benefits [Customer]	One platform and centralization		1	1	
Benefits [Customer]	Reduced costs		6	24	
Benefits [Customer]	Sharing of customers and accounts		1	2	
Benefits [Customer]	Specialized skillsets		12	32	
Governance	Q3 - Level of formality in the collaboration		6	7	
Governance [Formal Safeguards]	Contractual agreements		14	28	
Governance [Formal Safeguards]	Customer and cloud provider contractual agreements		2	3	
Go-to-Market Strategy	Go-to-market selling strategy		3	9	
Governance [Formal Safeguards]	Liability protection		5	8	
Governance [Formal Safeguards]	No contractual agreement between SI and cloud provider		3	4	
Governance [Formal Safeguards]	Reseller agreements		1	5	
Incentives	Q3b - Incentives		3	8	
Incentives [Customer]	Best of breed		3	3	
Incentives	Competitive position		3	8	
Knowledge-sharing	Free cloud credits	Is a kind of / Is a way to Is used for	(Grover & Kohli, 2012, p. 227)	2	5
		Memo: reference to Knowledge-sharing Capacity...“Additionally, the right incentives must be in place for firms to share their proprietary knowledge for a collective good. All partners must perceive mutual value from knowledge sharing and use.”			
Incentives [Customer]	Innovate on the cloud		3	5	
Incentives [Customer]	Multi-cloud and hybrid cloud strategy		3	6	
Incentives [Cloud Provider]	Platform adoption		9	14	
Incentives [Cloud Provider]	Platform growth		8	13	
Incentives [Customer]	Platform scalability and reliability		7	11	
Decision-making Process	Professional services by cloud choice		3	8	
Benefits [Customer]	Quality of work		1	1	
Incentives [Customer]	Risk and security reduction		3	5	

Benefits [Professional Services]	Shift from cloud adoption to sales-focused		1	1
Incentives [Customer]	Speed to market		8	24
Decision-making Process	Technology choice		10	16
Knowledge-sharing	Q4 - Examples of knowledge-sharing		10	20
Knowledge-sharing	Building together		1	3
Knowledge-sharing	Continuous learning		2	6
Knowledge-sharing	Online communities		3	8
Partner Network Ecosystem	Partnership		9	35
Knowledge-sharing	Sharing best practices		3	12
Knowledge-sharing	Workshops		5	7
Relation-specific Assets	Q5a - Asset contribution		6	16
Relation-specific Assets	Big data and analytics consumption		3	5
Relation-specific Assets	Business and technical requirements		7	18
Relation-specific Assets	Cases where firms do not share IP		2	2
Relation-specific Assets	Financial business case		3	3
Relation-specific Assets	HW assets			
Relation-specific Assets	Measure asset (blog) effectiveness		2	2
Relation-specific Assets	Published blogs		5	8
Relation-specific Assets	Sharing sample code		6	11
Knowledge-sharing	Training	Is a kind of	3	7
Relation-specific Assets	Q5b - Asset reception		7	14
Relation-specific Assets	Architectural artefacts		10	24
Relation-specific Assets	Cloud service	Is a kind of / characteristic of		
Governance	Data ownership	Is a characteristic of	(Tiwana, 2013; Constantinides et al. 2018)	4 5
Benefits [Professional Services]	Increased usage of platform	Is a kind of		2 2
Benefits [Customer]	Mechanisms to monitor consumption of assets	Is a kind of		1 1
Absorptive Capacity	New knowledge and retention	Is a kind of	(Cohen and Levinthal, 1990; Grover & Kohli, 2012)	4 8
Absorptive Capacity	Proof of concepts	-Is a way to / Is used for		3 6

Modularity (Interoperability?)	Technology integration	-Is a reason for, is a stage of Is a kind of / characteristic of	(Lyytinen & Yoo, 2002; Yoo et al. 2010; Tiwana et al. 2010)	7	11
Complementary Capability	Q6 - Create products without collaboration			13	33
Benefits [Customer]	Build additional and customized functionality	Is a kind of / characteristic of		8	10
Incentives [Customer]	Q7 - Additional benefits or extras			7	14
Incentives [Customer]	Company brand is important			2	2
Governance	Regulatory requirements by country			3	8
Governance	Status reporting and strong communication			8	11
Trust	Transparency and trust	Is a result/cause of, is a place for Is a characteristic of		8	18
Innovation Leverage	Q8 - Manage relations with partners		(Nambisan & Sawhney, 2011)	10	28
Innovation Leverage	Cocreation with internal-external partners		(Nambisan & Sawhney, 2011)	1	1
Collaboration	Collaboration challenges			9	28
Governance	Defined roles and responsibilities			1	1
Innovation Appropriability	Joint marketing		(Nambisan & Sawhney, 2011)	4	5
Innovation Leverage	Joint planning		(Nambisan & Sawhney, 2011)	4	6
Trust	Legitimacy			1	1
Trust	Organizational change management issues			3	5
Trust	Strategy misalignment			2	6
Trust	Trust between SI and cloud vendor			10	18
Modularity	Q9a - Benefits from modularity		(Nambisan & Sawhney, 2011)	9	19
Modularity	Architectural choices		(Nambisan & Sawhney, 2011)	8	22
Innovation Leverage	Ease of use	“Offer a common set of technologies, tools, and other assets that partners can deploy across modules with the objective of ensuring consistent quality and enhancing the ease of module integration”	(Nambisan & Sawhney, 2011, p43)	2	2
Modularity	Modularity and ease of use depends on firm size and complexity			8	15
Modularity	Scalability			7	7

Innovation Leverage	Vendor lock-in	(Nambisan & Sawhney, 2011)	1	1
Network Openness	Q9b - Openness to join and exit platform		9	16
Innovation Appropriability	Q9c - New discovered innovations		10	20
Innovation Appropriability	Joint-innovation		3	5
Modularity	Responding to customer requests		1	2
Innovation	Scalability		1	2
Leverage; Relation-specific Assets (ITVC)	SW assets	(Nambisan & Sawhney, 2011; Grover & Kohli, 2012)	1	1

## 9.7 Appendix 4: Possible Selective Codes (Categories and Subcategories)

Possible Selective Codes	Open Codes [From NVivo]
Absorptive Capacity	New knowledge and retention Proof of concepts
Benefits	Benefits for cloud provider Benefits for customers Benefits of migrating to cloud Q2 - Benefits from collaboration
Benefits [Customer]	Accelerate implementation Access to immense value Agile development Asset reusability Cloud ecosystem Focus on core competencies Iterative development New sources of revenue One platform and centralization Reduced costs Sharing of customers and accounts Specialized skillsets Quality of work Mechanisms to monitor consumption of assets Build additional and customized functionality Shift from cloud adoption to sales-focused Increased usage of platform
Benefits [Professional Services]	Cultural aspects
Cloud Agnostic	Cloud agnostic Open-source Vendor neutral and agnostic
Cloud Experience	Experience of cloud provider
Co-opetition	Co-opetition
Collaboration	Global presence enhance the relationship of collaboration Q1 - Examples of collaborations Collaboration challenges
Complementary Capability	Governance [Formal Safeguards]
Customer-centricity	Customer obsessed Customer problem Business pain points and challenges Responding to customer requests
Decision-making Process	Decision process Professional services by cloud choice Technology choice
Digital Platform	Customer solution
Digital Transformation	Digital transformation
Go-To-Market Strategy	Go-to-market selling strategy
Governance	Governance IP Management Program and project management Project duration Project management method Intellectual property Q3 - Level of formality in the collaboration Data ownership Regulatory requirements by country Status reporting and strong communication Defined roles and responsibilities
Governance [Formal Safeguards]	Formal contracts in the project Contractual agreements Customer and cloud provider contractual agreements Liability protection

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	No contractual agreement between SI and cloud provider
Incentives	Reseller agreements Q3b - Incentives
Incentives [Cloud Provider]	Competitive position Platform adoption
Incentives [Customer]	Platform growth Best of breed Innovate on the cloud Multi-cloud and hybrid cloud strategy Platform scalability and reliability Risk and security reduction Speed to market Q7 - Additional benefits or extras
Innovation	Company brand is important Cloud drives innovation Creating new services for customers Creation of new business model
Knowledge-sharing	Knowledge assets Knowledge sharing Free cloud credits Q4 - Examples of knowledge-sharing Building together Continuous learning Online communities Sharing best practices Workshops Training
Partner Network Ecosystem	Bringing new partners to project Partner network and alliances
Relation-specific Assets	Partnership Asset usage monitoring Q5a - Asset contribution Big data and analytics consumption Business and technical requirements Cases where firms do not share IP Financial business case HW assets Measure asset (blog) effectiveness Published blogs Sharing sample code Q5b - Asset reception Architectural artefacts Cloud service SW assets
Trust	Challenge in knowledge sharing Transparency and trust Legitimacy Organizational change management issues Strategy misalignment Trust between SI and cloud vendor
Modularity	Benefits of modularization Technology integration Q9a - Benefits from modularity Architectural choices Modularity and ease of use depends on firm size and complexity Scalability Scalability
Network Openness	Q9b - Openness to join and exit platform
Innovation Leverage	Q8 - Manage relations with partners Cocreation with internal-external partners Joint planning

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Innovation Appropriability	Ease of use Vendor lock-in Q10 - Sharing of rewards Compensation models Marketplaces Joint marketing Q9c - New discovered innovations Joint-innovation
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## 9.8 Appendix 5: Paradoxes Aggregate Dimensions

GROVER & KOHLI	IT VALUE COCREATION PROCESSES	PARADOX: TENSIONS	MANAGEMENT T APPROACHES
<b>Relation-specific Assets</b>	<b>Process: Drivers</b>	<b>Technology Management</b>	<b>Technology Management</b>
Architectural artefacts Asset reusability Q5a - Asset contribution Q5b - Asset reception SW assets	Automation drivers Competitive position Cost of maintaining legacy IT Hidden tax and costs on processes Internal information security	Application modernization Application modernization roadmap Architectural choices Automation Big data and analytics consumption	Compromise > Balance Blending
<b>Knowledge-sharing Routines</b>	Manual toil New sources of revenue	Build additional and customized functionality Cases where firms do not share IP	
Challenge in knowledge sharing	Risk and security reduction	Center of excellence (COE)	
Knowledge assets	Technical debt Takes longer to build alone	Citizen developer	
Knowledge sharing	Platform ecosystem for innovation	Cloud ecosystem	
Online communities	Larger addressable market	Confidence Convergence in technologies	
Published blogs Q4 - Examples of knowledge-sharing Sharing knowledge speeds adoption	Increased usage of platform <b>Process: Selection &amp; Evaluation</b>	Customer problem	
Sharing sample code Quickstarts and end-to-end solutions Managing tension - sharing information	AI in process automation Automation is native Automation via low code no code platforms	Data ownership Digital natives don't have legacy IT Governance Independent software vendor - ISV	Multi-Level Governance
<b>Complementary Resources and Capabilities</b>	Business rules and policies for automation Company brand is important	Intellectual property	
Bringing new partners to project Customer offloading work to SI partner Partner network and alliances	Comparing platform functionality and features Decision process	IP Management Managing tension - Platform orchestration Modernize legacy systems	Defy > Challenge Defy > Challenge
Partnership relationship Program and project management	Ease of use Financial business case Global presence	Modularity/ease of use depends on firm size/complexity Multi-cloud and hybrid cloud strategy	
Project management method SaaS platform enterprise support	enhance the relationship of collab. Low-code and no-code platforms	Multi-layered platform Need to rethink old processes	Balancing

Value creation team	Platform and partner selection	Open-source	Balancing
<b>Effective Governance</b>	Platform scalability and reliability	Orchestration of multiple digital technologies	Orchestration
Contractual agreements Customer and cloud provider contractual agreements	Professional services by cloud choice	Platform adoption	
Expectation setting	SaaS platform enables automation	Platform owner orchestration	Orchestration
Formal contracts in the project	Quality of work Product's power/flexibility promotes platform adoption	Process debt	Balancing
Free cloud credits	Industry market leader Experience of cloud provider	Process improvement Q8 - Manage relations with partners Q9a - Benefits from modularity	Balancing
Liability protection No contractual agreement between SI and cloud provider	Engagement skillset and costs	Q9b - Openness to join and exit platform Resistance to upgrade SaaS platform version	
Q3 - Level of formality in the collaboration	<b>Process: Co-Designing</b>	SaaS platform limitations SaaS platform performance issues SaaS platform upgrade blockers	Compromise > Pacify Compromise > Pacify
Q3b - Incentives Regulatory requirements by country	Business and technical requirements	SaaS platform upgrades SaaS platform versioning and defects challenges	Compromise > Pacify Compromise > Bargain
Reseller agreements	Co-creation value chain Consulting scope and outcomes definition Process mapping and customer journey design	Software bugs Status reporting and strong communication	Compromise > Balance
Statement of work (SoW) Partner network governance and structure	Process re-engineering	Technology choice	
Low transaction costs	Pushback to customers	Technology integration	
<b>Coordination</b>	UI-UX	Technology roadmap and vision Tension mitigation strategy - Agile operating model/CoE Tension mitigation strategy - Exec. sponsorship and gov.	Compromise > Bargain
Co-creation with internal-external partners Defined roles and responsibilities Managing tension - Defined roles and responsibilities	Unique needs Value prioritization based on needs	Tradeoffs	Compromise > Bargain
Partnership	<b>Process: Co-Building</b>	User provisioning and access management	
<b>Cooperation</b>	Agile development	Workarounds Unclear view into platform's product roadmap	
Co-opetition	Collaborative delivery cross-functional teams	<b>Joint Actions</b>	<b>Joint Actions</b>
Continuous learning Cooperation and competition	Iterative development Tension mitigation strategy - Cross-functional teams		
Customer investments on training and resources Enabling and supporting internal customers	<b>Process: Production</b>		
	SaaS application testing Timing and alignment for project delivery		

Free training speeds platform adoption	Operationalizing a service; Operationalize products	Co-selling Complementary capabilities strengthens joint selling Go-to-market selling strategy	
Integrity and trust	<b>Process: Market &amp; Sell</b>	Internal co-selling	
Proof of concepts Responding to customer requests Tension mitigation strategy - Balancing competition	IT value co-creation lifecycle  Joint marketing	Joint planning Joint selling messaging and value proposition	
Training	Package-as-a-Service Launch field-ready kits; Sales motions	Joint-innovation Managing tension - joint selling	
Transparency and trust Trust between customer and platform Trust between SI and cloud vendor Trust between SI and customer Trust between SI and SaaS platform provider	<b>Process: Benefits &amp; Outcomes</b>	Marketplaces	
<b>Collaboration</b>	Accelerate implementation Access to immense value	Q10 - Sharing of rewards Selling as an account team Selling through social and business relationships Executive presentation	
Building together	Added value capability		<b>Business Strategy</b>
Collaboration challenges Q1 - Examples of collaborations Q2 - Benefits from collaboration Q6 - Create products without collaboration	Automation examples Benefits for cloud provider	<b>Business Strategy</b>	
Triadic collaboration	Benefits for customers	Automate or die Business pain points and challenges	
Workshops	Benefits for partners Benefits of migrating to cloud Benefits of modularization	Cloud agnostic Commitments to customers Creating new services for customers	
	Build on the cloud Business benefits - Cycle time reduction Business benefits - Operational efficiency Business benefits - Predictability Business benefits - Process tracking and monitoring Business outcomes and results Business value from SaaS upgrades	Cultural aspects  Cultural compatibility differences  Customer obsessed Customer's own internal ecosystem	
	Cloud drives innovation	Digital native	
	Cloud service Comp. advantage from specialized assets/partnerships Creation of new business model	Executive alignment	
	Customer experience	Executive sponsorship drives adoption Focus on core competencies High level value generation Invest in revenue-generating products	
	Customer solution		

Digital transformation Efficiency and productivity	Key dimensions of strong partnerships	
Employee experience	Multi-level governance	
Innovate on the cloud New knowledge and retention	Non-core competencies Organizational change management issues	
Q7 - Additional benefits or extras	Shared values SI understands the customer's business	
Q9c - New discovered innovations	Strategy misalignment Vendor neutral and agnostic	
Reduced costs	Vertically integrated leads to build vs buy	
Scalability	Escalations	
Sharing best practices Showing value through metrics	Platform growth	
Specialized skillsets	<b>Isomorphism</b>	
Speed to market Low level value generation	Imitation of digital solutions	
	<b>Platform Orchestration</b>	
	Vertically integrated leads to build vs buy	
		Multi-Level Governance A quiesce > Comply

### 9.9 Appendix 6: Paradoxes

Paradox of Business Strategy		Management Approaches	Outcomes	
Platform 1	<i>Transformational</i>	<i>Transactional</i>	<i>Balancing Strategy</i>	<i>Outcomes</i>
<b>Scenario 1</b>	<p><i>Firm B-Cloud Platform Provider—ideation in pursuit of more innovative, transformational capabilities.</i></p> <p>“So, in the context of the IoT project, [Customer] was looking at its existing customer base of providers and they were looking at how they could provide value added capability in the space of IOT to their end customers by leveraging best in class IOT service capability that its cloud platform at [Cloud Provider] could provide. And from [Cloud Provider] perspective, we were looking at it as an adoption vehicle for our service” (Partner Solutions Architect, Cloud Provider)</p>	<p><i>Firm C-Professional Services Firm—appetite from senior leadership to do more.</i></p> <p>“And I think there's always an appetite from senior leadership to do something different, do something new, do something innovative and innovation drives-innovation can be derived from that type of model where new ideas are brought, you're introducing to the customers, introducing to their businesspeople from outside of their organization. So, they're working with individuals and companies with different cultures, different ways of working different ideas. And they may challenge the way things are done, they may bring new ways of doing things. And I think that's an incentive as well to partner with other companies in that way” (Partner Business Development Manager, Professional Services)</p>	<p><i>Firm B-Cloud Platform Provider—Balancing—a strategy where there is a quarterback-like resource orchestrating everyone involved.</i></p> <p>“Ideally, you have someone assigned to that kind of collaboration. If it's like a project manager, kind of quarterback person, and they probably kick off with some sort of legal document, like a statement of work or some sort of intention. You have a communication plan, you try to stick to it, and then get the executives involved and see what they're going to do. And then working teams and going to go from there. I don't think it's too standardized on how it gets done. You know, sometimes there's a lot of folks in the kitchen type organization and sometimes there's just a lot of builders” (Solutions Architect, Cloud Provider)</p>	<p><i>Firm C-Professional Services Firm—Outcomes—a triangle of collaborators as a successful formula.</i></p> <p>“...where the customer has some business problem, it could be costs, it could be innovation, it could be a combination of those, it could be some other things that's driving a particular need to do something differently... So the customer has a need and then they would typically go to a company who would have a solution to that need... And then the third point to the triangle will be...if the customer has the skills is how do we implement this and how do we drive the outcome? And that's where a GSI [Global Services Integrator] can come into play. So, you bring those three things together and it tends to be a fairly successful formula, it's a common approach” (Partner Business Development Manager, Professional Services)</p>
<b>Scenario 1</b>	<p><i>Firm A-Product Owner—customer open to engaging with cloud provider.</i></p> <p>“[Cloud Provider] folks came to me and said, let's talk about security of [Cloud Provider]. Let's talk about the shared responsibility model. Let's talk about how to help you.</p>	<p><i>Firm A-Product Owner—establishing trust between the platform and customer before moving into transformational activity.</i></p> <p>“I think a lot of the relationships in the business world are</p>	<p><i>Firm A-Product Owner—Balancing—strong collaboration between firms involved.</i></p> <p>“...so that's where we said we going to leverage [Cloud Provider] to build our ... digital platform on top of it and we engaged [Cloud Provider] account</p>	<p><i>Firm A-Product Owner—Outcomes—measurable outcomes expressed by the customer.</i></p> <p>“And I can say that our effort was overall extremely successful, much better than in terms of overall quality, time to</p>

	<p>And I was like, wow, I didn't expect that. I figured they have millions of customers already. Was the score really that important? So, I was pleasantly surprised" (Senior Director of Information Security, Customer)</p> <p><i>Firm B-Cloud Platform Provider—helping customers innovate to open more future opportunities.</i></p> <p>"So by having a marquee logo of a customer it helps them grow their teams helps them grow the business and it helps them continue to innovate and get rid of you know. Because those are things that are complete and necessary in order to continue to serve this customer as well as future customers. And it also opens a door for other opportunities for them to do other future business with other enterprise with innovation by having a marquee logo associated with a success" (Global Enterprise Service Manager, Professional Services)</p>	<p>very common sense types. There is all these legal contractual stuff as a sort of, you know, safety net when things go really bad, if they go really bad. But otherwise, I think a lot of it is really business common sense and people are here to help each other and have Goodwill in addition to exchanging value for, you know, a cheque, right. A sum of money so to speak" (Senior Director of Information Security, Customer)</p> <p><i>Firm C-Professional Services Firm—friction between professional services and sales account teams.</i></p> <p>"So, there have been cases where they bring in professional services and the [Cloud Provider] account team is desperately pushing service A and we look and we professional services look at the problem at hand and say to the customer "actually services is not going to solve your problem". And here are the reasons why, this is not a fit, we suggest to go this other route instead, that other route may or may not involve the services that the account team is being incentivized to sell right then" (Principal Data Scientist, Professional Services)</p>	<p>team, including your team [Professional Services] basically – to actually start off this venture" (Senior Engineering Manager for Collaboration Platforms, Customer)</p> <p><i>Firm B-Cloud Platform Provider—Influencing—clarity and alignment of goals; substantial investments and support from the cloud provider.</i></p> <p>"You know we have a lot of different programs in place that help our customers. And anytime there has to be alignment of goals right where there has to be a value proposition for both for all parties. We have as far as who we call on to help our customers. That's pretty broad. We have our account team is the first line of defense...our solutions architect is always there. We understand what the customer challenges are many times as we understand things that are asked by our customers that we are unable to provide an immediate response to, we expand beyond that. We have support engineers, services teams, partner teams, partner success managers; we have professional services to deliver value from a long-term perspective" (Senior Technical Project Manager, Cloud Provider)</p>	<p>market, it runs flawlessly" (Senior Engineering Manager for Collaboration Platforms, Customer)</p>
<p><b>Platform 1</b></p> <p><b>Scenario 2</b></p>	<p><b>Transformational</b></p> <p><i>Firm B-Cloud Platform Provider—competition from within the ecosystem.</i></p>	<p><b>Transactional</b></p> <p><i>Firm C-Professional Services Firm—Ensure interoperability and</i></p>	<p><b>Balancing Strategy</b></p> <p><i>Firm C-Professional Services Firm—Compromising—Establishing NDAs and sharing IP to foster</i></p>	<p><b>Outcomes</b></p> <p><i>Firm B-Cloud Platform Provider—Outcomes—Joint solutions that are fully integrated.</i></p>

“This whole coopetition where the provider and their customer are competing, we're seeing snowflake competing with redshift, for example, or Netflix with video. And so, this is a fascinating kind of phenomena that, you know, these customers still, the provider-customer relationship that may also be competing with each other” (Partner Manager, Cloud Provider)

*Firm B-Cloud Platform Provider—pursuit of transformational initiatives due to heavy competition.*

“So, in this case, the [Data warehouse SaaS product] was a fast follower with a very good product that's actually ate away at the [Cloud Provider] market share. Right? You also have the opposite. You have companies like [SaaS search vendor] or [Open Source Database Management Software vendor]. They actually build on top of the [Cloud Provider] platform. [Cloud Provider] is all of their guys are doing really well we want to go after their business also. And then there is competition going both ways” (Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider)

*integration between platforms.*

“So, it is [Cloud Provider] when they talk to the partner, it is the responsibility to talk about how these interoperate. And there is a whole deal of IP that we share with third parties to be able to make that happen” (Partner Business Development Manager, Professional Services)

*collaboration and pursue joint transformational work.*

“And if a third party was going to do the same thing with a different cloud provider that could be a competitor of [Cloud Provider], they will have this information but of course, as partners and covered under mutual NDA's that are always in place when we work with third parties in product like a Accelerator, we ensure that everything we share is protected by that nondisclosure agreement” (Partner Business Development Manager, Professional Services)

*Firm B-Cloud Platform Provider—Balancing—through a dedicated resource, acting as the key account reinforcing the ad hoc and transformational efforts.*

“I am supposed to manage the relationship, sort of 360 degree...I'm supposed to manage everything as their key account manager...I manage any support situation with the help of the technical account managers. I manage every question around building things on [Cloud Provider]. So questions about architecture, about features, I think in an intangible way, but I think it's very valuable. I manage the relationship between [Competitor/Cloud-based Data-warehousing vendor] and our product teams, our service teams. And I say it's very valuable” (Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider)

“So here we have two independent software vendors that are partners themselves. [Cloud-based Data-warehousing Vendor] being a data warehouse usually works with a business intelligence tool like [Visualization Software Vendor]. So they're great partners. Those two technologies run on [Cloud Provider]. So what [Professional Services Firm] is trying to do is trying to explain to their prospects, to the market, the value of having a data-driven culture on the cloud” (Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider)

**Scenario 2**    *Firm B-Cloud Platform Provider—competitive*    *Firm B-Cloud Platform Provider—*    *Firm A-Product Owner—Balancing—Executive*    *Firm B-Cloud Platform Provider—Outcomes—*

*relationships that turn into competition.*

“In addition to cooperation from a partnership standpoint, there's also a lot of competition and there's a fine line between there. So that dynamic is very much real, and we call it cooptation. Especially with [Customer], that's very much there. I've also seen where companies are reluctant to engage with the partner ecosystem because they think that it's going to put them out of business” (Partner Solutions Architect, Cloud Provider)

*carefully review each other's strengths.*

“And to the extent that they can, they have discussions between each other to really understand what unique value propositions each other's capabilities bring to the table and how do we make the most of those” (Partner Solutions Architect, Cloud Provider)

*Firm B-Cloud Platform Provider—left behind if you avoid establishing alliances.*

“... in the case of [Customer], but the reality is that if you fail to do that, you are going to be left behind. That's how, that's just how businesses today are operating. And if you're beginning to realize the potential of partnerships and you were going to get left behind and supporting the, the successful company that are part of the [Cloud Provider] are the ones that have looked at our services and not as competition, but as things that they can leverage for them to then provide value added services on” (Partner Solutions Architect, Cloud Provider)

*involvement and sponsorship.*

“There is involvement from product folks on both sides. So, they're doing the engineering work so that is there. There's involvement from legal sides so that any agreements that are formed between the two parties, we need to make sure that from a legal aspect, things are clearly called out. The names of the parties have drafted the agreements and get sign offs. There are typically executive sponsors for this, right. So, you know, the event concerns come from one of the above beings that I mentioned, typically, you know, you have an executive sponsor signing off on an initiative like this. The executive sponsor could be somebody like you know, the VP of a particular service, they can do a service on our side and the VP of a particular view on their side, or it could be the VP of [Cloud Provider Partner Network] televise or somebody on our side that's sort of sponsoring the initiative” (Partner Solutions Architect, Cloud Provider)

*New cooperative-alliances; announcing a large strategic initiative with partners.*

“And the marketing side and I can jump to one example of what you mentioned, at least having three platforms or three companies get together and rallied to co-create value in the market. Just Actually, this month in January, we announced and it's an initiative driven by one of our largest focus consulting partners, [Professional Services Firm]. So [Professional Services Firm] just announced a series of events called [Marketing Event]. These are eleven events in eleven cities plus a webinar across North America, where [Professional Services Firm] is joining forces with [Cloud Provider], with [Cloud-based Data-warehousing Vendor], and with [Visualization Software Vendor] (Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider)

Platform 2	Transformational	Transactional	Balancing Strategy	Outcomes
Scenario 1	<p><i>Firm F-BPM Integration Services Firm—pushing for larger efforts but experience pushback from customer.</i></p> <p>“We understood the value proposition, we approved it in a proof of value. The client was still not buzzing. We simply went through</p>	<p><i>Firm E—BPM Platform justifying why limit the activity at the transaction level.</i></p> <p>“We already have a number of customers where we're already engaging. We're already developing real time [BPM</p>	<p><i>Firm E—Balancing—greasing the skids and getting the commercial paperwork arranged.</i></p> <p>“I spent quite a bit of time yesterday with [Program Manager, Systems Integrator] and says [Client Lead Partner, Systems Integrator] believes that if we do the</p>	<p><i>Firm F-BPM Integration Services Firm—Outcomes—resulting in situations where customers lose money if they choose transactions vs transformations.</i></p> <p>“...till we came up with an idea to update a little bit of sales motion with</p>

that motion like a thousand times with them. Everybody said yes, but nobody was willing to go ahead and sign any paperwork around it” (VP, Professional Services, System Integrator)

Platform] solution for them together... there's more to us than just real time [solution]...there is a path forward for us to really reach across the [enterprise] spectrum for joint go-to-market solutions together” (VP of Partner Alliances / ISV, BPM Platform)

discovery and get it started, [Customer] is going to be less apt to question anything by driving through the commercials first. He feels like by getting it started and on its way, it will just grease the skids for them to say yes throughout the program and get really excited about the program faster without trying to dive into all the bigger questions” (Account Executive, BPM Platform)

the messaging changed to say it's not about what you're going to get alone when you implement it. It's also about what you are missing with every single passing day that you did not make a decision and being able to throw it in their faces that they're losing close to around \$350K every single passing day that they're not making this decision. We heard it from some other organizations that that did the trick” (VP, Professional Services, System Integrator)

*Firm E—pushing back on proof of concept; why not go bigger?*

“Just one question about [System Integrator], which is relevant to the big bet, any additional insight, [Account Executive], on why they're going down this kind of proof-of-concept you guys need to invest route versus, hey, this is proven, let's go solve this together, you know?” (VP of Strategy, BPM Platform)

*Firm F—BPM Integration Services Firm—pursuing a big bet, yet customer is asking for benefit and value.*

“I was having a discussion with [Account Executive, BPM Platform], [Senior Director, System Integrator] and myself and [Director, Customer] on the big bet. And the question [Director, Customer] has asked of me is, can you get me the ROI of end-to-end orchestration which we are doing. He's [customer] telling me that, I want you guys [System Integrator] and [BPM Platform] to come and tell me what ever we're implementing for [Functional Area], how much of a benefit I'm going to get” (Program Manager, System Integrator)

*Balancing—adding specialized investments to help drive success.*

“We just got a whole cast of characters. I mean, over on our side, there are almost fifty people involved. I know there's probably 20 or 30 on your [System Integrator] side at a minimum. It's that ability to serve and align on a goal that I think drives this success in the partnership. And if you're not aligned and you're not, don't have the same core DNA, the fracturing starts happening or the failure starts happening” (Senior Director, Sales, BPM Platform)

*Firm E—Balancing—establishing alignment between all involved firms.*

“So, the other thing we've done on the big bet is, is we're working with [Director, System Integrator] and [Professional Services Director, BPM Platform] and [Partner Alliances Manager, BPM Platform] to make sure that our [System Integrator] and [BPM Platform] executives have the right alignment. [Lead Client

Partner, System Integrator] did present to [System Integrator's] president of North America this week” (Account Executive, BPM Platform)

Paradox of Technology Management		Management Approaches	Outcomes	
Platform 1	Platform Adoption	Platform Stability	Enabling & Blending Strategies	Outcomes
<b>Scenario 1</b>	<p><i>Firm D—stability issues add business risk and tension across all parties involved.</i></p> <p>“we need all eyes on glass because we're running out of runway” (Program Executive, Customer)</p>	<p><i>Firm D—platform stability and upgradeability put customers in jeopardy.</i></p> <p>“This is getting critical to the point where we're looking at all these things, some of these issues and looking at the work we're starting to line up, the first week of April, it's starting to get a little bit, we're putting work items in jeopardy, meaning, we don't have an environment upgraded, it limits our ability to do some work things that our Marketing teams is asking us for” (Senior Program Manager, Customer)</p> <p><i>Firm D—an unstable environment leads to business challenges.</i></p> <p>“And this is going to create complications for us and impact our ability to start to execute, if we continue to run into these challenges” (VP Operations, Customer)</p>	<p><i>Firm E—Blending—applying solutions and offering the latest fixes for better performance.</i></p> <p>“You're always secure. You're always getting the latest bug fixes for better performance. And all of those things minimize your downtime and maximize your ability to focus on adapting features that will drive your business.” (Marketing Director, BPM Platform)</p> <p><i>Firm E—Blending—pushing back to the customer and finding mutual solutions, win-win agreements.</i></p> <p>“Well, the way not to do that with [Customer] is to have everything lined up like, hey, here's what really happened in the upgrade, and, by the way, it really was four weeks where we stopped the other work and we did the upgrade but four weeks isn't a year.” (Account Executive, BPM Platform)</p>	<p><i>Firm E—Outcomes—the upgrade to the next platform version was a success but the teams had to overcome several challenges.</i></p> <p>“We tried to upgrade for over a year, it didn't happen, even though there were a lot of issues on the [Customer] side, we don't have the [Customer] cloud experts, and we don't have that skill set we learned as you go along. But it just has to be characterized properly, and at that point, then [Customer] can't argue. He just can't argue, because it's there on paper, here's how the time flowed.” (Services Director, BPM Platform)</p>

*Firm D—adding resources to the team to expand platform adoption.*

“we're seeking to expand into supporting other teams as well now that we do have time and now that we have more time and resources [customer]” (Technical Program Manager, Customer)

*Firm D—building a sound cloud architecture to strengthen stability.*

“The other thing is that we have the other integrations built, the long-term business as usual cost will also go down. We don't need someone to repeat the same tasks in two different locations. You don't need someone who can pull in information like process it into it, because everything can be done using the cloud. So, I think that's where you come up with advantages, you can easily quantify this depending on the ticket volume and what you're doing” (Senior Program Manager, Customer)

*Firm E—Bargaining—focusing on new capabilities and enabling the customer to find out about the newest innovations.*

“I strongly believe that they have to. I think the fact that the new bells and whistles on the reporting and dashboarding, out of the box, and the new kind of look and feel, I think that might also increase the level of adoption. And that's one of the big drivers that [customer] has on its plate. So, I think that, you know, that is one compelling case to really consider the upgrade” (Customer Success Manager, BPM Platform)

*Firm D—Outcomes—positive feedback from customers achieving high adoption.*

“We've heard overwhelmingly positive feedback and the adoption has been remarkably high. I think I thought we set very high goals from the start of 80 percent as an open rate goal and our PoC reached that within weeks. And that group has remained above 80 percent every week since June. And so I think that speaks to how much they believe in it. (Senior Loyalty Manager, Customer)

*Firm D—increasing adoption in pursuit of process improvement initiatives.*

“We are trying to improve our cycle time even more outside of just our organization and our team there are many work streams upstream that we're trying to improve as well and have using automation as you know part of our native structure. We're trying to implement that for them as well.” (Engineering Manager, Customer, Customer)

*Firm E—offering a product roadmap to customers to maintain the level of adoption based on the new innovations from the provider.*

“The [application readiness assessment] data behind it and what the outcome is, is we provide a roadmap for the

*Firm D—easily scale up and down when architected in the Cloud.*

“These are easily quantifiable numbers and more importantly, the solutions scale up. If you go from let's say you go from a thousand tickets to a thousand instances to ten thousand instances, it scales up because it's running on a robust cloud platform, it's running on a robust [BPM] platform. So that's the other value-add creation that you can think about.” (Operations Manager, Customer)

*Firm E—Bargaining—establishing a center of excellence and adding more resources and skills.*

“What if we did this in the CoE [center of excellence] and we staff two [BPM Platform] people or one [BPM Platform] or one additional [System Integrator] and we used [Program] funds. I want to find the right way to use them because it adds people without adding cost. I've been on projects were [BPM Platform's] done design reviews that were only for the partner to help the partner get stronger in front of the customer and not ever even shared with the with the customer. But to give some skill and other relief to the team on the ground, we're not blocking your current billing hours.” (Account Executive, BPM Platform)

*Firm D—Outcomes—achieving process automation goals increases adoption across the organization.*

“Our success within this application has definitely been celebrated within our team but also a number of other teams have reached out to us seeing that you know we took what used to be a very manual and toils and process that was taking up a bunch of our teammates team and now freeing them up for other opportunities” (Program Engineering Manager, Customer)

recommended path to get current. We do that engagement free of charge.” (Director Marketing, BPM Platform)

*Firm E—platform capabilities and solutions while focusing on value.*

“I just want to present to them the best way forward and not get a verbal whiplash, right? They could say, no, no. I just don't want to get a verbal whiplash from [Customer], right? (Services Director, BPM Platform).

*Firm F-BPM Integration Services Firm—ensuring customer sees value of the platform despite technical challenges.*

The system integrator iterated, “It is, right, the problem with [Customer] is, ‘I didn't see a value come out of [BPM Platform]’, and I think in their eyes, value means adoption. [Program Manager, System Integrator].

*Firm F-BPM Integration Services Firm—ensure having strong application integration.*

“So, yeah, I mean, any time I'm thinking about any integration where I think it's simple, we end up spending six months. I mean, to me, it should have been very easy to just call the REST API, but nothing is very clear once we were inside their network.” (Lead Systems Architect, System Integrator)

*Firm D—unstable environments lead to poor platform confidence.*

“We need to get unblocked or rethink this a little bit, so as I've gotten into the testing of the application, the customer service side, run into a number of issues that are preventing us from moving forward. One is just the overall performance is very, very bad compared to the existing environment.” (Senior Product Manager, Customer)

*Firm E—Blending—escalation on behalf of the platform to unblock technical issues and avoid slowing down adoption.*

“I'm working with the team on this as well. And we are escalating this. So, it is getting a lot more visibility. Give us a little bit of time to get some internal meetings when we get the right people online and let us see what we can do here” (Professional Services Director, BPM Platform)

*Firm F-BPM Integration Services Firm—Blending and Compromising—making sure that there is a balance between mandatory goals versus 'nice to haves'*

“We may not get there 100 percent, we know we will not get there 100 percent. But if we can get 70, 75 percent there and then come up with a recommendation on how that percentage could be better, they'll be happy with it. They're open to that. But us throwing [BPM Platform] and putting up our hands and saying we can't do that at all, that's what the problems are going to come in.” (Lead Business Architect, System Integrator)

*Firm E—Blending—highlighting tradeoffs between the platform's limitations and upcoming features.*

“[BPM Platform] right now has got some limitations on the

*Firm D—Outcomes—the customer perceived the sense of urgency and strong partnership from the BPM Platform as positive.*

“I think an element of preparedness. I meant that the team all showed up when we kicked this thing off. And, you know, we've had other experiences where we were the ones driving the conversation, explaining what we wanted, what we're going for. And, you know, [BPM Platform] came to the table and really did a good job driving us to where we are.” (Senior Product Manager, Customer)

*Firm E—Outcomes—increased customer lifetime value.*

“It's a great avenue for us to be able to surface some type of recommendation to get them to just stick around with us and extend that customer lifetime value. So just in terms of where we're going, utilizing and maximizing the technology that we have at our disposal through [BPM Platform] and our partners is really how we're going to get there” (Marketing Product Manager, Customer)

*Firm E—Outcomes—drive and enable their business vision and grow their revenue.*

“I mean, you guys [BPM Platform] have been adding a lot of products. You know, how do you see this as continuing to

reporting, however, on [the latest version], we believe that we can meet 70 plus percent of your requirements. So, our proposal is give us your [Customer] green light to install the [latest BPM Platform version]” (Customer Success Manager, BPM Platform)

grow that revenue stream for the organization and in making those customers more sticky.” (VP Product Development, Customer)

Paradox of Technology Management		Management Approaches	Outcomes	
Platform 2	Platform Adoption	Platform Stability	Enabling Strategy	Outcomes
Scenario 2	<p><i>Firm A-Product Owner—highlights the importance of platform stability to 'keep this going'.</i></p> <p>“If we have continuous support in quality services group from the vendor, we can keep this going. So, I think is a very essential one is you have a really good relationship and then your service provider or team really knows about your security needs. And then at the same time they dispatched the right people in then to help address your problem. And then we build, co-create this together and then we help the broader environment and people who is using it. And then at the same time come back more and they improve. So, the actual process, it's like, it's no stop, right? You just keep doing it until there's no perfection because you just got to do it better and better” (Program Manager for Architecture &amp; Security Technologies, Customer)</p> <p><i>Firm A-Product Owner—discounts are incentives that often result in higher adoption.</i></p> <p>“I mean if we have a partnership and then we</p>	<p><i>Firm C-Professional Services Firm—work closely with customers on standing up scalable solutions.</i></p> <p>“So, we want to, when we work with the customers, we want to make sure that what they implement is scalable but addresses, first of all, it addresses their needs. It's scalable, it's highly available. They have DR strategy so they can recover, but they also are implementing it according to the best practices, right, so there's no, for example security implications” Solution Architect, Professional Services)</p>	<p><i>Firm B-Cloud Platform Provider—Enabling—having someone accountable to talk about interoperability and IP-sharing.</i></p> <p>“So, it is [Cloud Provider] when they talk to the partner, it is the responsibility to talk about how these interoperate. And there is a whole deal of IP that we share with third parties to be able to make that happen” [ISV Sales and Business Development Manager, Cloud Provider].</p> <p><i>Firm B-Cloud Platform Provider—Enabling—offering free training to enable customers and speed the engagements.</i></p> <p>“And then similarly you know what we've come to find is there are certain things that will help accelerate the engagement. For example, we're giving our partners credit that will help them build a better business case in order to support our customers. So, we find different ways that we reduce the cost to them by providing credits for training. We brought training we helped them accelerate from a</p>	<p><i>Firm B-Cloud Platform Provider—Outcomes—offering choices to customers often leads to greater adoption.</i></p> <p>“But also we're providing choice, in the case of [Cloud Provider...we're all about customer choice. So, providing choices is something that I don't know if you're familiar with the concept of the flywheel effect that [Cloud Provider's Founder] kind of coined back in the day saying, if a platform offers more choice to the buyers, then he's going to attract more buyers” (Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider)</p> <p><i>Firm B-Cloud Platform Provider—Outcomes—Reduced costs for customers.</i></p> <p>“So, we can help our customers get what they need by reducing the cost for them to our partner and the value that we get is that you know obviously we don't think of the short term you know hundred thousand and two thousand million dollars here and there with our customer we think of the</p>

have an agreement in place or supposed to receive some sort of discounts is that's always an incentive for our finance to have a partner like that.” Program Manager for Architecture & Security Technologies, Customer)

knowledge perspective. We helped them create a path for migration.” (Senior Technical Program Manager, Cloud Provider)

long-term value of the lifetime value with our customer...” (Senior Technical Program Manager, Cloud Provider)

	Paradox of Information Sharing		Management Approaches	Outcomes
Platform 2	Novelty	Efficiency	Masking Strategy	Outcomes
<b>Scenario 1</b>	<p><i>Firm D—tension between firms collaborating with the customer.</i></p> <p>“No, that's not an answer. It's not his code. It's our code. That's [Customer] code. He gives it to us. I don't care. So that is the direction. I will talk to [Code Owner]. We will get the code. We will change the variables. There's ownership here. Anything I build here is [Customer] owned. So that reaction is not right. So, we'll talk.” (Technical Project Manager, Customer)</p>	<p><i>Firm D—share know-how and documentation to speed deployments.</i></p> <p>I'm assuming they have a very similar process, something that runs on [BPM Platform] and along with all the reporting and everything that we do on [Customer] can actually be packaged as a feature and given to them. We can share all the know-how and say, I know you guys are trying to do this on [BPM Platform], this is what [Customer] did. It just basically would give them all the documentation on what we did. So then that deployment becomes much quicker” (Senior Program Manager, Customer)</p>	<p><i>Firm D—Masking—maintaining things as a 'need to know basis'.</i></p> <p>“Keep things at a need-to-know basis, things that are very confidential. For instance, let's say [Customer] is expanding its services to 20 more countries, and it comes to [Cloud Provider] and says, hey, I need 20 more servers in these countries. It's very easy to put one and one together and find out what exactly what we're up to. And it might give [Competitor] some sort of competitive advantage. So, keeping things on a need-to-know basis or masking when it's probably important...and the one that's probably the most important thing, is just Trust. Build a strong relationship with your point of contact, make sure that you're trustworthy and make sure you both follow proper business ethics. It has to go both ways for things to work.” (Director Operations, Customer)</p>	
	<p><i>Firm E—there are knowledge gaps between the BPM Platform and system integrator teams, specifically at the leadership team level.</i></p> <p>“I'm still not confident that we're positioning or</p>	<p><i>Firm E—the idea of both organizations (customer and BPM Platform) joining forces and co-selling digital solutions.</i></p> <p>“So [BPM Platform industry solution], you</p>	<p><i>Firm E—Masking—sponsoring go-to-market opportunities.</i></p> <p>“We do have interest and sponsorship from the [BPM Platform] leadership side, from Sales and from Industry Market Marketing</p>	

presenting this big idea the right way. So, it would be nice to be able to triangulate what was said and how it was said” (Senior Director, Sales, BPM Platform)

know, as basically a package slice running on [Customer] cloud platform that we could jointly sell together, with our [Customer] cloud counterpart.” (Senior Director, BPM Platform)

Leadership to pursue some joint opportunities” (Senior Director, BPM Platform)

*Firm E—Masking—information sharing is often unclear given the multiple parties involved.*

“You know, I would love to know or have someone summarize what was actually said, because I got this fear that we’re not saying the right stuff based on some data points this week” (VP Strategy, BPM Platform)

*Firm E—senior product manager shared their business vision with the BPM Platform.*

“just wanted to provide additional examples of what we’re looking at in terms of our roadmap and our vision longer term. Those types of examples and what we’re going to pursue aggressively in the near term are things like voice translation to provide in-service recommendations to our front line” (Senior Product Manager, Customer)

*Firm D—sharing nonconfidential information/IP.*

There’s nothing intellectual about it, but let’s say [potential customer] wants to move to [Customer], you can just give them the actual application and show what has been done.” (Technical Program Manager, Customer)

*Firm D—Masking—sharing to a select number of developers.*

“Give them access to the people who have helped developed...like product owners on the [Customer] side, Business analysts on [System Integrator] side, and even some of the [BPM Platform] folks who helped. You give access to these people so that you understand that use cases and see whether you can tailor whatever you have built for them” (Technical Program Manager, Customer)

*Firm D—Outcomes—the collaboration and information sharing were more positive since it was a net new, novel innovation that was being carried out as a pilot/experiment program.*

“I would be remiss to say I, my team, overall had a ton of support from the [Customer] cloud team within my organization as well but there are a number of [System Integrator] business analysts and developers who definitely helped us out in the whole process. I wanted to call out [Architect, System Integrator] on my team, he has been fundamental and instrumental in making sure our program is up and running” (Program Engineering Manager, Customer)

*Firm D—a separate team which is made up of third-party consultants are resisting in sharing the code.*

“if you can change [Application] code to point to our [BPM Platform] instances or

*Firm D—the level of information sharing at the project level (more tactical) and not necessarily at an organization and enterprise-wide level.*

“Like the knowledge sharing that we have

*Firm D—Masking—avoiding explaining confidential details about an alliances opportunity.*

“I kind of hesitate to bring this up because this is only just happening last evening. But [BPM Platform’s CEO] responded back to

*Firm E—Outcomes—firms achieving a strategic alliance agreement.*

“I’m about an hour or two away from really understanding what the what the essence of [BPM Platform’s CEO]

share whatever Python code he has written, but from what I understand, I don't think he is comfortable to share that code" (Software Developer, Customer)

*Firm F—BPM Integration Services Firm—other customer team members, including contractors, not being open to sharing and collaborating with the BPM Platform and system integrator.*

"the main thing is to reuse their code for our stuff without spending much and reinventing it. But it looks like they're not OK in sharing the code and they don't have a design document that we can use here" (Application Architect, System Integrator)

*Firm E—providing sample code but limited to null intellectual property.*

"what we provide on GitHub is our run book, our Kubernetes Helme charts, and docker images. You just have to enter to download those images" (Marketing Director, BPM Platform)

*Firm D—Outcomes—an open-transparency approach often leads to higher collaboration and cooperation from the customer and integrator.*

"I will probably involve my business partner. He would be interested to see this as well. And I'll speak with [Customer] and see if there are any of the engineers would like to also be involved there. And I'll see someone from Sydney from my team I can also get involved" (Software Development Manager, Customer)

is, we share everything that the project needs to work successfully, basically things like if [BPM Platform] has to be installed on [Customer's cloud platform]. We need to share how [Customer's cloud platform] works, how we can have a successful install and how things basically work. And these are all non-proprietary information" (Technical Program Manager, Customer)

*Firm E—offering ongoing training to customers.*

"From a knowledge sharing perspective, what other things should we consider equipping you with whatever knowledge tools you need besides training academy stuff or anything else that we should be thinking about sharing with you." (Customer Success Manager, BPM Platform)

[Customer's Executive] last night and essentially said that [BPM Platform] is ready to move forward based on [Customer Executive's] prescribed path forward." (Director, Partner & Alliances, BPM Platform)

*Firm E—Masking—sharing novelty information with the account team.*

"An account executive explicates, "That's fantastic because I think it helps our team understand, you know, kind of what's going on from the top across [Customer]" (Account Executive, Customer)

*Firm E—Bargaining—an approach taken by the BPM Platform to incentivize the customer.*

"There's no nothing, no strings attached. So, it's just for you to actually drag and drop, build out an actual application, get the feel for it, and then you know that from there you can then decide how much more you want to build." (Customer Success Manager, BPM Platform)

*Firm D—Complying—a customer accepting the idea of building a new prototype on the platform.*

"I may be able to see if I can get an engineer to spend some time on this, if they can build it, if they get a trial account. See if there is a way to go to build something quick, a prototype to showcase." (Software Development Manager, Customer)

email reply is. But it did appear favorable. [BPM Platform's CEO] did mention in his email that he has spent the last week having numerous internal meetings and we are all due to regroup. It sounds like [BPM Platform's CEO] did have some productive conversations this past week [with Customer's Strategic Alliances Executives]. It looks like we may have a path forward. And what [VP Strategic Alliances, BPM Platform] and I need to get clear on is exactly what is it that we are now going to be asked to execute on as part of that." (VP Strategy, BPM Platform)

*Firm D—Outcomes—customer is open to collaborate and cooperate on new innovative efforts with the BPM Platform.*

"For me, it was a matter of going through the academy, which I found immensely helpful. And I wish I just had the time to do it, to do more of it." (Marketing Product Manager, Customer)

*Firm D—Outcomes—the result of information sharing; a senior product manager elaborated on the immense value that exists in the BPM Platform learning academy environment.*

"I'm just amazed by how much valuable information [BPM Platform] makes available. So once I had taken those courses, I felt very confident making the changes"

(Senior Product Manager, Customer)

*Firm D—Outcomes—information sharing leading to building customer confidence on the platform.*

“Once I went through the courses and invested the time, I found those sufficient for feeling comfortable and confident working in the UI” (Product Manager, Customer)

*Firm F-BPM Integration Services Firm—there cannot be any knowledge gaps and there must be full transparency in what they are trying to offer and sell to joint customers.*

“I would say to the [BPM Platform] Sales friends, please ensure that the right business value, the right business value proposition is articulated. And you can describe it. Also, on a whiteboard and you can help the [System Integrator] accounting understand that as well and make it easier for them” (VP Professional Services, System Integrator)

*Firm F-BPM Integration Services Firm—establishing close ties with the partner ecosystem of the system integrator and sharing the sales plays.*

“So, a combined sales motion, you are able to understand it, working extremely closely with the partner ecosystem, I think is extremely important. Sometimes you go in our silos, don't trust each other enough and do our own stuff that we have been doing forever, it just doesn't work anymore” (Sales Director, System Integrator)

*Firm D—Complying— the BPM Platform complies with the customer's business naming standards by customizing its functionality.*

“I think the biggest challenge there has probably just been really understanding the data, not necessarily what the data mean, but rather like what everything is called, because what it's called in [Customer] gets translated to something else, I think, in [BPM Platform], because just out of out of the box solution for PoC, I'd say that's probably the only challenge I had.” (Marketing Product Manager, Customer)

*Firm F-BPM Integration Services Firm— Complying—customizing content and functionality for the customer.*

The [BPM Platform] adoption and training and enablement, so we have decided to have those videos embedded in the release notes, which we would be doing it from the next release onwards. And we'll see the feedback from the stakeholders if they're positive enough and take it forward from there.” (Program Manager, System Integrator)

*Firm F-BPM Integration Services Firm—Outcomes—the level of trust, transparency and knowledge sharing become utterly crucial.*

“A big piece of the puzzle is proving and proving out the value and sometimes that takes a lot of time, and we are put up against competition, as in this case, we were put up against a lot of competition. But being able to believe in the proposition right from day one and sticking together irrespective of the investments to be made because we believe in what we are proposing to our customers together jointly. That is, I think, what makes it different. Those things, in my view, did the trick at other customers.” (VP, Professional Services, System Integrator)

Paradox of Information Sharing		Management Approaches	Outcomes	
Platform 1	Novelty	Efficiency	Masking Strategy	Outcomes
	<p><i>Firm A-Product Owner—level of information sharing depends on what value the data provides and its purpose.</i></p> <p>“I think again the amount of sharing goes into what value are you creating and what are you going to do with it? And clearly if there is the level of complexity and there is a level of intellectual property that's going into that you're going to make loads of money on at some point you're going to have a lot more hesitation in sharing.” (Program Manager for Architecture &amp; Security Technologies, Customer)</p>	<p><i>Firm A-Product Owner—sometimes there's no secrets, data is commoditized.</i></p> <p>So, the under NDAs and all those types of agreements that you kind of know where the boundaries of sharing lay, but in some cases, again, it's no secret. Many of these services today are being built with, you know, IaaS, PaaS and a whole bunch of open source software. All the IaaS/PaaS services are pretty well published by the providers. All the open-source software as well published yet. So, people are making money from the services they're building.” (Senior Director of Information Security, Customer)</p>	<p><i>Firm B-Cloud Platform Provider—Masking—shared internally but information is not yet public.</i></p> <p>“Of course, there are some things that are shared internally that are not necessarily public” (ISV Sales and Business Development Manager, Cloud Provider)</p> <p><i>Firm A-Product Owner—Concealing—customers also understand that the cloud provider themselves have done some of this replication from other customers.</i></p> <p>“So I don't know, maybe even if we try to pack and then you have this, we may have still been stuck in US patent discussions about should this be a patent and here it is already in multiple places. So the rate of innovation is pretty fast and on all of this. So you know, I didn't think of that enough to put any sort of specific clause on, you know.” (Senior Director of Information Security, Customer)</p>	
	<p><i>Firm A-Product Owner—information sharing is based on how unique it is and if you're going to monetized at some point.</i></p> <p>So I think there is a level of, is this value creation at a very sort of deep innovation that is very unique and a differentiator and you're going to monetize at some point. And if so, there is obviously less of sharing and more formality even if you were shared” (Senior Director of Information Security, Customer)</p>	<p><i>Firm A-Product Owner—more open to sharing when the information is about operationalizing and sharing best practices.</i></p> <p>Whereas if this is more about operationalizing a best practice that's already out there and yes, you're writing a piece of code to digitize it, it's not like you're creating a whole new intellectual property...you're still creating value by automating it, by</p>	<p><i>Firm C-Professional Services Firm—Masking—being clear on what exactly is to be shared with project's constituents.</i></p> <p>“But apart from the technology side of things, it really comes down to how open are people and how transparent are people. And that's why it is important because the overview will define what needs to be shared, how people would work together and will create a forum that people can constantly come together and be transparent</p>	

codifying it that somebody is going to get tremendous value out of it. But you know, it's not necessarily all that unique and a special sauce that nobody else is going to figure it out on their own.” (Program Manager for Architecture & Security Technologies, Customer)

*Firm A-Product Owner—information sharing depends on how innovative it is and potential for monetization.*

“I think the level of sharing is basically based on, you know, how much innovative and how much of a monetization risk maybe they are if you were to share it” (Senior Director of Information Security, Customer)

*Firm A-Product Owner—experience, knowledge and knowhow are the value that the customer expects from the cloud provider and professional services firm.*

“There's not a huge intellectual property value there perhaps, but the value is more in terms of the service itself, right? Where somebody is going to save time, save cost in trying to glue all these pieces together to create that service that you end up creating. But it's not so much of, you know, sharing problem as opposed to, you invested in it, you created that service through a bunch of public knowledge and public data that's already out there. But you know, people are still willing to pay money for that service because it saves them time and cost to some extent. And gives them some level of quality” (Senior Director of Information Security, Customer)

and share ideas” (Partner Business Development Manager, Professional Services)

*Firm B-Cloud Platform Provider—Masking—customer not willing to share, not receptive, keeping information sharing limited and secret.*

“And they need to be open to hearing the opinion that we have because there are many cases where enterprise support may go in and you know, the customer is just not receptive. I may have a phenomenal message, but if the recipient of the message is you know, not willing to listen or engage and then that idea is not going to go anywhere.” (Enterprise Support Leader, Cloud Provider)

*Firm A-Product Owner—customers realizing that the cloud provider a commercial product very similar to the one jointly*

*Firm A-Product Owner—difficult to build in isolation without some level of*

*Firm B-Cloud Platform Provider—Masking—brokering confidential conversations between the*

*Firm A-Product Owner—Outcomes—cloud provider replicating the*

*developed with the customer.*

“I feel we did some fairly innovative work and I don't want to stretch it too far by saying maybe that's what even led to creation of some of the [Cloud Provider] services, like the security hub or the, you know there's a bunch of capabilities that came from [Cloud Provider] after all the work that we had done on [Customer's SaaS Product]. Right, very similar to that where you can set guard rails, you can measure compliance and all those types of things. So, it seems like to me in some ways that maybe other customers did the same type of stuff, which [Cloud Provider] ended up in some ways productizing as a service.” (Senior Director of Information Security, Customer)

*Firm B-Cloud Platform Provider—brokering confidential conversations between partners.*

“It's something that you know, you get access to that as you become a more and more important customer.” (Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider)

*Firm B-Cloud Platform Provider—a describes information sharing nuances and dynamics between the cloud*

*sharing from the cloud provider.*

And then also enlighten us with various type of trainings, opportunities letting us know what is the latest for coming out of that platform where we can leverage and utilize and then if we are interested to go to a next step, and that's where the three of us, the three of the components can work together and deep dive, get into more discussions or even hands on to build that functionalities that we all wanted to build. And I think it's a back-and-forth benefit mutually beneficial type of relationship because not only we get to know what the best of the capabilities we can offer. At the same time, [Cloud Provider] also consumed a feedback and the use cases from our company and then they go out and then come out with even better services in the future to make the platform services as a whole. I'm serving more different type of clients. So, I think this is a very good ecosystems that we're running. Definitely you cannot achieve success without any of these components.” (Program Manager for Architecture & Security Technologies, Customer)

*Firm C-Professional Services Firm—change management and resistance issues surface in the relationship between*

*cloud provider and customer and partners.*

“So, if [SaaS Data Warehouse Platform] wants to meet with a product manager, if they want to have a conversation about roadmap under NDA, what are the things we can discuss? What are the things we can disclose to them? Then I'm part of, of you know, I'm more or less the conduit for that. And then on the go to market side. Yeah, like for instance, when I was a Partner Manager, and now through the Partner Manager, we support the creation of these Accelerators. I broker the interactions. So that can be anything from contracts procurement to them using a new service or feature to helping them navigate our annual, so everything you can think of to be honest” (Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider)

*Firm B-Cloud Platform Provider—Masking—describes sharing information on customer usage as a masking technique.*

*customer's security solution.*

“I forgot the service name, but they came out with the service very similar to [Customer SaaS Product]. It's not [Cloud Provider service name]. It was something else...but they were here to do a demo for us and we're like, hey, this is [Customer SaaS Product]. Where did you guys get the idea from? ... but to [Cloud Provider] as a whole, maybe they can come out with something similar as well.” (Program Manager for Architecture & Security Technologies, Customer)

*provider and its competitors.*

“And this is important because [Cloud Provider] will not provide the personal information of the prospects or customers who are deploying the Accelerator because we protect our customers, but we are able to provide statistics which they value for the customer, and that is information that's private, or public, but it's shared across the two parties...Those two things are ways that examples of how we share IP. Again, a lot of it goes public. There's a deployment guide, there's a template, but a couple of things go private and the couple that I can share that are not super sensitive are how [Cloud Provider] tells the ISV, hey, you need to connect to these, you need to deploy these API's. These are important for us to do monitoring and all these things.”  
(Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider)

*Firm A-Product Owner—people are the intellectual assets.*

“And a lot of times in the industry we're in you know, people are the intellectual assets and they're always going to come forward and share ideas and, you know, share more than what's written in an SOW or what is written in the contract.”  
(Senior Director of Information Security, Customer)

*the customer's resources (architects, developers) and the cloud provider and system integrator resources.*

“People can be more transparent than others. It depends on trust and relationships and executive. It's one of the key things with executive directors getting the, you know, the top-down approach. You know, there's always that element of people not sharing what they need to or being, you know, maybe worried about their jobs or exposed by something. (Partner Business Development Manager, Professional Services)

*Firm B-Cloud Platform Provider—transparency around platform costs and modularity.*

“The second thing that happens with modularity is that you understand, you as a customer understand the costs of data. You know, if your hardware vendor is selling you hardware for multiple parts of your platform, your costs are very hard to calculate. Whereas with the modularity that [Cloud Provider] offers, I know exactly what my security is costing me and that is

“So it's sort of like the plumbing that goes under the hood. And then the other thing is, we're able to provide statistics on the usage of the Accelerators.”  
(Independent Software Vendor (ISV) Sales and Business Development, Cloud Provider)

*Firm B-Cloud Platform Provider—Compliance—cloud provider complies with the rules of engagement and respects their customers, partners, and competitors' information privacy.*

But there is some, there's something very clear, which is we will never look into our customers' infrastructure. And we don't know where they're running. We don't want to know where they're running in terms of the data that's in there and the code. That is something that we have to stay out of when we always say that the only reason we will disclose the data. Some customer data is because we

independent from what my database are costing me and that's independent from what my compute is costing me. And so just having a better means to account for your spend and have the optionality to make independent decisions are probably the two big factors.”

(Enterprise Support Leader, Cloud Provider)

have some sort of order from federal agency or some of, some government institutions and it goes through legal routes too, to have [Cloud Provider] provide that information. I doubt we're never looking at that and you can think of a number of ISV's that like, another one that comes to mind because I've also worked with them is [Partner/Competitor].

[Partner/Competitor] is a \$15.6 billion valuation company that's running on [Cloud Provider]. So we, we will never look at what's on [Partner/Competitor's] infrastructure in terms of the code in terms of the data. Other than that, we can see the products they're using, of course, we can see the instances and the sizes and all that. But all that information is protected under the mutual NDA. [Cloud Provider – Independent Software Vendor (ISV) Sales and Business Development]

*Firm C-Professional Services Firm— the importance of socialization and having physical presence to foster higher level of information sharing.*

“I think that's quite important, but it adds to the cost is face to face time, I think, partly, you know, working with someone, being with them can help a lot in terms of looking him in the eye and building trust. I think that's important” (Partner Business Development Manager, Professional Services)

*Firm A-Product Owner— why physical interaction is important to build trust and key to the success of the engagement.*

*Firm B-Cloud Platform Provider— governance plays a key role in information sharing for novelty type of scenarios between firms.*

“It needs to be program managed by a senior resource program manager to ensure that, things when they do go off track, they compare with their senior peers within the customer. And have those difficult conversations, maybe a document may need to review and get back within two days or five days and to chase them up if they're not doing that and to have the management program. So, all that collaboration is

*Firm C-Professional Services Firm—Defying— professional services team defying the platform provider to protect customer's interests.*

“And in that particular case they frequently end up trusting what professional services says because they understand we have skin in the game to be using [Cloud Provider] Services, they also know that we know a lot about the services and that we know a lot behind the scenes that customer don't necessarily get access to, and so when we say "don't use that, don't go that way", we have additional weight, whereas the account team gets discounted at some extent because there presales, there not delivery, they don't have to live with actually make this stuff work, they just do proof of

*Firm A-Product Owner—Outcomes— manager refers to contractors – who are often competitors – as business partners.*

“So, actually we, even though the professional services – they are technically contractors for us, but we treated them really as partners in our project, right, so they were ... they had the flexibility to come outside our work from [Professional Services] facilities as desired and they had access to our facilities, physical facilities ... they were able to participate in our briefings, meetings, design reviews, as applicable” (Senior Engineering Manager for Collaboration Platforms, Customer)

You know, I tried to do that on all of my projects, even if it's just once or twice, and there's people from around the world coming together, bringing them all together into a room for a day and getting the most out so they will actually know each other and people. I think it deepens that. Mainly, in summary, I think the tooling is important, giving the making communication easier, but also the face-to-face time is also important.” (Senior Engineering Manager for Collaboration Platforms, Customer)

required and if it's not there, specifically the things that I mentioned, top-down, governance, these very components are not there, then the project just becomes, in my experience, it falls apart and you don't achieve what you set out to achieve.” (Partner Business Development Manager, Cloud Provider)

concept, well not even proof of concept, they just wave the hand and put in the sample cases that always come up nicely, they don't see the flaws and they're less trusted because they seem as been the mouthpiece of [Cloud Provider].” (Principal Data Scientist, Professional Services)