



THE INTERNET OF THINGS. BETWEEN EFFICIENCY AND PRIVACY

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Abstract

The digital era opens the horizon to structural transformations in the economy and it enables the promotion of synergetic visions on the issues that humanity is currently dealing with: the significantly more efficient use of energy resources, the implementation of a circular economy, the fight against unemployment, the increase of the standard of living and the decrease of social gaps. Moreover, humanity has to face the new issues generated by the development of artificial intelligence and of new ways of communication, the transition from dialogue between man and artificial intelligence, to the dialogue between devices endowed with artificial intelligence and the configuration of a new type of reality where physical and virtual reality coexist.

Key words:

internet of things, smart economy, smart city, smart house, data

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1. Introduction

Staying one step ahead of reality and relating to an abstract future market seem to become some of the most important challenges for modern marketers. The most accurate anticipation possible of the transformations in society, of consumer preferences, of the consumer lifestyle and trends, have already become a requirement for the adaptation of an organization to the market.

Digitization will be re-conceptualized and will have new dimensions. We are already anticipating a new type of dialogue between human and artificial intelligence; however, we should also consider a dialogue that will be communicated between devices that will be endowed digital intelligence and the relation of humans to such communication. People's living environment continues to become more intelligent, and intelligence is constantly becoming more artificial. A new paradigmatic construction may become necessary to establish the separate conceptualization between the two types of intelligence, specifically so as to avoid confusions and not to translate the common perception of human intelligence to an ontologically and structurally different reality.

2. Digital Infrastructures And the New Economy Type

People need to adapt to an existential mix consisting of forms of co-substantiality between physical and virtual reality. An ever more complex digital infrastructure is expanding worldwide and is considerably increasing its

role in human activities. Progressively, a change has been made from seeing digitization as complementary to a context where it has become a constituent of many human activities, ensuring not only a communicational infrastructure, but also an infrastructure that tends to become essential not just for the operation of the market, but also for current human existence.

Currently, approximately half of the planet's population is connected online, with high annual growth rates on the emerging markets. One can estimate that out of 46.4% (1) of the world's citizens, a significant percentage mostly consists of individuals falling under the age groups of persons who are active on the market, as well as very young individuals who will become decision-makers concerning their personal financial resources in the near future.

Smart economy, smart city, smart house and even *smart citizen* are a few concepts showing that the future not only sounds *smart*, but also that there is an increased emphasis on the role played by digital infrastructure in human existence. Moreover, such concepts open the horizon for new questions dealing with the very idea of inseparability between humans and artificial intelligence in the future. Another, less common, question regards the way in which humans will become part of the dialogue between digitized items.

It is important for a marketer to configure what and how it will sell in a world where people will communicate especially via digital platforms, and where most of the

things they will sell will be endowed with artificial intelligence, or will actually be fully digitized products.

The Internet of Things is a new concept defining the very system where items with functions both in the life of the community and of individuals, are interconnected via a digital platform (Internet).

"The *Internet of Things (IoT)* describes a world where the Internet is connected to the physical world through sensors. In other words, any equipment (devices, cars, home appliances, lighting appliances, mobile devices, etc.) powered with electricity will be connected to the Internet – a world where all items are interconnected via the Internet" (2).

Practically, the digital communication of devices enables a significantly more efficient management of human resources, significant time savings, the increase of work productivity, the respite of the budgets of communities and individuals from important costs, and the development of new industries.

Nowadays, we ask ourselves not only how many people are connected to the Internet, but also how many devices are operating and communicating via the Internet. It is estimated that over 37 billion devices will be connected to the Internet in 2020 (3), and the Internet of Things will set in motion economic sectors and will generate approximately 4600 billion dollars by 2024 (4)

Home appliances whose use currently depends exclusively on direct human action, will soon operate based on a new communication system. Refrigerators that are fitted with video cameras that can communicate to a different device, such as a cell phone, the food items available in the refrigerated areas, and that can do the shopping to replace the products that are missing, are already available on the market (5). At the same time, they also include an embedded TV set and audio systems so that the user can listen to his/her favorite music channels.

Soon, air conditioning units, home safety systems, washing machines, toasters, stoves, lighting systems and water supply systems will also be endowed with artificial intelligence. They will be connected online and we will be able to remotely communicate with them, via other devices.

The benefits that the Internet of Things brings to man are obvious: resource, time and money savings. However, the disadvantages are not as clear. A first disadvantage is that, if all domestic activities become easier to monitor via smart devices, human users will also become more visible to artificial intelligence. What we use, how much we spend, how we spend our time - our most varied and personal preferences will become visible to artificial intelligence and to the mechanisms ensuring the management of the operation thereof.

3. The Internet of Things - Communication and Perspectives

If the history of human civilization was marked by communication between human being, we have now moved on to communication between human being and artificial intelligence, and are facing the horizon of a completely new way of communication: artificial intelligence-artificial intelligence. The Internet of Things is opening a new era not just for the operation of economy, but also for human existence and for what we have conceptualized so far through *communication*. Devices will begin to communicate with each other regarding the needs of human beings, and they will find constantly more efficient and environmentally friendlier solutions to satisfy them.

Marketers will be provided with significantly more precise databases, and they will know not only thorough details of the history of our shopping, but also of our most personal preferences which we provide information on via social networks. *Social intelligence data* companies will be able to provide their clients not only with considerable data volumes on the market, collected from the digital environment, but they will also have the capacity to analyze them, to ensure the competitive advantage thereof, specifically through the advanced knowledge of the target audience, unprecedented in the history of economy up to this date.

Product promotion will also become increasingly more digitized, as people seem to continue to become easier to access/identify in the virtual environment by companies. The human lifestyle is also facing structural transformations. Important mutations will occur in human occupations, many of which will no longer have a purpose in a digitized universe. When smart devices will buy products themselves, commercial networks will reduce the number of jobs for sellers, and we will travel far less to shop, which will have a powerful impact on the reduction of fuels and the increase of traffic fluidity. Digitization in transport, the transition to a smart road infrastructure used by smart means of transportation, without any human control, will lead to great savings for transport companies, and it will generate product price decreases, however, it will also be accompanied by the increase in unemployment amongst professional drivers.

In a world where the holding of wealth is strongly polarized, where, as Joe Biden, the US Vice-President of the *World Economic Forum - 2016* in Davos, claims, 62 individuals in the world hold wealth equal to the wealth of 3.6 billion of the poorest people on the planet (6), new technological changes should be managed with (in this case, human) intelligence, in order not to

generate social unbalances and not to impact the evolution of the middle class. "When people feel their shot at a decent life is dashed, is eliminated, the inevitable human reaction is anxiety, frustration, and anger providing fertile terrain for reactionary politicians, demagogues peddling xenophobia, anti-immigration, nationalist, isolationist views. And it begins to shred our social fabric in each of our countries. It stirs instability." (7) Investments in lifelong learning, the development of investment programs, the promotion of a new tax vision discouraging fraud and supporting the return of the money in the economy, particularly in the creation of new work places, are solutions to increase human welfare at the threshold of the digital era.

Conclusions

The economy is remodeling itself under the impact of the digital technology that also brings with it a new type of communication. We are witnessing the transition from the human-artificial intelligence communication, to artificial intelligence - artificial intelligence communication. The Internet of Things involves the development of a digital platform enabling the connection between devices, which will generate large cost decreases and, therefore, price decreases, the much more efficient use of resources and the monitoring of the objectives for the establishment of a circular economy.

The Internet of Things will soon also generate major changes on the job market. There are numerous occupations that are threatened by major unemployment (trade, transport, healthcare - numerous services will become digitized, and they will remove the need for human involvement), implying the need to promote policies directed towards the creation of new jobs.

Not lastly, the Internet of Things will generate deep changes in the contemporary human lifestyle. Artificial intelligence tends to become ever present in the daily life of people, which will raise a whole new set of issues, related to the privacy of the life thereof. Devices endowed with artificial intelligence initiate a new type of dialogue, between them, precisely on the needs of humans. They will satisfy them with the highest efficiency, however, they will also be thoroughly familiar with them. Metaphorically speaking, one can say that clothes will not be washed in private, as very personal information will be shared via digital systems. The new technological progresses bring humanity at the threshold of crucial questions and open the horizon to ontological changes.

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Notes:

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3. <http://www.bobses.eu/2015/09/22/ce-este-internetul-lucruilor/>
- 4 Ibidem.
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6. <http://www.weforum.org/agenda/2016/01/the-digital-revolution-could-destroy-the-middle-class-warns-joe-biden>
7. Ibidem.