Business Transformation - The Second Digital Revolution

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Abstract

We live in a world dominated by the technological revolution that was preceded by far, but still present - the information revolution, which in turn was based on Internet revolution.

Technologies that enable billions of objects to communicate daily with each other via the Internet have enormous potential to change our way of living and everyday life. These technologies are a way to boost productivity, to keep us healthier, to make transport more efficient, reducing energy needs and we make our lives more comfortable.

Internet All Things (IoT) is defined as a network in which all objects (cars, appliances, lighting systems, mobile devices, etc.) are connected through the Internet. Currently, worldwide there are 10 billion devices connected to the Internet, reported a population of about 7 billion people.

Introduction

Storage space is virtually unlimited computing power of processors doubles every two years validating Moore's Law and devices are becoming cheaper to produce.

Bluetooth communication standard, now in version 4.2 is the latest version of the technology, and it evolves to the evolution of IoT, this is just the beginning of the second digital revolution.

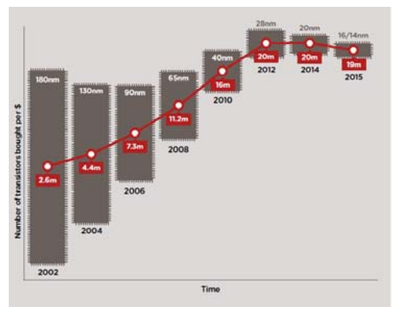
The sensors will monitor our health, how we move, our environment will help us more easily socialize and explore the world in ways we can barely imagine. IoT has the potential to have a greater impact on society than the first digital revolution.

According to statistics there are more than 7.2 billion people on the planet with an annual increase of 1.2 percent. On the other hand, the number of mobile devices exceeds 7.2 billion units operating with SIM card type. No other technology has had an impact as big as mobile telephony, with phenomenal growth never before, from 7.2 billion within 30 years.

Materials and methods

The concept of the Internet of all things is not new, it first appeared in the late 90s. Internet everything is a collection of hardware and software. The hardware consists of devices that are / interconnect (sensors, smartphones, 4G telecom networks, Wi-Fi, Bluetooth, etc.) and the software platforms include storage space and data analytic applications that are provided to users . When these elements are combined to provide real-time, there may be a positive influence on businesses that conduct.

Fig. 1. Moore's Law



Source: www.businessinsider.com

IT development is primarily due to the cheapening accessibility smart devices and small size semiconductor chips, resulting in devices small enough size and powerful in terms of computing power so as to be invisible in the physical world.

Second increasing the availability of the Internet, communications networks and their capacity had a role in the development IoT community. Failure to connect a static computing environment various devices was resolved wireless networks that have allowed interconnection.

The emergence of open-source software, hiring hardware and data storage in the cloud have resulted in a reduction in the cost of IT budgets resulting in an easier and simpler to maintain and organize data increasingly bulkier. Thus, innovation in data storage management and clearly defined IoT's role in everyday life.

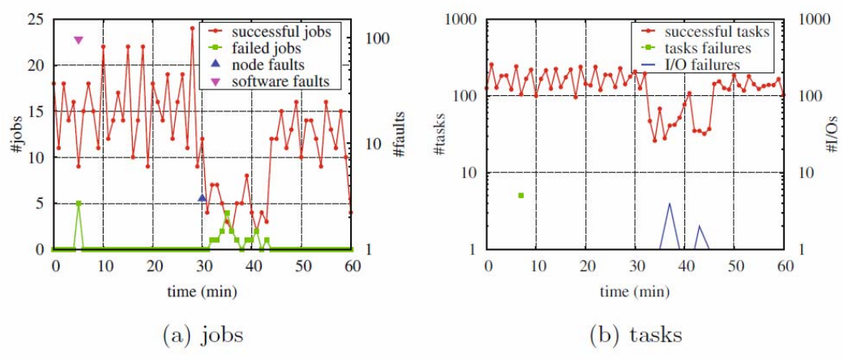


Fig. 2. Successful vs. failed MapReduce jobs and tasks

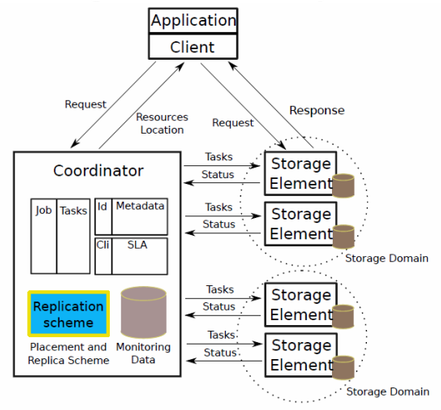


Fig.3. The main functional blocks for Storage Elements and Storage Domains

Results and discussion

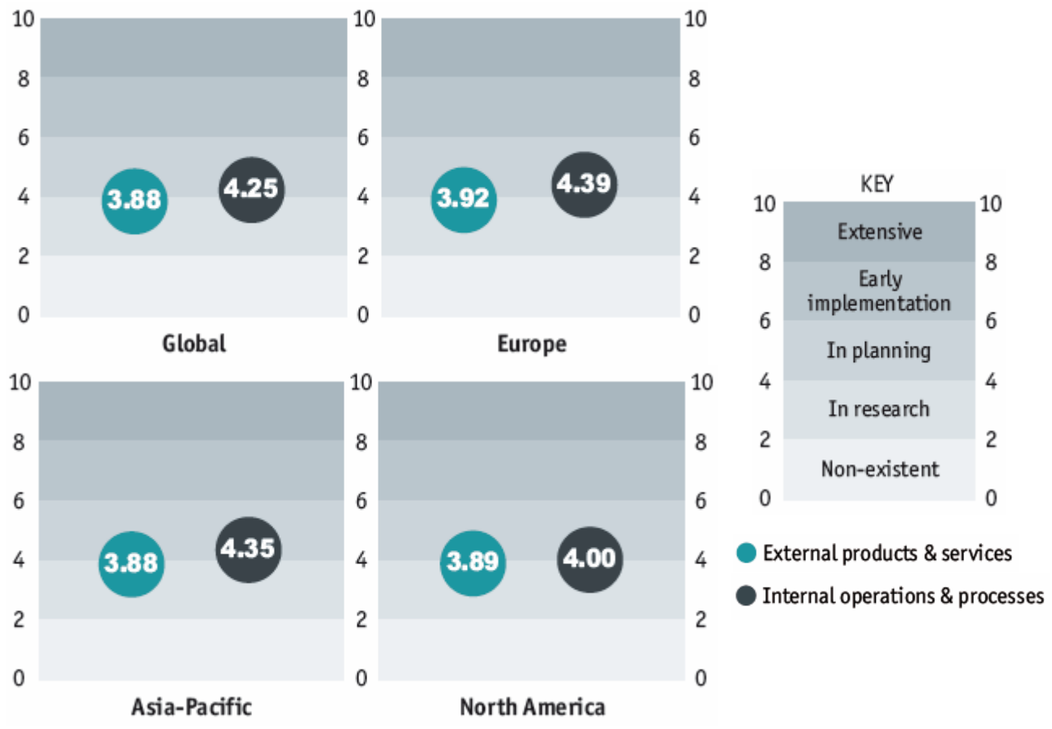


Fig.6. The Internet of Things by Regons

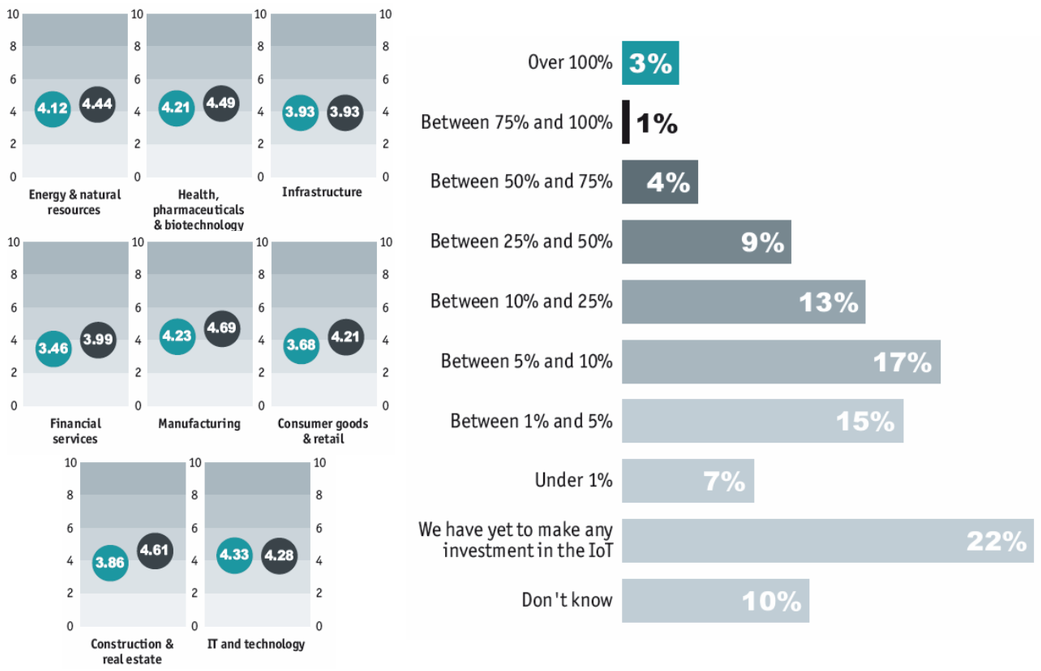


Fig.7. The Internet of Things by Industry **Fig.8.** The Internet of Things Investing

Source: www.economistinsights.com

IoT full adoption, by connecting billions of devices, could generate unpredictable social changes in their entirety. For a full adoption IoT requires a thorough analysis of public perceptions of the benefits and risks of the technology. In this regard, civil society has an important say and application developers and researchers need to take account of this aspect for the development of their concerns, so that the benefits and risks are balanced proportion.

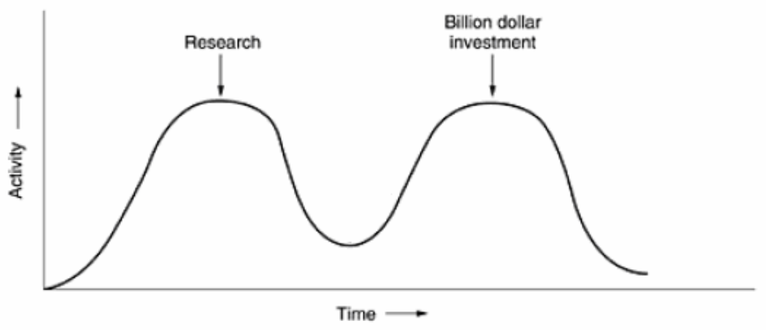


Fig.4. The key moments in adopting new technologies

Evolution of activity while the emergence of a new topic (ideas) is crucial. There is an impressive increase in research activity in the early appearance of articles subject materialized through publications, conferences, meetings. A period of decreasing activities due to exhaustion interest for the subject, again following an exponential increase in activity due to its relevance to investors.

The new concept of manufacturing products is to eliminate those elements that lead to the development of a product difficult, cumbersome to use, etc., resulting in a product in terms of hardware subjected to a limited number of constraints. This friction from the hardware can not be entirely eliminated, with real world constraints that simply can not find, yet, solving the software.

Internet of Things generate software applications are adaptable to many types of devices, it is one of the key advances in Web 2.0 applications in the physical world. Artificial intelligence is present through interconnections between devices that surround us and the many different types of software.

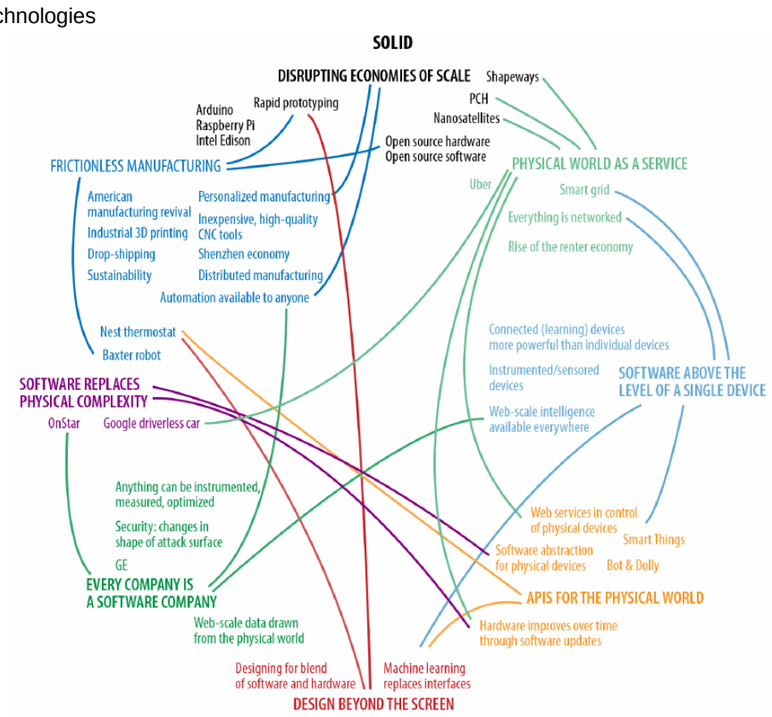


Fig.5. Disruptive economies of scale (adaptation by The Internet of Things is Now, Morgan Stanley, 2014)

Conclusion

In the last decade the software industry has been influenced by a series of revolutionary developments in this area. Internet has become, both in terms of hardware and software, in the middle, the center of gravity, present in all products sold. The role of IoT, so far, is to strengthen and expand existing IT infrastructure. A second digital revolution is about transforming business models so that companies sell their products in a new, completely different and better, predicting consumer expectations.

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