Ten Global Trends: A Literature Review on the Future of IT, Media and the Cultural Industries

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Abstract

This paper pretends to analyse ten global trends in the field of IT, media and cultural industries. Several consultancies and institutions, like Gartner, present every year a group of trends to follow. Nevertheless, it is not easy to find a literature review on the researchers and studies that support those trends. To cover that gap, we have selected the ten most relevant trends and the most important authors talking about them to better understand their evolution.

Factors altering the market for IT, media and the cultural industries are diverse. From changes in the demand side to social, demographic, generational and technological causes. Aspects like interactivity, customization, and low cost of the Internet along with the ubiquity of mobile devices and social media are affecting the economy. As we will discuss, this generate changes in many aspects of life.

Keywords: Trends, ICT, social networks, sharing, privacy

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0.- Introduction

During the last decade, the media and cultural sectors have confronted many changes caused by digital convergence. The transformation of printed and analogue audio and video material into binary files has made it possible for different means of transmitting information to be digitally stored in the same devices. Moreover, they can now be distributed – legally or illegally - through the same channels. This has been encouraged by compression and recommendation algorithms and underpinned by improvement of different storage and reproduction products, thanks to network effects and via an even faster network. In parallel, global trends which are changing the boundaries of industries have emerged.

This paper aims to analyse ten global trends in the fields of IT, media and cultural industries. We believe it is a good time to take stock of key research themes and summarise empirical findings. This should allow us to identify research gaps and future research directions.

In order to select these trends, we have followed the work of several consultancies and institutions (such as Gartner, which identifies the Top 10 Strategic Technology Trends for each year). This analysis was supplemented with searches in the ISI Web of Knowledge using the terms highlighted. The present literature review encompasses contributions from many fields as strategy, organisation theory, marketing, cultural economics and sociology.

Nevertheless, it is not easy to find a literature review on the researchers and studies that support these trends. The present research is therefore both timely and necessary. To cover that gap, we have selected the ten most relevant trends and the most important authors talking about them to better understand their evolution. Their complementarities will illustrate the multiple dimensions and explanatory factors of our world.

1.-Empowerment and lateral power

Much has been written about power across all disciplines. Aristoteles considered it to be an ingredient of happiness. With the arrival of means of communication the concept was permanently transformed. Yet, with their appearance, technology is not the only thing that has changed the way that power is wielded and lost. We often think that information and communication technologies (ICT) or economic changes are behind this trend, but sometimes shifts in expectations and values are just as important. Joseph Nye (2001) tells us about the transition from “hard power” to “soft power” in culture. There are three categories of “soft power”: culture, political values and foreign policies. Antonio Gramsci considered cultural hegemony to be a means of reinforcing the power of a nation state and of capitalism itself whilst Michael Foucault associates power with surveillance.

Power is the ability to direct or impede the current or future actions of other groups and individuals…it is "what we exercise over others that leads them to behave in ways they would not otherwise have behaved" (Naím, 2013:38). This definition, inspired by Robert Dahl, encompasses different ways of imposing one's will such as influence, leadership, persuasion, coercion, etc. As Ulrich Beck might say, we live a world that must manage fears.

At any rate, power is being eroded since it is becoming more and more difficult to maintain and because people have tools such as social networks and Internet that weaken it. Yet, the opposite might also be observed: Internet empowers the people. However, there are additional factors that underpin the dilution of power in all societies, thus leading to the appearance of societies with greater freedom and opportunities for their citizens. There are three reasons behind this process: "the revolution of *more*, that is characterised by the increase in and abundance of everything… ; the revolution of *mobility*, that refers to the fact that not only is there more of everything but "more" of everything (people, products, technology, money) is on the move; this is increasingly taking place and largely because it can be done at a lower cost and with a global reach, even to those locations that until recently were inaccessible; and the revolution of *mentality*, that reflects major changes in the way of thinking, expectations and aspirations that have accompanied these transformations (Naím, 2013:32).

Social change is being caused by social, cultural and economic factors. Jeremy Rifkin asserts that the traditional hierarchical organisation of economic and political power is making way for lateral power that is organised nodally in the 3rd Industrial Revolution. He states that "social networks have bloomed… creating a new distributed and collaborative space for sharing knowledge and spurring creativity and innovation across every field" (Rifkin, 2011: 165-166). Change is underway: "Societies evolve and change by deconstructing their institutions under the pressure of new power relationships and constructing new sets of institutions that allow people to live side by side without self-destroying, in spite of their contradictory interests and values" (Castells, 2007: 258).

Weber was right when he insisted that bureaucratic power is based on the power of compliance with rules and regulations. On the Internet this is the first thing that fascinates: how easy it is to bypass rules and/or create parallel systems of rules and regulations (netiquette). Parental orders, intellectual property, anonymous insults, etc. are the trolls. The rules of the so-called "Internet generation" are very different from those of past generations and are making appeals to change the world by calling for: freedom, customisation, scrutiny, integrity, collaboration, entertainment, speed and innovation (Tapscott, 2009: 74).

The Internet fosters debates between contents generated by companies, that must be commercialised in order to attempt to generate profits, and non-profit contents that only aim to achieve broad distribution. The interests and confrontations between these two approaches are very diverse (Van Dijck & Nieborg, 2009). The Web 2.0 (i.e. sharing social networks) has made a mistake by attempting to commercialise contents created by users (Jenkins, Ford & Green, 2015). "While today's media environment is characterized by tailored media products, global media conglomerates, deregulation, flexible work arrangements, casualization of the labour force, and increased consumer surveillance, these changes are extensions of earlier historical processes more than a radical break with the past" (Havens & Lotz, 2012: 199). What has changed are the participatory capabilities of users. It is true that "we are at the beginning of a revolution that is fundamentally changing the way we live, work and relate to one another" (Schwab, 2016: 13). Yet, power should involve achievement of adequate balance between large media conglomerates and the participation of people on the Internet.

In spite of technologies and lifestyles that encourage the individualisation of almost everything, new ways of belonging and community linked to the so-called "transmedia culture" are appearing. Moreover, all of this intersects with a new freedom of power to choose at each time and in each place because the decisive factor is access. The motto of this age could be "anyone, anywhere, anytime" (Álvarez-Monzoncillo, 2011), giving rise to a new empowered consumer (Fuller, Mühlbacher, Matzler & Jawecki, 2009).

This participative culture doesn't have any precedents. Young people embrace the Internet where they can find things that they love and as it allows them to self-confirm themselves. They tend to get pulled in by a magical attraction and perhaps embrace the "Californian Utopia" too quickly (Barbrook & Cameron, 2001), in contrast with critical capabilities when it comes to using mimetic reproduction models. In fact, "The cyber-utopianism updates an idea very much present in the modern revolutionary movements: overcoming the traditional community guardianship and the appearance of a type of social interaction that is simultaneously both caring and respectful of individual freedom… And promises us new digital lands, albeit perhaps too utopian" (Rendueles, 2013:121).

Traditionally, in our societies, property is power. Yet, change is also underway on that front. Sharing without owning homes, cars, computers, bicycles or energy implies the retirement of Adam Smith as Rifkin (2011) proclaims. There are some shattered dreams hiding behind the participative culture. There is a lot of criticism of "working for free due to the "cool" aura of free creative work and a confusion between what is free vs. work" (Fuchs, 2015). In the view of this author, who has a Marxist focus, the limits of the categories of industrial capitalism such as worktime/leisure time, production/distribution/consumption, office and factory/home and privacy have begun to be more

porous. The goal of capitalism is intensify and spread the exploitation of workers via dualistic characteristics of Fordist capitalism (Fuchs, 2015).

The dynamics of individualisation of the Internet and the ability to participate brought the rhetoric of empowerment and the digital revolution with them, remixed with utopias involving social change, and with other types of representation and/or democratic participation. Yet, this empowerment capability has two sides: the empowered individual and the disempowered individual. The former feels that he/she has more power because technology allows him/her to become more informed and communicate and organise him/herself better whilst the latter feels excluded and stripped of all power. It's the same old debate between the elites and the common people. There are two categories: the very active that are experiencing new ways of participating in civic life (underpinning the revival of the concept of citizenship): and those who have no influence, no organisational capabilities, and are silent.

Effectively, there are contributions concerning social networks and the public sphere that may be a bit too optimistic regarding social change and that distance themselves from the approach of the concept developed by Habermas: social networks allow all citizens to change their relationship with the public sphere (Benkler), the emergence of a new sphere 2.0 (Papacharissi), the construction of a new public sphere in the network society (Castells) and the public sphere (Burges and Green). Empowerment involves more factors than merely having access to technologies that allow for more efficient communication and greater organisational power than others (Fuchs, 2015: 315).

The digital revolution has given more power to the people. The hierarchical organisation of flows of authority and power is something that belongs to the past. Political systems are also changing to adapt to new ways of organising ourselves and of disseminating opinions. However, the new power can control or even lead to battles in order to obtain programming (Rushkoff, 2010).

2.- The business model era

Until the 1990's the term "business model" was hardly ever used (Osterwalder et al., 2005). However, this term quickly gained prominence among both practitioners and business scholars with the development of information and communication technologies (ICT) and the emergence of Internet companies. As a result, it was necessary to analyse a new set of companies that was beginning to create markets and no longer resembled traditional industries (DaSilva and Trkman, 2013). In fact, most business models are currently affected in some way by technology (Kinder, 2002).

A general definition of the concept has not emerged, but it can be said that there is agreement among scholars that a business model must link the workings inside the firm to outside elements, including the customer side, and how that value is captured or monetised (Baden-Fuller and Mangematin, 2013). In short, we can say that a business model "defines how the enterprise creates and delivers value to customers, and then converts payments received to profit" (Teece, 2010: 173). It performs two important functions: value creation and value capture (Chesbrough, 2006).

Business models answer the question "How is it being done?" and must design the organisational structures that a company needs in order to enact a commercial opportunity (Foss and Saebi, 2015). However, this is not the same as a strategy. In fact, all companies aim to put some type of business model into place, but not all companies have a strategy (DaSilva and Trkman, 2013). Strategy is about building dynamic capabilities aimed at responding efficiently to future and existing contingencies. Its purpose is to successfully compete, whilst a business model aims to create value with the effective coordination of business resources (Osterwalder et al., 2005). To wrap up, strategy "reflects what a company aims to become, while business models describe what a company really is at a given time" (DaSilva and Trkman, 2013: 383).

There isn't a unified typology of business models either (Foss and Saebi, 2015). Yet, consideration of fundamental architypes is important because of the features of market economies where there are consumer choices, transaction costs, heterogeneity amongst consumers and producers, and competition (Teece, 2010). Broadly speaking, with regards to the media, we would mention: participatory models where the contribution of users is vital for value creation; distribution models, where contents must be created and revenues generated in several ways; and editorial models, where all content is offered in exchange for payment and free offerings are a rare exception (Lyubareva, Benghozi, and Fidele, 2014).

Participatory models tend to mix, in particular, user-generated content with those from external producers. Value creation is dependent on users' contributions, so that the presence of free content is vital for the model (Anderson, 2010). Consumers have free access so that it is necessary for audiences to be sold to advertisers. Thus, companies thereby become multisided platforms that match users with advertisers (Evans and Schmalensee, 2016). As they are closely linked to advertising, they are overly dependent on economic cycles. This is the case of groups such as YouTube and Facebook. Only those users contributing more successful content receive any economic compensation, which may lead to motivational problems over the long term. Costs are, thereby, reduced by substituting consumer input for editorial decisions. Content openness, combined with sharing and peering have become the keys to the success of collective creativity (Lyubareva, Benghozi, and Fidele, 2014). However, there are multiple offerings for commercialisation of contents (streaming, downloading, desktop, mobile, etc.)

As for distribution models, they tend to target a precise market segment and develop original contents in-house. However, they also purchase contents in the market that they cannot or do not want to create. They use several channels to generate revenues, such as public funding, donations, advertising, direct sales and/or subscriptions. These sources can be mixed in different proportions. In the case of usage of advertising for financing, they also become multisided platforms. They utilise multiple distribution channels to reach their consumers and must control final monetisation with them. Free-to-air TV, a free online newspaper, or a newspaper that puts a paywall into place are some of the options within this general model.

Finally, editorial models tend to be based on contents from external professional suppliers (although they may also have a small amount of in-house production). All content is offered in exchange for payment and there are normally mechanisms in place to restrict usage (DRM or similar). These companies must control the quality of contents and tend to structure price discrimination. Pay-TV functions under this model.

Managers seeking to outperform their competitors should to focus on: choosing the right business model; implementing it as best as they can; improving the company's dynamics capabilities; and engaging in business model change when an opportunity or threat arises (DaSilva and Trkman, 2013: 383).

The business model concept is gaining traction in different disciplines but it is criticised for being vague and lacking theoretical foundations (Zott et al., 2011). Nevertheless, business models can be used to categorise the corporate world and explore the economic possibilities offered by different architypes.

3.- Mainstream, niche markets and globalisation

The disruption of Internet has underpinned an economic crisis that endangers the very survival of mass communication media which triumphed in the XX century in all countries. However, change has moved us towards the so-called "matrix era" that is "characterised by interactive exchanges, multiple sites of productivity, and diverse modes of interpretation and use" (Curtin, 2009: 13). While today´s media environment is "characterised by tailored media products, global multimedia conglomerates, deregulation, flexible work arrangements, casualization of the labour force, and increased consumer surveillance, these changes are extensions of earlier historical processes rather than a radical break with the past. Moreover, these changes are fundamentally tied to economic change, not to technological changes such as the growth of Internet access and digitisation, though these changes certainly helped facilitate the economic changes we are witnessing" (Havens & Lotz, 2012:199). The concept of television

is transforming towards new forms and concepts such as OTT and TV-like services, between linear and non-linear (Ala-Fossi, 2016).

The power of large conglomerates dominated the XX century (Holt, 2011; Kunz, 2007). Their dominance has continued into the present even though the Internet is threatening the status quo (Álvarez-Monzoncillo & López-Villanueva, 2014). They imposed their domination around the world. Cultural imperialism appeared. It is a concept that "refers most broadly to the exercise of domination in cultural relationships in which the values, practices, and meanings of a powerful foreign culture are imposed upon one or more native cultures" (Tomlinson, 1991). Research from various different points of view has been written on this topic (Chen & Morley, 2006; Chomsky, 2010; Golding & Harris, 1996; Mattelart, 1995; McChesney, 2001; Morley, 2006; Schiller, 1971, Tomlinson, 1991 and Wasko, 2013). This concept and related theories have surged on the back of globalisation and the rise of the Internet.

Yet, these changes in the media follow certain trends. Changes that call for the reform of their business models and social roles (Freedman, Obar & McChesney, 2016). These trends have also been reinforced by neoliberalism and, as a result, there has been a return of the State and/or the need for new regulations (Flew, Iosifidis & Steemers, 2016; Simpson, Puppis & Van den Bulck, 2016). Other future new consequences are also foreseen: "great fragmentation, cheaper and cheaper production costs, the development of business models based on spatial rather than temporal distribution windows, and increasing surveillance of users to counter problems of fragmentation" (Havens & Lotz, 2012: 222).

However, Internet also offers opportunities for distributing and accessing most audiovisual products, and the vast number of Net-enabled devices now available has transformed the audiovisual industry of the analogue era. The old status quo has been profoundly re-structured. Those who own content want to distribute it directly to avoid paying an intermediary. Those who transport it on telecommunications networks want to obtain it to vertically integrate their activities and undermine net neutrality. "The big Internet players (Google, Amazon, Yahoo, iTunes, etc.) want more power and to defend their leading positions. It is a war between the multimedia convergence players. However, the emerging value chain looks unlikely to generate much revenue, and cannibalisation is still progressively questioning the analogue model with its barriers to entry and walled gardens. Meanwhile, audiences are fragmenting and new multi-device consumers are fickle and demand greater participation" (Álvarez-Monzoncillo, 2011:195).

Whatever the case may be, it is yet to be seen who will control mainstream global entertainment versus regional blocks such as Europe, India, Latin America and China. This sector is controlled by North American companies which have adapted to new situations and continue to increase their exports. We

are witnessing the dominance of "hip capitalism, a new advanced global cultural capitalism, at the same time both highly concentrated and very decentralised… that is constantly transforming, permanently adapting, as the creative industries are no longer factories like the studios of Hollywood's Golden Age, but rather production networks comprised of hundreds of small emerging companies… whose results are increasingly asymmetrical North-South exchanges and increasingly unequal South-South exchanges among emerging and disadvantaged countries, yet still dominated by an increasingly powerful country" (Martel, 2010: 419).

This author foresees the on-going dominance of North American entertainment and culture in the present century in spite of substantial fragmentation and the appearance of new market niches, reinforced by the Internet. We would also bear in mind that we have observed the slight emergence of the Asian continent (Curtin & Shah, 2010). Transmedia cultural is being born and "glocal" strategies (global mainstream with local culture) are here to stay. Moreover, it is still too soon to predict the death of the mass media of the XX century. The Long Tail theory does not appear to have held true in a market that is still dominated by hits (Elberse, 2013).

In short, the trends seem evident. Firstly, the dominance of the large North American conglomerates of the entertainment industry should be similar to that of the XX century in the upcoming decades. The rest of the industry will hardly exit their regions or zones of influence (e.g. the European Union) or linguistic areas (e.g. Spanish). Secondly, it doesn't look like we are set to face the end of the "couch-potato" model. Long live television! Nevertheless, the former model co-exists with new *à la carte* consumption because users want to choose. The slogan "anyone, anytime, anywhere" on different platforms and devices is an indisputable fact. As a result, audiences are fragmenting. Thirdly, user-generated-content (UGC) will be very important and there will be conflicts between companies and users when it comes to monetising these contents. Fourthly, personal information and data analysis will determine new uses and marketing strategies of the media and entertainment industry. Lastly, the market will continue to be dominated by blockbusters whilst niche products should register slower growth than expected with the development of the Internet and globalisation.

4. Privacy and security: personal information as a commodity

Orwell's prophecy in *1984* doesn't seem too far out. In all types of societies and systems different forms of control have existed. Power doesn't exist without control. Deleuze introduced the concept of a "control society" in 1990's. Beck's concept of a risk society doesn't seem too far out either (Beck, 1998). Currently, people share personal information and, thereby, create a digital identity. Some people manage this process and others don't but, in general, the basis is the control of social relationships. With the boom

of social relationships carried out via electronic devices, personal information has become a business that is on the rise.

Whilst companies and states are collecting information regarding people in order to design strategies and guarantee security within a global scenario, data protection and privacy are being demanded as inalienable rights. Cibercontrol is intimately related to the information society and the transparency of relationships.

Moreover, surveillance is carried out automatically and anonymously. “Likes” are converted into business whilst automatic calculations track on-line activities in order to identify and gain knowledge about profiles that are later used to make marketing decisions. As a result, “digital industrialism turns users and their personal data into a new commodity” (Rushkoff, 2016).

With the proliferation of connected devices, social networks and the so-called “Internet of Things” (IoT) private lives tend to be diluted. This trend is reinforced by implants of chips or devices allowing for geolocalisation. As a result, “Videosurveillance linked to a database allows for computer analysis of behaviour. Multiple digital technology applications make available a massive amount of information regarding people, whilst there are an increasing number of procedures for usage of this data. Virtual oceans of data are the object of all kinds of treatment in unknown and inaccessible places. The miniaturisation and the dematerialisation of IT hardware increases the invisibility of surveillance. The current state of IT in the cloud leads to thoughts of dematerialised information technologies, where applications and data are consulted remotely without the need for any local infrastructure (Mattelart & Vitalis, 2014: 197).

Thus, the “panopticon” model – a place from which everything can be seen – conceived by Benthan, and Foucault’s research regarding the balance of power between the watched and the watchman, is making way for the post-panopticon model proposed by Bauman when he states that “Liquid Surveillance” is less a complete way of specifying surveillance and more an orientation, a way of situating surveillance developments in the fluid and unsettling modernity of today (Bauman & Lyon, 2013: 10). This model not only involves surveillance since “forms of control that group together very different perspectives have appeared. Not only do they have an obvious connection with the idea of imprisonment, but rather they also frequently share characteristics of flexibility, fun and entertainment, and consumption” (Bauman & Lyon, 2013: 13). This concept is quite aberrant if we think that whilst a person is playing and having fun information can be obtained that will allow his/her preferences and potential behaviour to be predicted.

Technology allow allows for “inverse surveillance”. The watcher watches over the watchman. Steve Mann invented the word “*sousveillance*” or surveillance from below (mentioned by Mattelart & Vitalis, 2014: 205). These authors develop Siva Vaidhyanathan’s theory of the “*Nonopticon*” model that is characterised by not knowing who is watched and who is watching, nor with what level of indiscretion. It appears to be the perfect situation for both parties.

It is this hiding of surveillance that is making young people extremely and unknowingly vulnerable as personal histories are being created and may turn out to be very interesting for a lot of intermediaries that will, thereby, be able to monetise their digital fingerprints. These entities know what young people are looking for on the Internet, what they share, what they exchange and what they like. All of this is underpinned by the so-called “selfiemania.” Thus, “selfies” can be considered a metaphor of the “humanised network” with people aiming to pursue fame within a social network. They are, simultaneously, inputs demanding a certain level of interactivity with other interlocutors who can make future comments. Additionally, they are susceptible to becoming “viral images” as an ordinary event of a personal and, to some extent, quite private nature, may end up becoming a viral prototype: exteriorising certain intimacies and fragmenting or transcending filters in order to expand towards other circuits and networks for which they weren’t initially intended. (Gómez-Alonso, 2016: 20).

In short, they are watched narcissists. Moreover, Instagram can be considered an application used to create “personal brands.” We are our own agents. The contraposition between “advertising oneself” and the inevitable medium such as defined by Michael Moritz, Chairman of Sequoia, as “the personal revolution” (Keen, 2016: 150). We are facing a narcissistic epidemic that Richard Brooks calls “expressive individualism”. Instagram is not the only social media that has crossed the line of narcissism, “Twitter, Tumblr, Facebook and the other social networks, apps and platforms that feed our vane “selfiecentric” illusions in the middle of an apparently infinite hall of mirrors have also done so” (Keen, 2016: 153).

Narcissism and surveillance seem to understand each other. The idea of sharing your state of mind via photos and/or what you are thinking at any moment in time feeds this need to socialise. And there are companies that are willing to pay and charge for this information. They know you better and know what you want. It’s the dream of any salesperson and without any intermediaries. It is a new scenario where either you programme or they programme you (Rusfkoff, 2010).

5.- Talent and Labour

The impact of the Internet and the digital economy (Tapscott, 1997) on the job market has been studied from several perspectives (Mesenbourg, 2001). Being a disruptive technology the displacement of employees began at the very beginning. Traditional industries based on information like media, music, film, television or games were the first to suffer the consequences. These effects went unnoticed due to the sharp economic growth that was generated at the same time in the global economy. Maybe knowledge workers were not as predicted (Drucker, 1959): "the most valuable asset of a 21st-century institution (whether business or non-business)".

Nevertheless, the problem of productivity and technology (Brynjolfsson & McAfee, 2011) can be contrasted with the vision of how "the provision of free labour is a fundamental moment in the creation of value in the digital economies" (Terranova, 2000: 36). Some others considered that "the problem of quantifying the value of knowledge makes it difficult to solve the dilemma of whether the Internet has created or destroyed the labour market" (Álvarez-Monzoncillo; Suárez-Bilbao & De Haro, 2016). Whilst it is clear that "machines are substituting for more types of human labour than ever before" (Brynjolfsson, McAfee & Spence., 2014) and robots are taking over, we cannot take for granted what a Toyota manager explained: "Robots don't make suggestions." (Pine, Victor & Boynton, 1993).

Marc Andreessen, Netscape founder and investor in technology, stated that "software is eating the world" mainly turning the labour market into a hollow trench where "the spread of computers and the Internet will put jobs in two categories: People who tell computers what to do, and people who are told by computers what to do". More and more new companies are created based on software searching to disrupt the traditional models. Many of them are helped by incubators like the "Y Combinator" (Ross, 2011), where in 3 months no more than 3 founders, mostly software developers or hackers, create for the Demo Day a prototype and raise money to grow start-ups that are reshaping the business world, like Dropbox or AirBnB.

The value chain has been turned upside down. "Companies no longer design, make and then sell products; instead, companies will sell capabilities, get orders, and then fulfil these requests. Consequently, their success will depend very much on the ability to manage knowledge" (Tseng & Piller; 2011:10). This requires a new type of worker as "Gone are the days of the traditional 9-to-5. We're entering a new era of work - project-based, independent, exciting, potentially risky, and rich with opportunities" (Horowitz; & Rosati, 2014). Not only are new skills needed but also life in general will be completely adapted to the new competitive and social environment.

The impact of robots on professions will affect not only the ones previously commented but also healthcare services (diagnostics or triage are better with machines), education (MOOCs), religion (apps

with access to whole sacred texts, virtual reality to pray and pilgrimage), law (ODR, online dispute resolutions) and more (Susskind & Susskind, 2015).

More and more the labour market is going global. Unemployment is rising and "work for life" is no longer a goal for young people. Talent management and development is key for competition.

6.- At the doors of the Fourth Industrial Revolution

The global industrial map has become increasingly complicated over the last forty years with major reconfigurations, both qualitative and quantitative, of former ways of manufacturing, distribution and consumption (Dicken, 2011: 14). Direct foreign investment, outsourcing, delocalisation and cross-border trade have risen substantially throughout this period.

All of the above has been supported by: an increase in industrial capacities of developing countries and the improvement of their institutions; lower transportation costs; finalisation of the cold war and the rise of market systems; lower customs tariffs, and new information and the communication technologies (ITCs) allowing for integration of remote activities (Mankiw & Swagel, 2006: 1053). This has created the dichotomy of a shrinking world by connecting regions that were historically distant but that, at the same time, is getting bigger due to expansion of trade horizons (Osterhammel & Petersson, 2003: 3).

Thanks to these driving forces, companies have been able, gradually, to slice up and relocate their supply and distribution chains. This has given rise to fragmented and disperse industrial activities from a geographic point of view, but integrated from an economic point of view. The division of labour has, thereby, reached a new dimension as work has been disaggregated into a greater number of activities in different places with complex connections. This unbundling has transformed the global economy in different ways under a process that is still on-going (Baldwin, 2012: 7).

There are three constraints that hold back the globalisation of markets: the costs of moving goods, ideas and people (Baldwin, 2016: 8). In the pre-globalisation world, all of them were bundled together to such an extent that the world economy was "a patchwork of village-level economies" (Baldwin, 2016: 4). The First Industrial Revolution allowed the costs of transporting physical goods to decline, thanks to the steamship and the railway. This process, which began around 1820, made the separation of production and consumption - globalisation's first unbundling - possible. The Second Industrial Revolution, with technologies such as the telegraph, electricity and assembly lines, accelerated the dynamics of this trend at the end of the XIX century. From 1990, ITCs radically drove down the costs of moving ideas. This

second unbundling process underpinned the international separation of factories via a global value chain revolution.

Since the 1970's we have witnessed the deindustrialisation of the West and the industrialisation of the so-called "emerging countries", with China at the top of the list. This has reduced the divergence of revenues between hemispheres that had been taking place since the First Industrial Revolution, allowing for new patterns of consumption in emerging countries thanks to their rapid economic growth. Thirdly, countries are now able to industrialise by joining these new supply chains and they don't need to build up a broad industrial base in order to be competitive anymore. Finally, trade is no longer limited to final goods crossing borders but rather the weight of intermediate goods or products in the process of being manufacturing is rising. In fact, currently, nearly 80% of global trade involves networks coordinated by large companies (UNTACD, 2013: 135). Moreover, international investments in factories, technologies, training, marketing and intellectual property are intertwined. All of this process is underpinned by services that coordinate this dispersion such as telecommunications, the Internet, express couriers, and container ships.

Major development of ICTs has led some authors to talk about a Third Industrial Revolution (for example, Freeman & Louça, 2002: 301). These technologies are increasingly powerful, multifunctional and online, although in recent times it doesn't look like they have managed to generate substantial productivity improvements. The great influence that they had on the most tedious administrative tasks finalised in the 1980's and in the new century innovations have focused on entertainment and communication products which are increasingly smaller and more intelligent but don't spur changes in labour productivity or lifestyles to the contrary of the effects of electricity and the automobile in their day (Gordon, 2016).

Digital and physical worlds are forecast to become inseparable in the Fourth Industrial Revolution (Brynjolfsson & McAfee, 2014; Schwab, 2017). 3D printing, DNA Films, gene editing, robotics, artificial intelligence, the Internet of Things and many more emerging trends could form an unparalleled melding of physical, biological and digital worlds (Schwab, 2017). According to Brynjolfsson & McAfee (2014) whole categories of work will be transformed by the power of computing and the impact of robots.

The present clearly offers a resurgence of automation anxiety, but the basic fact that is often forgotten is that technology eliminates jobs, not work (Autor, 2015). In fact, we tend "to overstate the extent of machine substitution for human labour and ignore the strong complementarities between automation and labour that increase productivity, raise earnings, and augment demand for labour" (Autor, 2015).

Moreover, in the case that human labour was rendered superfluous by automation, the great economic problem that we would face would involve the distribution of everything produced rather than scarcity.

A technology (or the artefact to which it gives rise) has no power in and of itself, it does nothing. Only in combination with people and social structures can technologies meet their goals. In other words, we are not dealing with technology *per se* but rather with technology within a certain context. As always, the social and the technological must be combined.

7.- The complex boundaries of sharing

The word that describes our participation in social networks, and which has quite a nice ring to it, is sharing. This word seems to imply notions of equality, giving, collaborative consumption and sustainability. However, the concept of sharing is an undertheorized one and includes several differing logics between which it is necessary to make a distinction (John, 2012).

Generally speaking, we can make a distinction between two types of acts within the concept of sharing: distribution and communication. The act of sharing is one of concrete distribution when we physically divide something up between several recipients. In this case, it would be a zero-sum game: like when a child shares a candy bar and ends up with less, as governed by cultural norms (John, 2013). There can also be concrete sharing situations where the product doesn't run out, such as when a dorm room is shared or photos, movies and/or links are circulated. Finally, there is abstract distribution – in a way that is not a zero-sum game – when we have something in common with others (e.g. a belief can be shared between people). Sharing can also be an act of communication, such as when we talk about sharing our emotions or when we update our Facebook status (John, 2013).

Sharing material things tends to require some form of sacrifice on the part of the person sharing whilst with immaterial things nothing is reduced. However, there may be infringement of intellectual property rights of a third party, thereby reducing his/her potential revenues. In the pre-digital age sharing was always mutual, social and based on the principle of reciprocity (Wittel, 2011).

The sharing of digital things does not involve any sacrifice, as there does not tend to be any rivalry or exclusion. Under this scenario, there is an extension of ownership rather than a transfer of ownership. Moreover, transaction and transportation costs are minimal (Henten & Windekilde, 2016), which may allow for a global reach. Often, on the Internet, distribution and communication go hand-in-hand: if we share photos of a trip we are communicating our lifestyle. Nevertheless, while digital contents may be dematerialised, limitless and with zero marginal costs of use (Rifkin, 2014), they are still closely coupled

with tangible products and the resources that make them possible (such as electricity, servers or bandwidth) are limited (Kennedy, 2015).

Within this "maze of terms" (Belk, 2014) it is difficult to discern where sharing ends and commerce begins. Money transforms the sharing transaction into a commodity exchange. The sharing economy concept is said to build on the concept of collaborative consumption (Hamari, Sjöklint, & Ukkonen, 2013). Nevertheless, the concept of collaborative consumption, as it was first put forward by Felson & Spaeth (1978), had a different meaning, namely, "events in which one or more persons consume economic goods or services in the process of engaging in joint activities". The examples were "drinking beer with friends, eating meals with relatives, etc." (Felson & Spaeth, 1978). Actually, there is great dissonance between the sharing that many Internet companies claim to do and reality: they are "attention merchants" that sell our data (Wu, 2016) whilst they exploit the free work carried out by users of these platforms.

The sharing economy is an "economy in which the rental contract supersedes outright ownership transfer under a private property rights system" (Tsui, 2016: 80). There are sharing economies of production – Java, Linux or Wikipedia – (Benkler, 2006; Lessig 2006; Tapscott & Williams, 2006) and sharing economies of consumption – such as Majorna, a small-scale neighbourhood-based car sharing entity in Göterbor, Sweden, with no employees – (Belk, 2014). Paradoxically, in its purest state, the sharing economy would be more of an "anti-economy" than any economy at all. This reflects the fact that there are practices that cannot ultimately be economised, which leads to their disappearance or to the conversion of this sharing into an exchange (Sützl, 2014).

In order to have a clearer view of the phenomenon of sharing and separate it from digital markets that pretend to be part of this trend, we would bear in mind that the ownership of consumer goods can take two basic forms: they can be owned individually or conjointly. It is also necessary to differentiate the motivations for owning specific consumer goods. These can be pecuniary and non-pecuniary. This is the approach of Maurie J. Cohen (2017) and with the juxtaposition of these two ownership features (type and motivation) we can distinguish four archetypes (refer to Table 1).

Table 1
Provisioning archetypes

		Ownership motivation	
		Pecuniary	
Ownership Type		4 Brokered Microentrepreneurship (Micro-entrepreneurs working for Uber...)	3 Serialized rental (Avis, Zipcar, Airbnb...)
		Individual	***Conjoint***
		1	2

	Private ownership/usership (the owner decides)	Communitarian provisioning (Majorna club, distribution of photos, links…)
	Non-pecuniary	

Source: Own elaboration based on Cohen (2017)

Quadrant 1 encompasses those goods that that are not owned for pecuniary reasons and are private property, such as an automobile that is not used to generate any kind of revenues. In this case sharing of distribution is possible if so desired by the owner since all goods are potentially shareable (Wittel, 2011). In Quadrant 2, consumer goods are deployed for non-pecuniary purposes. This would be the case of: Majorna sharing club; the distribution of photos, links, and videos by users of a platform, even though they are not the owners of the rights; fraternal organisations; or public transportation. These are cases of pure sharing. As for Quadrant 3, it represents serialised rental such as Avis, Zipcar or AirBnb. In this category, we also find large Internet companies such as Facebook or Google, which connect users from Quadrant 2 with advertisers. Finally, Quadrant 4 contains micro-entrepreneurs that use their automobiles to transport others. Yet, in this case there are pecuniary reasons and there are more and more digital platforms for bringing together users and service providers. In other words, the upper quadrants can end up becoming classic commercial exchanges.

The Internet has opened up many new possibilities for sharing and commodity exchange, to the point that there has even been a "war on sharing" (Aigran, 2012) by many industries that have seen their business models collapse. Nevertheless, minimal true sharing seems to be taking place but rather the majority corresponds to new business models. Sharing is a major force that that has been strengthened by the Internet but does not create a new social organisation system, does not reduce the expenditure of resources, does not foster economic stability and does not increase diversity.

8.- Mobility

Human computer interaction suffered an inflexion point with the spread of mobile computing. What began as an increase in dedicated hardware and networks turned into a business of devices and software (apps) via online digital shops. The mobile world is changing the way we socialise, create and manufacture goods. In the last decade of the previous century telco companies focused on voice services, with the advent of smartphones and the disruption in the category created by iPhones (Volgestein, 2008). Precursors of the Internet of things (IoT) and creators of the need for Big Data systems, we could not have created an "anywhere, anyhow, anytime" world without them.

Understanding that the "Internet of Things refers to the networked interconnection of everyday objects, which are often equipped with ubiquitous intelligence" (Xia, Yang, Wang & Vinel., 2012: 1101) we can see how the increase in connected nodes has led to an increase in the volume, speed and variety of data needed to understand the world today. Intelligence, that was traditionally held and controlled in the

network, is now moving towards the nodes. This shift in power has an influence in all aspects of current life, from social to economic to demographic. Even the legal system is struggling to keep up the pace with the current situation (Weber, 2010). The possibility of Machine-To-Machine environments can create data monopolies (Holler, Tsiatsis, Mulligan, Avesand, Karnouskos & Boyle, 2014) that may change the way companies and countries compete in the future. IoT is also a driver of the creation of wearables (Wei, 2014), that has moved from devices with one main function to those with multifunctional capabilities that generate a higher amount of personal data for an industry. Regardless of divergent forecasts carried out by interested parties this is "typical when industries are in their relative infancies and hypergrowth mode" (Wei, 2014: 53).

Another relevant impact of mobility is mass customisation, that can be defined as "developing, producing, marketing, and delivering affordable goods and services with enough variety and customisation that nearly everyone finds exactly what they want" (Pine, 1993). Tseng & Jiao (2001, p. 685) updated this definition as "producing goods and services to meet individual customer's needs with near mass production efficiency". The idea of producing where we need the goods is not new. Nevertheless, ICTs brought this possibility closer than ever. Anderson (2013) explains how a new generation of "DIYers" (Do-It-Yourself) may find all the information they need in communities of co-creation, while manufacturing locally with 3D printers.

This manufacturing system is also creating great value for traditional companies. GE has created an engine with 3D printing with several advantages. The first one is that the previous traditional version needed several components, to be manufactured in different places and then combined (Ford, 2016:173). This system reduces the cost, time and probability of errors. In addition, the weight of the final engine is also reduced, which has great implications for lowering costs of fuel usage and, consequently, leading to cleaner operations. In the end "Mass customisation and customer integration create a customer centric enterprise system that transcends the traditional manufacturing enterprise" (Tseng & Piller, 2011:10). Anywhere, anyhow, anytime at its best.

The credit for coining the term "Big Data" is given to John R. Mashey due to a presentation made in April 1998 titled "Big Data ... and the Next Wave of InfraStress". How should we deal with this huge amount of data that is now diverse, in greater volumes than ever before and created in real time? Social Media moguls like Facebook leveraged on the problem that "Businesses are creating more data than they know what to do with" (McAfee, Brynjolfsson, Davenport, Patil & Barton 2012: 59). The time we dedicate today to traditional media is split between Social Media companies, mobile devices and companies like Google that have created new services in order to solve this huge content problem.

The next step in the process is the autonomous car, a source of personal data but also a change in “The Machine that Changed the World” (Womack, Jones & Roos, 1991). It should lead to fewer accidents, better usage of cars, and a cleaner environment. The impact will be more than just on the automotive industry but rather, certainly, there are again unexpected changes in economics and labour to come (Ford, 2016).

9.- Social Revolutions

In the web’s beginnings, "content creators were few in Web 1.0 with the vast majority of users simply acting as consumers of content." (Comode and Krishnamurthy, 2008). The advent of Web 2.0 increased interactivity, interoperability and usability for end users, who began to participate and produce user generated content (UGC). This concept was coined in the XX century (DiNucci, 1999) but popularised by Tim O’Reilly and Dale Dougherty after a conference in 2004. The idea of the Internet as a more user-friendly platform brought a brand-new world of contents and interaction.

Search was mandatory to navigate through growing volumes of contents, bloggers proliferated, and syndication of contents permanently changed the media world. The SEO became the new religion of publishers and the cost per click its exchange coin. Wikipedia’s success demonstrated how collaborative business models were set to become the new normal (de Haro, Cereijo, 2016), not only for technical projects (like Linux) but also for content ones. The impact of mass collaboration, thought to be disruptive for coding and content businesses, is now affecting several others, such as mining: e.g. GoldCorp in Canada was facing a severe drop in production which it solved via collaborative methods (Tapscott, Williams, 2008).

The Amazon Mechanical Turk was an online platform on which employers could post “Human Intelligence Tasks” (HITs) to be selected by *prosumers* (Toffler 1980) who performed only their preferred knowledge tasks at their homes, submitted results, and then got paid only for the final output. Today mobile apps in Sweden reshape salesforce management with a similar production process.

The Social Web (Rheingold, 1996), understood initially as the set of relations that link people online, turned into the next big thing of current generations. This traced back to basic Bulletin Board Systems, which operated like discussion forums. The creator of the Internet, Sir Tim Berners-Lee stated, “The Web is more a social creation than a technical one” (Berners-Lee cited in Porter, 2008). Communities lead the transformation. Companies like Classmates.com (1995) or SixDegress.com (1997) were pioneers, whilst MySpace (2003) and Facebook (2004) grew the flame. The Dunbar number (Dunbar,

2010) was challenged and validated by Twitter and other social networks. The networked society led to new social movements as defined by Castells (2011, 2015).

10.- Generation gap

We understand that the meaning of "generation" is a group of people of similar ages who share common experiences (Rudolph and Zacker, 2016). However, the problem with generational typologies is that their grain of truth is underpinned by the undisputed fact that there are certain similarities among members of heterogeneous population groups, but that are stereotyped by their year of birth (Fineman, 2014). Once that typology and the name given to a generation takes hold (particularly in the media, consulting and marketing) it is very difficult to shake it off and it tends to be considered to be an undisputed fact.
The great dilemma that is involved when speaking about a generation consists of separating the effects of three related but very different factors: age, historic period and statistical cohort. The difficulty lies in how to determine the variance of each of these variables independently from the others as a generation tends to be seen as an intersection of age and period that gives rise to a group of individuals with shared experiences (cohort). Based on this view, results are inexorably intercorrelated (Constanza and Finkelstein, 2015).
As pointed out by Paul Sackett (2002), it is extremely complicated to use age and historic periods in order to compare groups of people. It is necessary to specify the events and experiences that underpin the hypotheses regarding differences between cohorts and to systematically test these hypotheses. If this is not done, we can end up inventing stereotypes.

First studied by Mannheim (1952), generational gaps are based on the idea of a group of people sharing the same social and historical locus. Under those circumstances environmental conditions may lead to a common interest in differentiation from previous generations.

As a result, stereotypes act like cognitive shortcuts that save us time as they allow us to make quick judgements in a complex world. Thus, we tend to store and record information regarding a group that is consistent with the stereotype and to discard those examples that are not in accordance. We look for shortcuts such as "if they are "Baby Boomers" they will do X and if they are "Millennials" they will do Y", but generalisations regarding groups tend to be discredited over the long term (Constanza and Finkelstein, 2015: 313). Treating the members of a generation as if they were intrinsically and uniformly similar hides the fact that each person has his/her own desires, talents, preferences and attitudes. In fact, acting this way conflicts with what we know about individual differences (Sackett, 2002).

There is little empirical evidence accrediting the existence of differences based on generational circumstances and there aren't any theories backing it up (Constanza and Finkelstein, 2015). In fact, there are many viable alternative explications of observed differences.

For example, Millennials, who are acknowledged as "digital natives" (Ransdell, Kent, Gaillard-Kenney, & Long, 2011) are supposed to have some advantages: superior technological capabilities, greater abilities for dealing with scenarios of rapid and on-going changes, a higher level of independence and better innovation capabilities than previous generations (Tapscott, 1998) as well as a remarkable combination of gearing to success and self-absorption (Zemke, Raines & Filipczak, 2000). Nevertheless, this may merely reflect the ways of behaving among young people during any particular historic period: they tend to be lazier, more energetic, more exploratory, more selfish, and more dramatic than are their elders (Steel and Kammeyer-Mueller, 2015). Of course, these are only group trends and do not reflect the huge variations within each group.

In order to lead the new industrial revolution there is a new generation that is better prepared than any other, which leads us to contemplate the problems of the generational gap and the digital divide (Gravett and Throckmorton, 2007; Howe and Strauss (2009); Tapscott, 2009 and Van Deursen and Van Dijk, 2014). Many will miss the train of digitalisation of the new society that we are building (Friemel, 2016). However, this trend reflects the existence of gaps that are present within a generation for economic, cultural and educational reasons. Moreover, there are also other perspectives regarding the so-called "Generation Debt" (Kamenetz, 2006).

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