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## **MANAGING IN THE DIGITAL ECONOMY: AN INTRODUCTIVE DISCUSSION**

Digital economy is undoubtedly alive today and its technical means are being analysed more and more by business administration specialists. Digitalisation changes the profile of the consumers and the means by which marketing is done. E-marketing, m-commerce, search engine marketing, or social media marketing are by-products of this emerging trend reflected in the marketing domain. But the most important and unexpected impact of digitalisation seems to be on the practice of management as we know it: computers not only modify the way consumers keep themselves informed and buy but even replace specialists on some jobs and influence, by consequence, the decision making processes. This is why, without fearing a speculative approach, we might ask ourselves legitimately whether the way managers think and make decisions is about to change as the digital economy begins its rein. Thus, in order to find possible answers, we will underline in this theoretical article the most important elements characterising the present digital economy that may have an impact upon business administration, as presented to us by the literature.

### **The reality of the digital economy**

The concept of „digital economy”, meaning economy based upon digital technology, has been introduced by Don Tapscott who used it in the first edition of his bestseller “The Digital Economy: Promise and Peril in the Age of Networked Intelligence” published in 1995. Tapscott states that digital economy, which is also called *the new economy*, is mainly characterised by the use of exclusively digital information (Tapscott, 2015, p. 16), but it does not refer only to the IT&C<sup>1</sup> market. The almost exclusive use of digital information has led during the last two decades to unexpected changes that have created a true social revolution, characterized by digital markets, knowledge exchange empowerment of the individuals and interconnectivity – anywhere, everywhere and no matter for what reason.

For a relatively long period of time, digital was synonym with Internet and with the new globalized communication networks, as communication itself changed dramatically under the influence of the online environment. Maybe the most important consequence of the digital

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<sup>1</sup> IT&C: Internet and Communications.

reshape of communication is the one of the fundamental transformation of power relations between power (politics, economics, and media) and masses. For the very first time in history, one's voice is something that can be heard by the others and can influence decisions, as simple consumers or citizens have now the Social Media and the blogging solutions to say loud what they think.

Digital economy is not an academic concept, nor a commercial one, but a reality which is officially reknown by public authorities such as the European Comission that aims, as one of its ten priorities for the next years, to create a common digital market (European Comission, 2015). This way, European authorities have acknowledged the presence of digital technology in everyday life but also the necessity of tearing down the physical barriers that can interfere with the digital circuits, regardless of their form (of information, of goods and services and so on), especially through „the 28 different norms that exist in the EU in telecommunications, copyrights, information security and data protection” (*idem*). (Figure 1.)

The main characteristics of the digital economy could be synthesized as following: mobility, use of data and network effects. As never before, in the digital economy consumers are not anymore confined by the limits of the national frontiers: they can buy almost anything, anytime, from any country, and this fact rises questions for the existing legislation.

Digital means less barriers. The number of online buyers is constantly and globally growing: there are already more than 1.200 millions and it is expected to grow by more than 10% until 2016 (Statista, 2015 [1]).

Even from the very beginning rise of Internet, there have been scholars to argue that states are unable to control e-commerce, so that private actors are coming to play an important role (Farell, 2003) – and as we can see, the today world trade is reshaped by companies such as the American Amazon, E-bay and, more recently, by the Chinese Alibaba and Aliexpress. All these companies have in common their constant innovation of the business model and their global ambitions. For instance, Amazon pioneered by having what they claim to be the „Earth's Biggest Selection” of products available through its family of websites, available for all countries in the world. Moreover, Amazon innovated by extending its business line to the Kindle ecosystem of tablets and e-books and, more recently, by launching the distribution drones network (for US only). Amazons sales in 2014 reached an impressive level of 67.9 billions USD dollars and its brand is considered to value 147.88 billions USD dollars, compared to the worldwide level of B2C e-commerce of 1.2 trillions USD dollars (Statista, 2015 [2]). (Figure 2.)

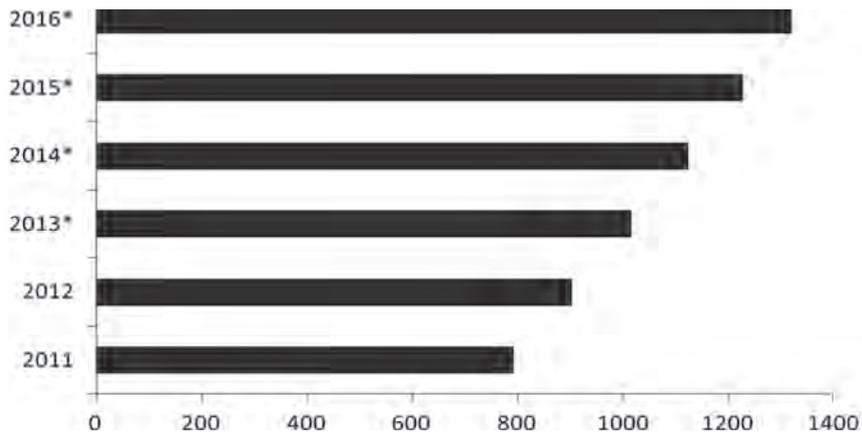


Figure 1. Number of digital buyers worldwide from 2011 to 2016 (in millions)

Source: Statista (2015). <http://www.statista.com/statistics/251666/number-of-digital-buyers-worldwide/>

\* Forecast. The source defines digital buyers as internet users who have made at least one purchase via any digital channel within the past year, including online, mobile and tablet purchases.

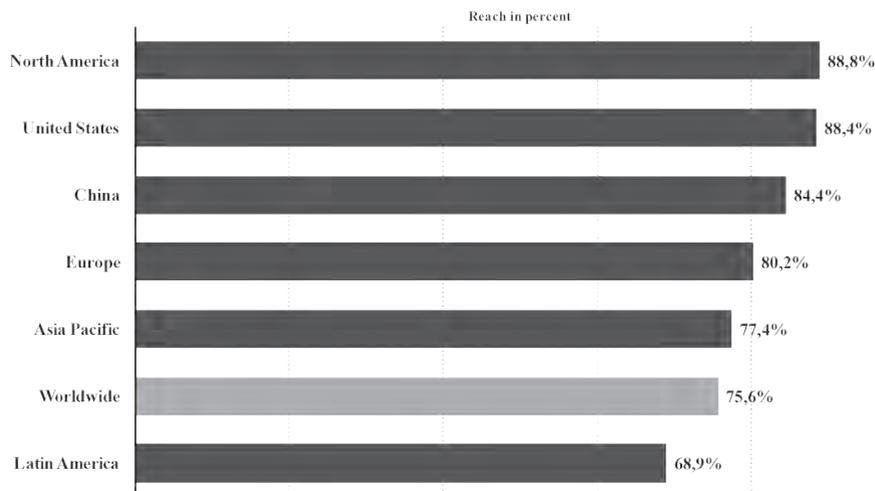
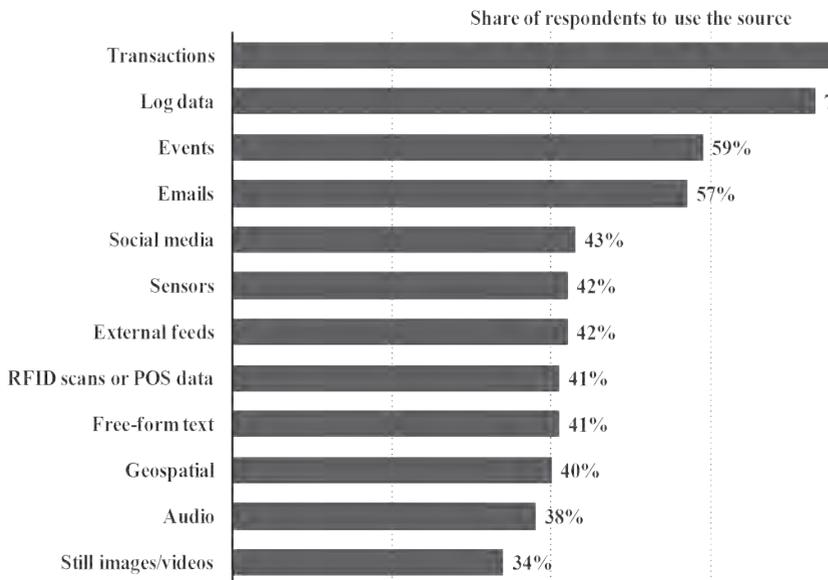


Figure 2. Global online shopping penetration  
(in selected countries and global regions as of May 2014)

Source: Statista (2015). <http://www.statista.com/statistics/274251/retail-site-penetration-across-markets/>.

According to recent statistics, approximately 22 percent of all of the disposable income worldwide was spent online (Statista, 2015 [3]) and 40 percent of worldwide internet users have bought in 2014 products or goods online via desktop, mobile, tablet or other online devices (Statista, 2015 [4]). Moreover, global e-commerce penetration is booming in other countries than the G20: 84,4% in China, 77,4% in Asia Pacific and 68,9% in Latin America in 2014, compared to 88,4% in US and 80,2% in Europe (Statista, 2015 [4]).

The second fundamental characteristic of the digital economy is linked to collecting, sorting and using data of any form, from day to day use of information in the digital medium to an individual matrix created by the use of gadgets as smart phones or intelligent watches. The large amount of data that we call „big data” are important resources for the marketing of the large corporations but also for the governmental strategies and are collected mainly through transactions, log data, events, different communications (e-mail, Social Media) or connected devices. They generate already important revenues for companies such as IBM, Dell, HP, Oracle or SAP, worldwide reknown as big data vendors. *Figure 3.*



*Figure 3.* Types/sources of big data  
(used by industry professionals in 2012)

Source: Statista (2015). <http://www.statista.com/statistics/255613/sources-of-big-data-most-often-used/>.

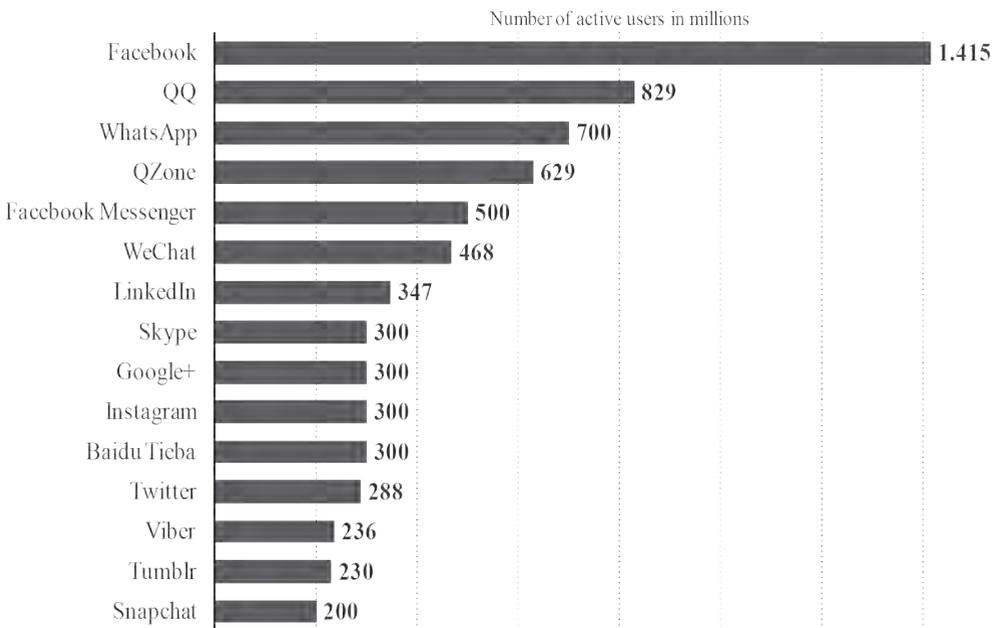
Last, the third fundamental characteristic of digital economy is the creation of networks among individuals, communities, companies and markets. In 2016, it is estimated that there will be around 2.13 billion social network users around the globe, up from 1.4 billion in 2012 (Statista, 2015 [6]). Networks is not only about Social Media: as a matter of fact, the digital economy means augmenting some already known effects of the globalization process, such as delocalisation of the company's activities in places far away, considering the competitive advantages that these locations have (wages, taxes), but also for the ones who are part of global supply chains, regardless their country of origin. The Bartel, Lach and Sichernman model shows that outsourcing becomes more beneficial to the firm when technology is changing rapidly, which explains theoretically the expansion of outsourcing in the digital age maybe more than classical logic of lower costs and increased connectivity. „The intuition behind the model is that as the pace of innovations in production technology increases, the less time the firm has to amortize the sunk costs associated with purchasing the new technologies. This makes producing in-house with the latest technologies relatively more expensive than outsourcing.” (Bartel, Lach and Sichernman, 2009, p. 20).

Data, mobility and networks: this could be the shortest definition of the digital economy. But is it enough? It is interesting to note that each of these three characteristics lead to *polarization*. For example, data collecting, as a source of competitive advantage, has given birth to a number of reactions coming from individual consumers who refuse to fill in the data they are required to, but also has encouraged the emergence of more and more restrictive laws regarding personal data protection. Data sharing favours, for example, the connection between people and causes – such as the famous Arab Revolution that has grown exponentially via social network sites but there is also a negative side of this feature: „the Internet is crucial for global terrorism. Terrorists have taken advantage of commercial networks for communication, finance, and transportation to act on a global (...) scale” (Lewis, 2005, p. 112).

Speaking of polarization, there must be said that the mobility digitalisation brings also brings imobility: there are many voices stating that the intensive use of digital technology leads, in fact, to a significant increase in sedentarism. However, data shows that the effect of polarization can be also traced in this respect, as individuals tend to become more mobile as a consequence of using the apps dedicated to physical activities, but they also tend to become more inactive, as Lepp et al. show: “cell phone use appears to have the ability to both facilitate and disrupt physical activity.” (Lepp et al., 2013).

In the same time, the digital economy is a true “*knowledge economy* based on the application of human know-how to everything we produce and how we produce it” (ibid.,

p. 17). In the digital economy, consumers are closer than ever to knowledge they share, and information is commoditized (Small & Sage, 2006; Shapiro & Varian, 2013). The forms by which individuals may share knowledge in the digital realm are countless and continuously growing, but all of them are considered affordable and accessible by these people. Information can be shared easily as long as there are available many friendly computer programmes, which can be easily used even by people who have no previous knowledge related to computer programming, and as long as using these programmes generally implies no costs for the user – such as blogs, e-mail, discussion forums, and social network sites (Leea & Younna, 2009; Kaplan & Haenlein, 2010). *Figure 4.*



*Figure 4.* Leading social networks worldwide  
(as of March 2015)

Source: Statista (2015). <http://www.statista.com/statistics/272014/global-social-networks-ranked-by-number-of-users/>.

Digital economy is heavily related to knowledge but we are not speaking of a classic sort of knowledge, but of a more visual and instantaneous one (through photos and videos)

and even selfies and the obsession people have developed for them (Berry, Schlessler, 2014). Pinterest, Vmeo, YouTube and Instagram are products of the new economy that have earned a remarkable commercial success and great notoriety. For example, each month more than 1 billion people from all over the world access YouTube (Socialbakers, 2015). The impact of the social network sites that use images and can be accessed through mobile devices is also impressive, especially for the implications they have on consumers' expectancies and behaviour on the markets (Gannes, 2009). Information is easier to be accepted, easier to be assimilated and, in the end, easier to be transmitted further – more so when it is given in a visual form. The phenomena is so widely spread that even politicians and astronauts are part of it, not only day to day consumers. For example, in his speech to the nation from January 2015, President Barack Obama has sent the following message to the members of the NASA team preparing for the future Mars expedition: “Good luck Captain. Make sure to Instagram it.” (Business Insider, 2015).

In a digital economy not only consumers gain power through information, but companies also become more capable of using big data through complex ERP (Enterprise Resources Planning) and CRM (Customer Relationship Management) systems that enable them to gather and then use more information on markets and clients, mostly in real time (Gummeson, 2015). This helps companies to offer to their clients personalized and complex services, often in real time (Rust and Huang, 2014), through a variety of channels and points of contact, mostly technologically connected: e-mail, sms, app, Social Media etc.

Orwell's Big Brother starts to live among us but in a different way, which does not mean control but interconnectivity and continuous personalized data which are transmitted and processed in real time not only through monitoring and analysing web page navigation patterns, but also through processing the information gathered by the Internet of Things (IoT). “The IoT is defined as the network of dedicated physical objects (things) that contain embedded technology to sense or interact with their internal state or external environment. The IoT comprises an ecosystem that includes things, communication, applications and data analysis.” (Statista, 2015 [8]).

We understand now the most recent phenomena of the digital economy, the use of smart and connected products, even if their interconnection is not classically web based, but it is based on “smart components such as sensors, microprocessors, data storage, controls, software and (...) ports, antennae, and protocols enabling wired and wireless connections with the product” (Porter & Heppelmann, 2014, p. 67), which are translated into smart clothes, smart cards, smart roads, smart cars, smart tires, smart phones, smart TVs and so on. All of these smart products are part of our daily existence, embedding and sharing enormous knowledge

quantities. For example, it is estimated that in 2017 87% of the Internet connectible devices sold in the USA would be smart devices, such as tablets or smart phones (IDC, 2013), while the global selling of smart wearable devices such as smart watches are expected to rise from about 1 billion items in 2014 to over 15 billion in 2015 (Velasco-Castillo et al., 2014). *Figure 5.*

Attribute	What the IoT does	How it differs from regular Internet
Sensing	Leverages sensors attached to things (e.g. temperature, pressure, acceleration)	More data is generated by things with sensors than by people
Efficient	Adds intelligence to manual processes (e.g. automatically reduce power usage on hot days)	Extends the Internet productivity gains to things, not just people
Networked	Connects objects to the network (e.g. thermostats, cars, watches)	Some of the intelligence shifts from the cloud to the network's edge
Specialized	Customizes technology and processes to specific verticals (e.g. healthcare, energy, automotive)	Unlike the broad horizontal reach of PCs and smartphones, the IoT is very fragmented
Everywhere	Deployment practically everywhere: on humans, cars, in the houses, in the industrial environment etc.	Ubiquitous presence, that raises security concerns

*Figure 5.* Key attributes of IoT (S-E-N-S-E)

Source: Goldman Sachs Global Investment (2014). *The Internet of Things: making sense of the next mega-trend*, September 3, 2014, p. 2, <http://www.goldmansachs.com/our-thinking/outlook/internet-of-things/iot-report.pdf>.

Today the digital economy is smart and visual, encompassing in fact more than just knowledge. However, the new types of smart products “alter industry structure and the nature

of competition, exposing companies to new competitive opportunities and threats” (Porter & Heppelmann, 2014, p. 66), for which they are more or less prepared. Some of the most important challenges that companies and managers have to face in the new digital context we cite:

The need of having competencies for the new design principles, such as “designs that achieve hardware standardization through software-based customizations, designs that enable personalization (...) and the ability to support ongoing product upgrades, and designs that enable predictive, enhanced, or remote service” (ibid., p. 77);

Rethinking processes needed to support after-service services, which correlate heavily with real time collected data from smart devices;

Rethinking of marketing strategies and techniques from the classic marketing to m-marketing (mobile) and even more for using data about the consumers in order to create offers for connected products or lateral marketing actions;

Human resources need to be prepared not only in terms of digital alphabetization (the people who know how to operate a computer are needed) but also they need or understand the new systems and to have the knowledge required by the new positions which are created, such as the ones regarding product clouds, social media marketing, big data analytics and so on;

Security: more than ever, in the Internet of everything era we need to secure the continuous information flows, to guarantee their integrity and incorruptibility and to protect them from eventual unauthorized use. In sum, companies that sell smart products or related services must invest in security measures.

Digital economy means, thus, digital companies or digitalized companies. The degree of digital maturity is different today from one company to another but the consequences of digitalization are more and more visible on every level of each company operating today, including the management level. This thing is not unusual as long as digitalization, understood as the use of technology in order to significantly increase the level of performance in companies, is a constant topic on the agenda of managers worldwide, and we are not talking only of IT managers (Baldwin, 2014). Companies justify their investments in digital technologies and their interest in acquiring new organizational aptitudes by referring to need to adapt to consumers’ expectations, increased cost efficiency and competitive advantage (MIT & Capgemini Consulting, 2011). However, there are still rising questions on the impact of digitalization on business models, especially concerning consumers, such as: what is the impact of image crisis through social media on companies and brands?; how do consumer crowds and shared reviews affect brands?; in the age of big data, what is the consumers’ attitude on personalized offers and products that finally limit the access to information? (Labrecque et al., 2013, p. 266).

The decision regarding digitalization in companies depends, in the end, on the perceived benefits for the company in the age of smart devices, as long as the domain of activity is evolving as a consequence of the evolution of these technologies on the following levels: customer experience and points of contact with consumers; sales force and distribution channels; products and content; product or processes innovation; partnership network; brand; customer knowledge; culture (*ibid.*, p. 49), using the adequate channels or digital resources.

The digital transformation of organizations is not a new subject, even though the international academic literature approaches it in a timid manner. During the last decade some of the business models have been completely remoulded, the music industry being one of these (Bourreau et al., 2008; Hull et al., 2011) together with the media industries (Doyle, 2013). Digital companies or digitalized companies must reshape their processes and activities in order to face the structural modifications at the level of consumer behaviour. One of the keywords that digitalization brings to business models is “syndication”, a concept specific to information or products that imply a high degree of knowledge (Werbach, 2001). Syndication requires modularity and many independent distribution points (*ibid.*, p. 22), thing which translates as flexibility in business administration.

Are managers aware of the digital transformations that the society, the markets and the businesses face today? Is the science of management changing? Is the leadership evolving?

### **E-management and strategy**

E-management is, of course, more of a metaphor and it refers to the new practices of management in the digitalized landscape. Even though the academic discussions on the subject of digital technologies impact on business are not new, they are still limited to the impact of some practices upon operations, and the discussions about strategy or about the managerial abilities needed in a digitalized context are quite rare. The literature presents some analyses of the effects of e-commerce on operational management (Barnes et al., 2014), stressing the importance of the continuous actualization of e-technologies used by companies and the importance of flexibility: “in the new economy as much as in the old economy an organization’s operations can offer a competitive advantage, but only if they are managed strategically. However, as some of these cases have demonstrated, e-businesses operate in a very dynamic environment. Strategy-making at both corporate and operational level is particularly difficult in such volatile conditions. Understanding strategy in such conditions is also hampered by the static nature of many of the operations strategy models that were developed in more stable times.” (*ibid.*, p. 493).

One of the key points in academic literature is still the one of managerial modelling from the perspective of finding the most suitable answer to the challenges that digitalization brings to organizations. Some proposals regarding e-business management models have already been presented. We can structure them as following:

E-business integrative models: the SIAM model, structured on four pillars – “current customers, new customers, customised products, and the organisation’s position in the business network” (Huizingh, 2002, p. 741); the CIC model that „requests managers to think of the customer interaction process from a customer’s point of view” (ibid.);

E-business integrative models with a operational focus on automatization, such as SRS (Sense-and-Responsive), designed „for integrating information and materials flow, as well as monitoring the E-Business Supply/Demand/Value Chain” and where „the “sensors” in the diagram are computer programs (software code) and its associated data-collection devices (hardware); the sensors are designed for data-capturing (sensing), monitoring, and evaluating data (input) throughout the value chain. Ultimately, this approach would result in semi-automated analysis and action (response) when a set of inputs are determined (sensed) without hindering human autonomy.” (Rodriguez, 2006, p. 81).

During the last few years, the academic literature has concentrated on conceptualizing the electronic distribution and on the contact with the client who gathers information or buys using digital resources. In this direction, we can cite:

Models of business administration using the Internet, limited to e-commerce or m-commerce: the majority of them are centred on trust (Gefen et al., 2003; Lee and Turban, 2001; McKnight, 2002), but we encounter consumer-centred models – perceived customer value in e-commerce (Chen and Dubinsky, 2001) or models of performance measurement (Zhu and Kraemer, 2002) or a conceptualization of new business models from a technological perspective, stressing the importance of mobile commerce (Sadeh, 2003);

E-marketing models: generalised practice models, such as RACE which summarises the key online marketing activities that need to be managed, covering the full customer lifecycle or marketing funnel from „(Plan) > Reach > Act > Convert > Engage” (SmartInsights, 2015) or theoretical models centred upon channels or techniques, as SMS (Dickinger et al., 2004), digital branding (Yenicioğlu and Christodoulides, 2014), and social media (Zarella, 2009; Evans, 2010).

However, the strategy models that take into account the digital transformations, not necessarily for e-business, but for hybrid companies (that are part of the old economy but are in the process of digital updating), both on the organizational level and on the requests for specific managerial aptitudes, are not yet fully developed. From a strategic point of view, some of the key questions that an increasing number of managers must have answer to are:

In a world of information, which data needs to be collected, stored and processed by companies in order to be used efficiently and transformed into profit?;

How is / should be protected the gathered information?;

Would companies begin to produce smart devices that would cannibalize existing products, or would those new products support the existing products and/ or services?;

Should the company fully or partially disintermediate distribution channels or service networks?;

And last but not least: should the company change its business model? (Porter and Heppelmann, 2014, p. 80-84).

The discussions on managerial and business strategies are just beginning to evolve in the context of digital transformation, not only on the operational level or on the e-commerce or e-marketing processes, as scarce as the ones about the qualities of the managers and the leaders should display in the digital age. This observation is paradoxical, as long as the discussions concerning the rapports between management and technology have begun sometime during the years marking the half of the XXth century. In 1967, Peter Drucker wrote “the computer makes no decisions; it only carries out orders. It’s a total moron, and therein lays its strength. It forces us to think, to set the criteria. The stupider the tool, the brighter the master has to be - and this is the dumbest tool we have ever had.” (cited in Dewhurst and Willmott, 2014).

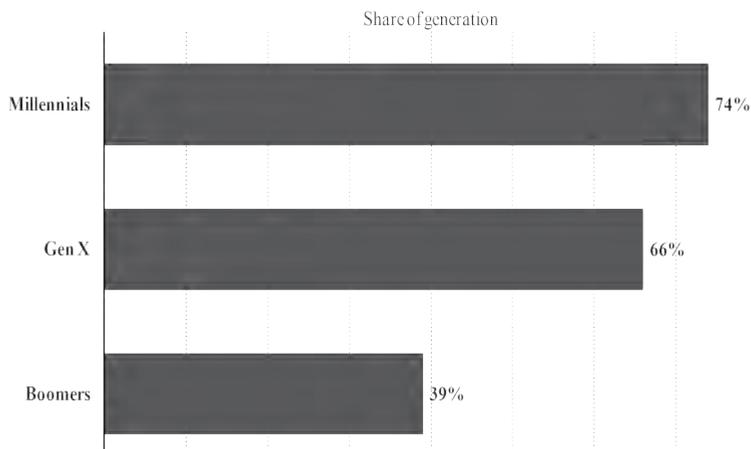
Can we understand *ad litteram* this affirmation? Or are things changing in a more profound manner, as the artificial intelligence revolutionizes our world? Even if most of the people feel that the artificial intelligence (also known as AI) sounds like a science fiction topic, John McCarthy pointed out in 2005 that the long term goal of the AI revolution is developing human level AI (McCarthy, 2005, cited in Shi, 2011). The scientific community has already begun relating the artificial intelligence with management practice and theory, especially with knowledge management. Researchers have various opinions regarding the relevance of AI for the realm of management. For example, Dalkir (2013) believes that artificial intelligence is only a useful tool of knowledge management in order to classify and summarize information, while for others AI is about sharing and collaborative learning through its different forms, like mobile applications (Caballé et al., 2010) or GPS applications (Cough, 2010), but they do not stress the importance it could have or has on the practice of management.

The rise of the digital technology is undoubtedly great, and the academic literature develops detailed research on its impact, but little has been written on its influence on management and leadership. A question remains: what can be said about the manner in which things change in the digital economy and, more specifically, for managers? In our opinion, beyond the necessity of flexibility and speed and beyond the need to understand and to use digital

technologies, managers face today a new challenge which seems to be of great importance: they need to learn how to speak to and how to work with the members of the generation of the digital natives (or the so-called Y generation).

### **New employees and customers: the digital natives**

The Internet revolution and the digital revolution that followed have led to the emergence of a new generation of consumers, comprising of youngsters (the so called Millennials, or Generation Y, or digital natives) who do not conceive life without ITC and expect it to be present in most of the social situations they get themselves into. Obviously, the life they live among screens and their preference especially for mobile phones and touch pads offers them particular experiences that might be very different than the ones the elders were used to having (Helsper, 2010). *Figure 6*



*Figure 6. Mobile internet penetration worldwide by generation  
(as of 1st quarter 2014)*

Source: Statista (2015). <http://www.statista.com/statistics/306906/mobile-internet-penetration-worldwide-by-generation/>.

**\*\* Legend:**

Boomers – individuals born before 1965.

Gen (Generation) X - individuals born between 1965 and 1980.

Millennials - the generation born after 1980, now aged 18 to 34 years.

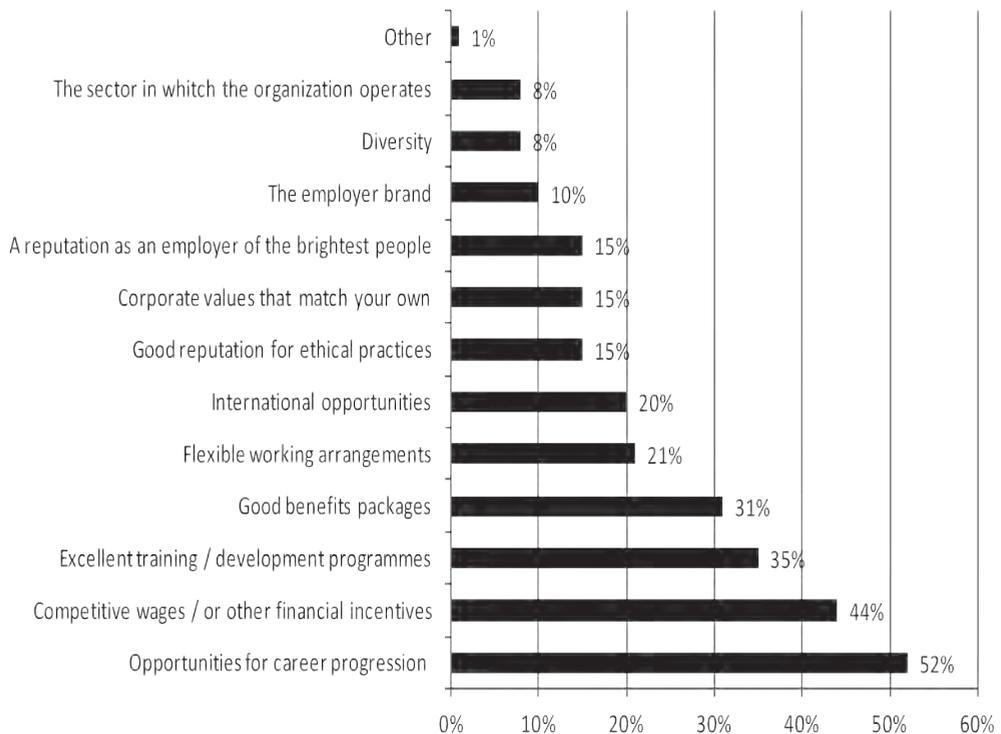
Sometimes the Millennials have even been perceived as victims of the world they live into, mostly because they seem to be disconnected from the traditional ways of life (Noble, Haytko & Phillips, 2009). This idea is linked to the one that they have transformed themselves into cyborgs that need to be permanently plugged-in or connected to various devices in order to function properly (Sutherland & Thompson, 2003; Weiler, 2004; Twenge, Campbell, Hoffman & Lance, 2010; Dagnaud, 2011; Gansky, 2011).

Approaching this issue from a different angle, some authors (Huntley, 2006; Hansen & Leuty, 2012) state that the members of the Generation Y, the Millennials, the Generation Me people, the Net Generation or the Thumb Generation, the digital natives – all being names given to this large group of people that can be called a new generation – are basically just characterized by a strong preference for frequent use of devices in order to accomplish what they set themselves to. This preference is heavily connected to the way these people process information or think, says Prensky (2001), underlining the idea that they are wired to experience life in a new way than their ancestors. Filloux (2010) describes their way of thinking in terms of classic problem solving skills used in a digitalized world. He observes that the youth see life as a video game, constantly waiting for a peril to arrive, thing which transforms them into suspicious buyers who lend little trust to corporations, brands or politicians. In addition to this, Tapscott (2010, p. 132) writes that they have a high desire to be free to choose for them, that they like to customize anything they can, that they are scrutinizers that they ask for integrity, that they like to collaborate, to mix fun and work, to innovate and that they like everything to happen fast. And, as regarding media use, they are omnivores who chew on information 71% of their time and they use various media to stay informed (Marketingprofs, 2012).

Millenials tend to valorise, when speaking of work, mostly opportunities for career progression, financial incentives, excellent training, flexible working arrangements, international opportunities and good reputation for ethical practices (PwC, 2011). As a matter of fact, the digital natives show themselves as being practical, enthusiastic and concerned about ethical issues, which makes the best of them “hard to find and even more difficult to keep” (ibid.).

Although the Millennials generation is to be found all over the world today, regardless of the level of economic development of the country its members have been born into, some local particularities can be traced down. For example, a GfK Romania study published in 2013 (Calei, 2013) shows that Romanian members of this generation are indeed very interested in ITC but that their motivations are perhaps different than the ones other people of the same

age have: they are insecure and need to maintain constant contact with their friends using the smart phone and various social media sites in order to feel protected and encouraged. Also, Romanian gen Y-ers tend to be superficial and lack long term plans. They live here and now. The lack of self-worth is doubled by their high expectations from the others and from the brands and companies they interact with as consumers. They expect everything to be customized for them, but without them being asked to pay for this service. In addition to this, copyrights have no importance for them. Creativity is not their biggest asset, and innovation does not really characterize them, although digital natives in western countries are said to be creative (Tapscott, 2010). *Figure 7.*



*Figure 7.* Key factors that make an organization attractive to Millennials

Source: PwC (2011). *Millennials at work. Reshaping the workplace.*, p. 10,  
<http://www.pwc.com/gx/en/managing-tomorrows-people/future-of-work/assets/reshaping-the-workplace.pdf>.

Further, recent studies reveal that the young members of this generation are challenging managers on different levels. Mitan (2014) has found that a significant number of young Romanian digital natives who pursue university level studies are financially supported by their families, and many live with their parents or with other relatives. As a consequence, this suggests that they can search for the job they think is good for them for a relatively long time, without fearing that they would not be able to live a decent life, as their families pay the costs of living for them. The same study reveals that from the perspective of the values these youngsters use as guiding lights in life, there are three categories:

the Digital Enthusiasts - people who are fascinated by technology and proficient with it, but who prefer to be constantly told what to do by their managers, and who desperately want to find a leader to guide them both in their personal and professional life;

the Rebel Truth Seekers – people who strive to find meaning and a higher purpose in everything they do, are proficient with technology but they are independent and respect managers only based upon the level of competence they perceive the managers have, dismissing formal hierarchies;

the Pessimistic Individualists – people who have not yet found a place in the digital world – they are not proficient with technology although they use it to call friends and make pictures, they have not found their place in the world and they do not expect anything from the companies they work for or from their managers (ibid.).

How would managers deal with the issues that this sort of workforce brings to surface? We can hardly tell now, but it is certain that the management practice would be increasingly impacted by them.

### **Further discussions and conclusions**

It is estimated that 15% of the objects people use will be connected by 2020 (CapGemini, 2014), including clothing, accessories, electric equipment, electronics, household appliances, cars, and so on, and companies would not be able anylonger to take into account expansion or international consolidation in the absence of integrated web strategies (ibid.). This is a major change, as long as until recently the digital web meant just web, understood as Internet websites and other more and more efficient means of contacting clients.

More so, the largest part of the scientific papers on digital and its impact on business is dedicated to online marketing, with all its distribution channels and/ or communication channels known: web site, search engine marketing, search engine optimization, social

media, mobile applications, responsive design, permission marketing, e-mail marketing etc., and with detailed analysis on consumer behavior in the digital world.

But the Internet of all things, of the smart connected objects, seems to bring dramatic change to the digital landscape, and the necessity of a more attentive approach to what we call analytics begins to be pressing. In addition to this, the first generation of digital natives who have come of age brings not only new consumers, but also new employees, with needs and expectations that differentiate them from previous generations. How does management change in this context?

In this direction, we consider that the following topics need to benefit from further research:

1. Digital economy is a type of knowledge economy (Tapscott, 2015, p. 370), in which the repetitive tasks that were common in the past are transferred to intelligent systems. The employees who work in this new economy need to learn and grow constantly, so that they can make complex analyses using the data collected by interconnected systems. This calls for a constant professional improvement of the workforce. The old formulae of motivating the human resources, the ones based upon stimuli and reward and on coercion could suffer mutations. Are managers ready to work with employees whose job description must evolve constantly?
2. The digital economy is not a cheap one : companies must invest in technology, in maintenance and in ensuring its security and, in the end, in its development and adaptation, sometimes perhaps letting go personnel and ceasing to use various spaces that become too costly. In digital economy, employees already work from home or from offices that are not located in the buildings owned by the companies (Hardill & Green, 2003). Are managers ready to coordinate, motivate and control remote teams?
3. Careers do not provide employees now with the safety they used to during the times before the digital economy age (Tapscott, 2015, p. 372). The employees are the first ones who need to learn, to evolve, to improve their capacities, as repetitive tasks are no longer attributed to them, as we mentioned above, but are solved by artificial systems. How could and how does a company handle retention and employee fidelity now? How will it be in the close future? Will we face times when people would become specialised mercenaries travelling from a company to another, or would companies invest more and more in the continuous education of their own teams, trying to keep employees for long periods of time?
4. Digital natives are independent and tend to be optimistic, but they also tend to be superficial and in the quest for safety, as we wrote above. Would they be able to work from

home or from the distance, in the times when the concept of the career as we understood it until recently (as a vertical evolution in a company or in the same domain) changes dramatically?

5. Most of the managers today are not gen Y-ers themselves and they need to learn how to adapt to the changes brought about by the digital revolution in the business environment and in the society at large, as it is announced by the world governments (see the 2020 Digital Agenda for Europe as defined by the European Commission). What management models could managers adopt in this context?
6. Would the models of business administration suffer structural modifications on the markets where the crowdsourcing and the cluster-like alliances will become dominant forms of action for companies? In addition to this, will we face changes of the laws regarding the competition in such situations?
7. Most probably, even though the official political agenda does speak of a sustainable growth made possible by the digitalization (European Commission, 2010), this would not be automatically translated into an increase in the quality of life (in general and at the workplace) for all of the people. As Tapscott (2015, p. 373) observes, currently we do not know how the benefits of the new technologies would be allocated in the society.
8. Would there appear new forms of stress for the employees, caused by the transfer of the work systems structured using efficiency criteria and human needs to systems structured using artificial parameters defined by technological systems use? (see previous discussions on employees stress and non-motivation due to information system implementation: Tarafdar et al. 2007).
9. Consumers who are digitally connected have higher than before and increasing expectations related to receiving more at the cost of giving their private information to companies, and they prefer that brands would interact with them, using the digital medium, as human beings (Van Noort et al., 2014). Are companies ready to approach consumers one-to-one?
10. Digitally connected consumers, especially the members of the generation Y, have expectations that regard the use of technology for the benefit of the individuals and of the society, and social media are, at the moment, the most efficient form of mobilizing people for non-commercial related causes, as shown by the success of the Arabian Spring (Rabindranath, M. and Kapil, 2015) and many social initiatives implying online mobilization for offline manifestations (Enjolras et al, 2013). Are managers ready to prove their clients that digital technologies are useful to the society? Would the CSR models be reshaped in order to align with the latest digital technologies?

Even though the discussion on artificial intelligence has started more than half a century ago and even though the discussion on the Internet has already celebrated its twentieth anniversary, we are just starting to raise questions on the impact of digitalization on the society at large and on the economy. We believe that the management of the private companies, mostly, would face the challenge of reinventing itself and embracing leadership responsibilities that have not been suspected until now. In this article we have presented only a series of questions that need, in our opinion, to be given answers to through research. Most probably new questions will rise in the near future in the academic papers, perhaps speaking of the relation between the digital economy and the macro economy. Regardless of the answers we will gather in the future, we must acknowledge that we are now at the crossroads and that managers should think of the mutations that we start to face as the world rushes to become digitally interconnected.

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