EXPLORING THE FUTURE OF SUPPLY CHAINS THROUGH DISRUPTIVE INNOVATION – THE DIGITAL TECHNOLOGIES

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EXTENDED ABSTRACT

DEVELOP A STRATEGIC RESPONSE TO DIGITAL DISRUPTION

Disruption is one of the most popular terms in management today. The increased interest comes to a great extend from the great opportunities and threats being created by today's powerful digital technologies. The cloud now conveniently and inexpensively provides enough processing power and digital storage, while broad bandwidth and versatile smartphones make the digitals a ubiquitous part of modern life.

In this context, the present study goes deeper into the understanding how digital can disrupt the industry by transforming the industry value chain, patterns of demand and competitive pressures. As well, to leverage digital to develop compelling value propositions that allow to turn disruption from a threat to an opportunity [1].

In particular, this study is focusing on how the Internet and the top technologies are revolutionizing manufacturing. Digital technology is transforming how products are developed, produced and serviced. Big data transforms into smart data, and analytics provide decision makers throughout the value chain with rich insights about the entire product and production life cycles. Customer requirements for product personalization are increasing as are expectations for shorter delivery times.

Digital technologies as Internet of Things, 3D printing, Cloud Technology, Mobile Internet, Augmented Reality, etc. are potentially economically disruptive technologies.

The aim of the present paper is first to discuss how to develop a strategic response to digital disruption. In particular, it presents how the Supply Chains are transforming through the Internet of Things and other digital technologies. Furthermore, it follows an overview of 3D Printing, Blockchain Technology and Augmented Reality, giving proper examples. Finally, some conclusions are drawn about the future of Supply Chains through the disruption innovation with the digital technologies.

TRANSFORMING SUPPLY CHAINS THROUGH INTERNET OF THINGS, BLOCKCHAIN, AND 3D PRINTING

Gartner has identified that the Internet of Things (IoT) is one of the top technology trends nowadays. In this study it is investigated the innovative opportunities the IoT offers to Supply Chain businesses [3].

The IoT is set to transform daily business operations in ways we never thought possible. Businesses that are thinking about how their Supply Chain can be enhanced via smart, wearable technology that plugs into a company's business management software, will not only be able to tap into vast amounts of data generated by technology users, but also drive access to better real-time business insight. Such technology will help management better understand the behaviours and preferences of employee and customers.

In essence, Blockchain is a technology for decentralized storage of transactional data. It is a term that is relevant to the finance sector. The storage of a transaction is organized in so-called blocks while the following transactions are stored in new blocks. The sum of several blocks makes up a chain which is a

logical sequence of transactions. Every transaction contains a timestamp and it is secured by a cryptologic process. This chain works like a database which is updating its information continuously, with the difference that the chain is stored on every hard drive or computer being a part of the Blockchain network. All changes are recorded and encrypted in real-time and in an audit proof way. Additionally, the changes are authenticated based on the consensus principle. This means that transactions can be verified by all members of the network at any time [4].

Likewise, 3D printing is going to have a major impact on the Supply Chains and it is important to investigate how and where this technology can be leveraged most effectively. Around the world, businesses, governments and educational institutions are embracing 3D printing technology.

Major brands and corporates are already harnessing additive manufacturing to get ahead in competitive markets. For example, Nike is partnering with HP and using the HP Jet Fusion 3D printer to produce 3D printed footwear at greater speeds than ever before – reaching a dizzying new height of customization and innovation.

With additive manufacturing some analysts are predicting the rise of a 'factory-in-a-box' scenario whereby there will be no longer need of multiple machines to make a single product [5].

The present study deals also with the new technology called Augmented Reality – it is enhancing what we see, hear, feel and smell. On the spectrum between virtual reality, which creates immersive, computer-generated environments, and the real world, Augmented Reality is closer to the real world. Augmented Reality adds graphics, sounds, haptic feedback and smell to the natural world as it exists. Both video games and cell phones are driving the development of Augmented Reality [6].

CONCLUSION

Supply Chains are on the wave of an evolution. Digital technologies hold the potential for increasing their competitive agility by dramatically changing how businesses design, source, make, deliver and service products. Most executives understand how essential these changes are to the business and 85% of Supply Chain executives are already working to introduce new digital capabilities into their operations.

By transforming into a digital enterprise, industrial companies can strengthen competitiveness, increase flexibility and shorten time-to-market while also improving efficiency and reducing costs. They can get closer to their customers, collaborate across the value chain, improve agility and adaptability, and realize higher success rates with innovation [2].

Keywords: Disruption, Supply Chains, Innovation, Digital Technologies, Digital Enterprise.

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