E-Marketing Strategies

The effect of the Internet of Things on the Customer Journey

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1. Introduction

The retail market has always been influenced by technological developments. Whenever technological advancements occur, the retail sector tries to incorporate the innovation in order to create value for companies and customers alike. The latest advancements in retail technology are highly connected to the internet. We live in a new era of a demand driven economy where customers have constant access to more information which they use in order to make informed decisions. The transparent environment that has arisen is one that depends on the reciprocity of information between customers and companies. On one hand, customers are increasingly becoming more comfortable with sharing personal data to various mediums such as social networks, platforms and mobile carriers. On the other, companies strive to fulfill the customer demands for a shortened and more transparent retail supply chain that can offer more products faster and in a sustainable manner.

What retailers and customers alike have been looking for, is a technology that can connect their two different but connected needs. That is succeed in fulfilling the increased demand for a more personalised shopping experience along with leveraging the emerging trend of personal information sharing for the benefit of the company. The answer to the above can be given through the Internet of Things (IoT) concept. The IoT envisions a constantly connected world of devices and subsequently persons that work together to translate shared information into informed actions.

This paper is an attempt to produce an updated Customer Journey Mapping tool aiming at developing marketing strategies in the era of the Internet of Things. At first relevant contemporary literature on the Customer Journey is reviewed leading to the Mapping methods used today. The most modern theories on the Internet of things are then presented motivating the importance of developing a new mapping tool based that is

able to respond to recent developments. A step by step model is presented in an attempt to fill an apparent gap in modern business theory that could prove valuable in forming marketing strategies in the near future.

2. Literature Review

2.1. Customer Experience

The importance of Customer Experience for businesses has been growing over the recent years with a variety of implications for marketing which is usually called upon to respond to this shift. The advent of internet facilitated the rise of e-commerce and subsequently gave more power to the consumer and a rise in competition. While customers have always had the opportunity to respond to their experiences with companies, they are now able to spread them to a wider audience in more explicit ways. Furthermore, competition has been ever more intense, powered by the ability of direct comparison and wider access. As such, businesses which have traditionally given weight to product features as a means to success, now move their focus towards Customer Experience, or face negative consequences. Marketing's response to this change of balance has been rather fragmented, uncoordinated and although well-intended, set to fail in delivering a meaningful results for the business. It becomes apparent that there is a need of inspecting and responding to the customer experience in a more sophisticated and solid way.

Customer experience is the internal and subjective response customers have to any direct or indirect contact with a company. Direct contact generally occurs in the course of purchase, use, and service and is usually initiated by the customer. Indirect contact most often involves unplanned encounters with representations of a company's products, services, or

brands and takes the form of word-of-mouth recommendations or criticisms, advertising, news reports, reviews, and so forth.[1]

Today's world poses certain challenges for business routed in its hyper-connected and hyper-competitive nature. Increased connectivity means moving away from the one-way traditional and lagging communication, where companies come to touch with customers through traditional channels. Reciprocal communication not only B2C but C2C means that customer experiences are shared among peers affecting each other, in turn affecting the company's' image to the wider audience in almost real-time. Also, abundance of information and easy access to numerous alternatives allow consumers to change their behavior and purchase decisions according to their experiences instantly. This disruptive change is further facilitated and brought together by the increased disposable income in modern capitalistic societies; fitting this to Maslow's hierarchy of needs[2] consumers are increasingly motivated to move a bigger percentage of their income from utilities to products to services to experiences. All in all, traditional product-based competitive advantage gives way to an experience-based one and business wishing to stay ahead of their competition need to develop thorough and sophisticated Customer Experience Management processes to respond effectively.

Customer Experience Management is the practice of designing and reacting to customer interactions to meet or exceed customer expectations and, thus, increase customer satisfaction, loyalty and advocacy[3]. Successful CEM requires overseeing and tracking all interactions between the company at every touch-point during their relationship and involves developing a strategy around the needs of individual customers. These customers

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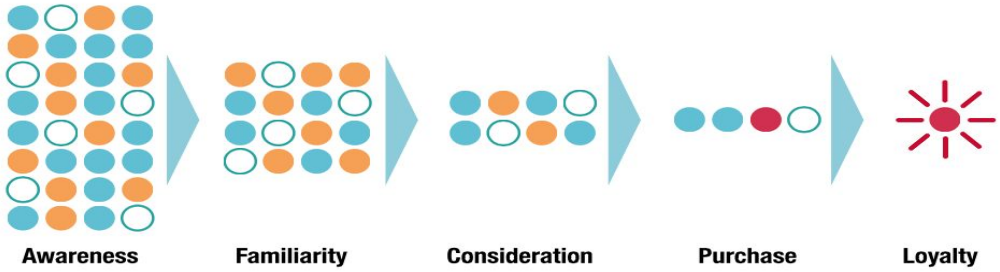
[1] "Understanding Customer Experience - HBR." 2014. 18 Jun. 2015 <https://hbr.org/2007/02/understanding-customer-experience>

[2] Huitt, W. (2004). Maslow's hierarchy of needs. *Educational psychology interactive*.

[3] (2013). Customer Experience Management - CRM - Gartner IT ... Retrieved June 18, 2015, from http://www.gartner.com/it-glossary/customer-experience-management-cem.

traditionally have had to make a series of decision filtering their options in each step in a "funneling" manner till the decision of purchase is made. The process has been called the "customer decision journey" and has been used as a marketing tool. It's original straightforward form though depicted below has recently been challenged.

Figure 1 Traditional Customer Decision Process[4]



2.2 1st Disruption: Customer Journey and Internet

Change happens gradually; more specifically in 3 phases[5]:

A. Phase 1: Adapting existing systems and functions
B. Phase 2: Applying new possibilities within the existing context
C. Complete renewal based on new possibilities and close integration of the digital and physical - Disruption

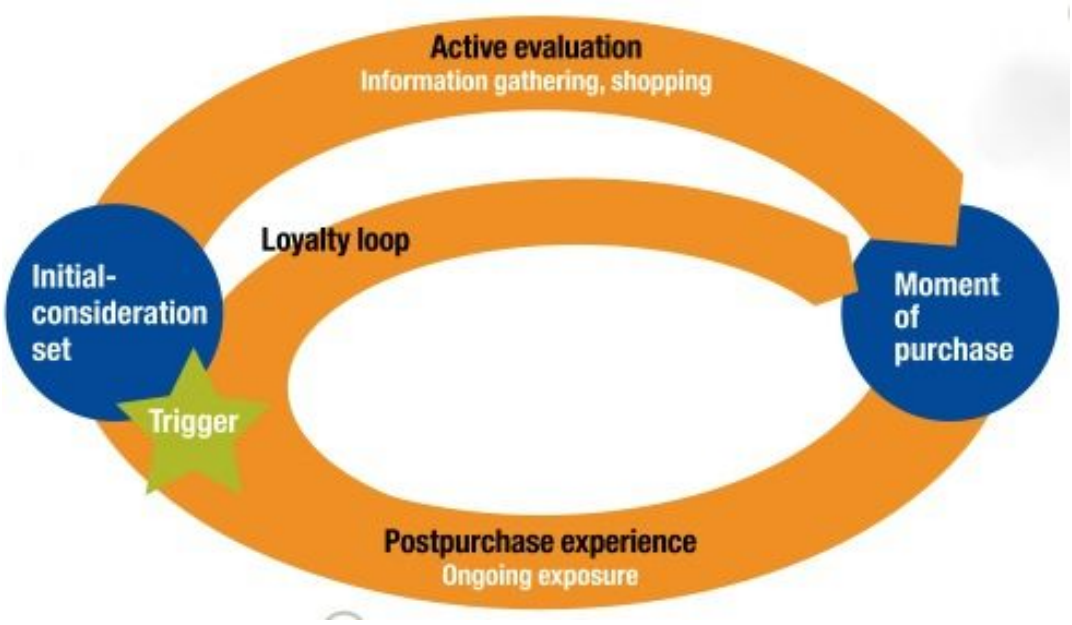
The internet at its early stages indeed worked in enhancing way to existing process and later on, in an additive way upon those processes. But it is clear that the Internet's most significant contribution is as a disruptor that fundamentally changed our ways and perceptions of consuming, radically altering the market's status quo. Today this integration of physical and

[4] Elzinga, Dave, Susan Mulder, and Ole Jorgen Vetvik. 2009. The consumer decision journey. *McKinsey Quarterly* 3: 96-107.
[5] Molenaar, C. (2015, June 28). *Why Customers Would Rather Have a Smartphone than a Car: Relationship Retailing as an Opportunity*. Ashgate Publishing, Ltd.

digital business world is more apparent than ever. The Customer's Journey stands at the core of this disruption having changed drastically.

Touch points between customers and business have been altered with the addition of reciprocal channels of communication like the social-media, or independent information exchange platforms (e.g price comparison, review websites). This renders the "funneling" model outdated since the size of the awareness set doesn't decrease with each stage; rather company's may be added during every one of the following customer decision journey stage. Furthermore, the purchase is not the end of the journey; in contrast the post-purchase experience cycles back into a continually improving awareness set based on experience. This transforms the customer decision journey from an one-way funnel model to a self-feeding loop as depicted below.

Figure 2 Updated Customer Decision Journey



2.3 Customer Journey Map

The Customer Journey Map is a tool used to track and analyze the user experience and assess the quality of a process or a service. More specifically it's a linear, time based representation of the main stages that a customer goes through in interacting with a company or a service. User experience can be defined mainly as a process, a flow which starts from an initial/entry point and goes to an end following intentions, motivations and goals of the users. With the Customer Journey Mapping, this experience flow is divided in a few key stages. Starting from the analysis of the users behavior, for each stage specific goals, intention, touch-points, tools and issues are identified. Lastly the focus broadens on the connections and the dynamics between the stages. The process has been summarized in the following steps[6]:

1. Review Goals: Set organizational goals for the product or service

2. Gather Research: Review all relevant user research (e.g customer interviews, ethnography, customer surveys, web analytics, social media listening, and competitive intelligence)

3. Touchpoint and Channel brainstorms: Generate a list of the customer **touchpoints** and the **channels** on which those touchpoints occur today.

4. Empathy map: Depiction of the various facets of a **persona** and his or her experiences in a given scenario. Helps organize observations, build a deeper understanding of customers' experiences, and draw out surprising insights into what customers need. The goal is to get how it feels to be that persona in this experience.

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[6] "How to Create a Customer Journey Map -UX Mastery." 2014. 23 Jun. 2015 <http://uxmastery.com/how-to-create-a-customer-journey-map/>

5. Brainstorm with lenses: “Lenses” are words representing key concepts, brand attributes or mindsets that help us look at a problem or scenario in a different way. Each person of a marketing team individually writes down as many ideas as they can think of. This way every voice on the team is heard, generating a huge inventory of ideas.

6. Affinity diagram: This is a method to visually organize lense-ideas and find cohesion in the team’s concepts. It helps us gain focus on the right solutions for this audience.

7. Sketch the journey: Put together all the pieces in order to improve the future customer journey. Get creative with how you lay it out—it doesn’t have to be a standard left to right timeline.
8. Refine and digitize: polish the produced customer journey map; leverage it in your work by easily sharing it with colleagues across the organization. While journey maps are usually a tangible deliverable, the process of journey mapping is what’s most important – it pushes us to think deeply about how we can use experience design to have a positive impact on our customers.

9. Share and use: It can be beneficial to maintain journey maps over time. If your organization tracks quantitative KPIs, you can integrate these into a journey benchmarking process. Socializing journeys among stakeholders is critical in moving your organization toward action. In addition to prioritization, the output of a journey map can serve as a backbone for strategic recommendations and more tactical initiatives.

2.4 2nd Disruption: Customer Journey and Internet of Things

To summarize the previous points, we previously explored how technological advances have disrupted the Customer Experience. Initially the Customer Experience was led by companies in an one-way broadcast-like model. With the commercialisation of internet, consumers for the first time had a say in their experience since the communication between them and businesses became reciprocate. A tool to analyse and help us build the right strategies was introduced: the Customer Journey Mapping. Now the Customer Experience is set to be disrupted once again with the rise of the a new "kind" of internet: the Internet of things. This new internet has been variously dubbed the internet of things, the web of everything, or less excitingly, the next obvious step[7]. It will involve embedded sensors in objects, customers, companies will be able to communicate with each other leading to a multi-way communication. It becomes evident the IoT will render the existing the Customer Journey Mapping obsolete; a new method to analyse the customer experience is needed in order to come up with strategies responsive to the challenges brought about by this new revolution

2.5 Internet of Things

Web 2.0, 3D Internet, AI the technology sector seems keen on coining new terms in an attempt to describe the future of networking and also

[7] "Is business ready for the Internet of Things? - Telegraph." 2014. 19 Jun. 2015 <http://www.telegraph.co.uk/technology/technology-topics/10880765/Is-business-ready-for-the-Internet-of-Things.html>

encompass the hopes of new potential disruption of the current state of things. Most of these terms tend to not be explicitly explained exactly for that reason. The technology world always dreams and envisions a new future only to be brought back down to earth by the constraints of the business world and of consumer adaptation and acceptance. The latest concept increasingly gaining ground for at least the last five years is no other than the Internet of Things (IoT).

An academic definition of the IoT seems a rigid and restricting one for a subject that is constantly developing with a tremendous pace. Instead it seems more prudent to provide one of the latest and most inclusive definitions that takes into consideration the way that IoT has developed in recent times. Altimeter group, a well-known consulting company dedicating its operations to the latest disruptive technology trends, succeeds in this task. According to it[8], IoT is an interconnection and interaction of the digital and physical worlds, wherein uniquely identifiable embedded technology connects and integrates physical 'things' to information networks via existing and emerging Internet infrastructure. IoT is a platform for connecting people, objects, and environments to inform and enable visibility, engagement, and innovation.

The development and lowered costs of modern processing power and storage capabilities have provided technology companies with valuable tools for the development of future products and services. The key objective nowadays is how these companies are going to harness the abundance of data and networks available in a way that can prove valuable to them and their customers. Thus, the IoT is a concept that goes hand in hand with this approach of organizing what has been described as Big Data.

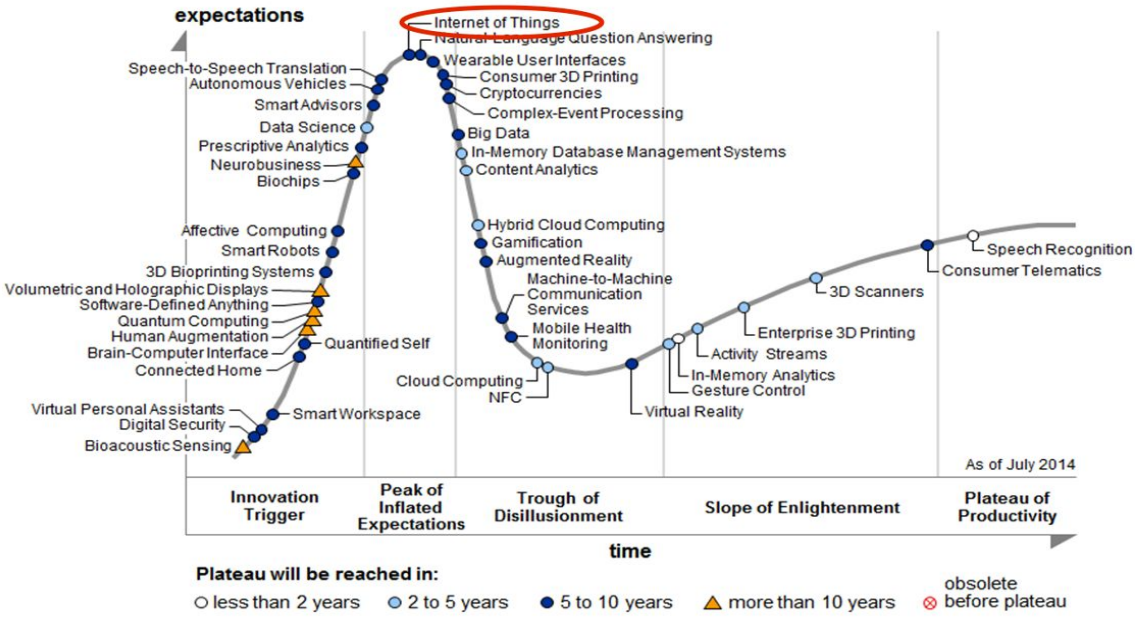
[8] Altimeter Group Report, "Customer Experience in The Internet of Things", http://www.altimetergroup.com/2015/03/new-research-customer-experience-in-the-internet-of-things/ [Accessed 14/6/2015]

At the center of the IoT for consumers and as its facilitating medium lies a technology that has revolutionized communication the last years, the smartphone. It is the central hub through which the customer will be able to communicate and experience with the world of the IoT. The idea behind it is that everyday objects and machines that are going to become “smart” will not have new and complex user interfaces. They will rather be equipped with simple and low energy consuming processors and sensors that will collect data and/or stimulate triggers which in turn will be later distributed to more advanced devices (smartphones, the cloud). There the data will be deciphered to valuable information, which in turn will help the consumer make decisions and resolve to specific actions. The directness and personalization ability of this process is the most exciting aspect behind the concept of the Internet of Things. With the help of the adequate devices customers will be able to be targeted and approached by companies with the optimal strategy with regards to their profile and preferences.

Before we attempt to describe the effect that the IoT will have on the customer experience and in general to customer faced organizations, it is necessary to showcase some of its most important applications in order to understand the true potential that lies in it. From smart farming, to smart cities and traffic management, IoT is expected to impact various economic sectors making them more efficient and sustainable. Sensors are going to revolutionize our interaction not only with everyday use objects but also with infrastructure. Maintenance decisions and proactive prevention of accidents are going to be introduced after real-time analysis of gathered data. Transportation grids are going to be optimized for the better service of commuters. These solutions are going to lead to energy saving opportunities, creating a more sustainable environment.

The IoT concept has gained a real momentum throughout the past years. Expectations for its potentials reached their peak in 2014 according to Gartner's influential technology graph which provides an assessment of the maturity, business benefit and future direction of more than 2,000 technologies[9]. According to Gardner in the following five to ten years the technology world is going to settle on the realistic possible usages of IoT and that appears to be the real timeline when significant impact can be expected. Moreover, consulting company PwC forecasts that sensor investments across industries are an early indicator of the IoT's progress. In their 6th annual Digital IQ survey contacted on nearly 1500 businesses and technology executives, 54% out of the top performing companies participating in the survey, stated that they were going to increase their investment in sensors in 2015[10]

Figure 3 Innovation Phases



[9] Gartner Hype Cycle for Emerging Technologies 2014

[10] PwC Report, "Sensing the Future of the Internet of Things", http://www.pwc.com/us/en/increasing-it-effectiveness/assets/future-of-the-internet-of-things.pdf [accessed 20/6/2015]

Another company heavily invested in the future of IT in business, SAP is forecasting that by 2018 there will be an $326 billion revenue opportunity thanks to advancements in the IoT[11].

3. Developing an IoT Strategy with Customer Journey Mapping

So the Internet of Things is on it's way and about to change everything; again. How can businesses respond effectively to this disruptive force? How can they adapt functions in the right way and in the right time? The customer has already been in the centre of focus since the advent of internet; value chains have been realigned with the customer at the starting point and the economy has been transformed into a demand driven one. Understanding the Customer Experience and their Journey along the lines of the brand is the right way to adapt strategies in the IoT context. Furthermore IoT is disruptive in its nature which means it will lead to customer friction but also new possibilities. Thus the Customer Journey Mapping tool presented above needs to be revisited and revised on the basis of the IoT. A new model updated to meet the unfolding IoT world is presented below.

1. Set Goals

Including the Internet of Things in the Customer experience means new touchpoints, sensor fitted objects and communication platforms.

[11] SAP Report, "The CEO Perspective: Internet of Things in Retail (2014)", https://www.sap.com/bin/sapcom/tr_tr/downloadasset.2014-09-sep-11-18.the-ceo-perspective-internet-of-things-for-retail--top-priorities-to-build-a-successful-strategy-pdf.html [accessed 17/6/2015]

Companies shouldn't just include each and every of these things in the customer experience; this approach is not only costly but has also the potential to backfire. In order to implement the right IoT applications strategists should initially agree upon and define a clear vision for the implementation of IoT in their business. They should ask themselves: What kind of Customer Experience we want in the future? What sensor based objects are relevant to that? Can existent function transformed in that direction or used to give new direction?

2. Gather Research

Internet has been long established; Big Data is already here. Companies using this mapping tool already probably have an abundance of data on their customers through webanalyitics, sales data or traditional research techniques like panels and focus groups. All this, used in the right way, have allowed for a great deal of improvement in customer insight. Big Data has brought company strategies and customer needs extremely close. But have they met? The answer is no. Data analysis has allowed for relatively accurate predictions and customer profiling. Relatively, that is, in comparison to empirical techniques used in the pre-digitised world.

With the internet of things the customer is surrounded by devices enabled to record behavior in unprecedented detail at all times and more importantly in multiple dimensions: Sensor-based touch points enable companies to collect data on offline behavior for the first time, leading to a more complete feedback on the service/product. Furthermore, IoT provides real-time data not only on the consumers side but on the product side as well leading to a more detailed and on-time evaluation of their interaction. Finally, consumer/product interaction allows for customer-driven optimization, a form of immediate, active feedback instead of information feedback that would take time to analyze and

incorporate. All these new forms of data available through the IoT provide a more detailed and timely insight into the Customer Experience.
Marketers can use this to deliver their product/service with the right Experience in the right context at the right time.

3. Channels and Touchpoints

With IoT the Experience is expanded. New touch points are introduced, fitted with sensors, enabled to communicate. We are now moving away from the two-dimensional Brand - Consumer communication. Objects are added to the dialog which include: object to brand, object to customer, object to object. An equally multiplied amount of channels between them are also generated. These new parties in the communication need to be documented and examined. The new touchpoints will come with new customer friction and pain points. Focus moves away from information, on to action; Marketers need to explore not what customers get to know but what they get to do or want to do.

4. Empathy Map

IoT will transform the Customer Experience from a digital/informational one to a contextual one based on feelings. For this reason the step of Empathy Map is probably the most altered in the process of mapping but also the most informative and insightful.
The marketing team should evaluate all the possible touchpoints and channels accumulated in the previous step. For each suggested new deployment the team must put itself in the shoes of the customer. Questions to be asked are: What value does this add to the customer experience? Does it motivate them/entice them/engage them? Is this in alignment with the preset goals? Does this really add up to the experience or is it more of a hassle?

Technology constitutes a great motive for engagement, especially through action, but it might as well become a barrier. More specifically, strategy developers should keep an eye for the friction caused by new touchpoints. New touchpoints also bring with necessity for learning and familiarizing. Both of these obstacles cannot be overcome but they can and should be minimized.

Moreover, during the construction of the empathy map, the team should focus on the new element of the equation: the objects. The Customer Experience needs to be expanded to the physical dimension and Customers now need to be *involved* instead of *inspired* . With this in mind the team should go through the customer journey and ask themselves: What objects are already involved and how can they be integrated? What objects could be involved but are not yet there? This way they can generate a list of existing objects and potential objects that should be considered being integrated.

This approach while insightful, is limited by the researchers' knowledge and imagination. There is a whole spectrum of possibilities not uncovered. Customers should be consulted on their take of the experience. Not only do they know better what they want but sometimes they come up with creative ideas totally outside of the initial experience. A prime example is the Chamberlain garage door opener company where users made the business realise that by using the garage as a main entrance the experience could be vastly expanded and integrated into the household with great potential opportunities for the company; opportunities that would otherwise wouldn't have been uncovered.

5. Brainstorm with Lenses

While lenses can be any key concepts that help us shed light into the IoT Customer Journey, the team can think of, there is one principal lense or filter everybody should keep in mind in this process. They key facilitator

that ensures IoT application success is integration and consistency. New touchpoints, objects or content involved in the Customer Experience must emerge seamlessly and contextually based on where individuals are throughout their journey. This principal has to be kept in mind, serving the purpose of a filter while generating ideas for improvements or troubleshooting.

6. Affinity diagram

Lense-produced ideas and solutions should be later brought together in a coherent manner. Each selected solution must comply and respond the pre-set business objectives.

A future based on IoT solutions is bound to be structurally different; a gap analysis between present and future positions and goals can help justify proposed ideas. This will prove useful in involving reluctant parties to be affected by the impending changes, a problem addressed at a later step.

7. Sketch the Journey and its Development Plan

Put together all the pieces in order to improve the future customer journey. Stress the points that will be improved and their positive impact on the business. Develop a timeline for application of the new Customer Journey and possible expansion.

8. Refine, Share, Implement

A customer Journey Map based on a IoT experience is going to have tremendous effect on all company parties. Not everyone is ready to accept this kind of change. The first step is to make the Map attractive, informative and easy to comprehend; this way it's more possible that it will at least be given a chance to be read. Secondly, the key benefits must be presented and outlined; different teams have different objectives and everyone should see

the long term or short term benefit in order to embrace the plan and work towards its implementation.Finally, top management must be convinced and on board with the plan in order to communicate it and motivate company members to make the new IoT Customer Journey Map their own.

4.Conclusions

The paper has intended to present the way in which the IoT is going to disrupt the modern retail Market. More specifically we have proposed changes on how e-marketing strategists will have to approach and design the Customer Journey Map taking into consideration the new retail environment that IoT is going to establish. It is our strong belief that the IoT will not be just another term describing unreached expectations for the future of Internet. The IoT is here to stay and play a decisive role in a world where companies and customers need to capture intelligence faster, from many external sources. As it becomes an established concept, the technology sector doesn't stop evolving. The next stage of the Internet that has already attracted attention and publications is The Internet of Everything (IoE). The IoE takes into consideration how connected things are going to positively affect people's lives through efficiency and effectiveness, hereby improving their quality of life. Forward thinking IT giants like Cisco are already trying to define this new future and find ways to leverage it into the advantage of its customers. According to their estimations only 10 billion out of the 1,5 trillion things globally are connected to the Internet[12]. This figure shows the huge potential for future connectivity across devices. Technological disruptions are bound to boost the market even more with Cisco estimating $14,4 trillion "up for grabs" for enterprises globally, driven by the IoE. When designing a marketing strategy, today's marketers always have to keep in mind the tremendous rate of progress and deliver flexible plans that embrace growth and connectivity.

[12] Cisco Report - "Embracing the Internet of Everything", http://www.cisco.com/web/about/ac79/docs/innov/IoE_Economy.pdf (accessed 21/6/2015)

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