

Marketing in the Era of The Internet of Things

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Abstract

Nowadays, the Internet of Things is thought to be a revolution that has come to change every sector of everyday lives. It is present in our homes and offices with smart devices, but mainly in businesses. This paper discusses the future of the IoT and explains how marketing can use the IoT to acquire more power and improve its results. To better understand this concept, some real examples are presented.

[Internet of Things, Marketing, IoT]

1. Introduction

Traveling back to history, we can find four industrial revolutions. The first one was the movement to mechanized power, the second one was about mass production, and the third one was about computers. Nowadays, Internet of Things (IoT) is the fourth industrial revolution, which is thought to combine digital, human and physical domains.

The IoT has significant applications in the business world, too. Obviously, the IoT has impacted marketing, as it creates a new connected universe full of new possibilities. The existing tools allow marketers to answer critical questions like “what are customers buying, when are they buying, how are they buying, and where are they buying”. The innovation of IoT is the fact that marketers can now find the answer to the most important question of all: WHY are consumers buying what they are buying.

The purpose of this research is to explain the new possibilities of marketing through the utilization of the IoT. Firstly, we explain briefly the terms of IoT and digital marketing. Then, we present the impact and the future of IoT in our life. We also discuss how the IoT can be combined with marketing and we analyze the ways that this new technology will impact the marketing world. Finally, the necessity of IoT is demonstrated by some applications in business world.

2. Definitions

2.1. Internet of Things

The Internet of Things (IoT) is a novel paradigm that is rapidly gaining ground in the scenario of modern wireless telecommunications. The basic idea of this concept is the pervasive presence around us of a variety of things or objects – such as Radio-Frequency Identification (RFID) tags, sensors, actuators, mobile phones, etc. – which, through unique addressing

schemes, are able to interact with each other and cooperate with their neighbors to reach common goals [5].

By browsing the literature, an interested reader might experience a real difficulty in understanding what IoT really means, which basic ideas stand behind this concept, and which social, economic and technical implications the full deployment of IoT will have. The reason of today apparent fuzziness around this term is a consequence of the name “Internet of Things” itself, which syntactically is composed of two terms. The first one pushes towards a network oriented vision of IoT, while the second one moves the focus on generic “objects” to be integrated into a common framework [5].

Simply, we can say that IoT connects any device to the Internet (and/or to each other). This includes every device that can be imagined, such as cellphones, coffee makers, washing machines, lamps, wearable devices, etc.

2.2. Digital Marketing

Digital Marketing is a broad term that refers to the targeted, measurable and interactive Marketing of products or services using digital technologies.

According to the Digital Marketing Institute, Digital Marketing is the use of digital channels to promote products and services to customers and businesses. Many equate Digital Marketing with Online/Internet Marketing, but the truth is that their actual procedures differ as Digital Marketing is considered as more targeted, measurable and interactive. In addition, it includes channels that do not require the use of the Internet.

3. The impact and the future of IoT

The Internet of Things may sound like an ambitious project, but in reality, it’s a real technological revolution that will impact everything we do and change the face of technology as we know it.

IoT will have a great impact on our everyday lives as it will change the way traffic, weather, pollution, and the environment are monitored and how data is collected. What is more, smart devices will give us deeper control over our lives, like enhancing a door lock so that it contacts you when someone opens it when you are not at home.

IoT is expected to generate huge amounts of data from multiple objects and to aggregate it very quickly. Over 90 percent of the existing digital data has been created in the last three years. Consequently, smart devices have flooded our homes and offices to the point that they have become a vital part of our daily lives [1].

IoT will soon mean more than just smart refrigerators, environmental alerts, and wearable technology; it will have the enormous impact on the way we do business, specifically where marketing is concerned.

Our IoT world is growing at a breathtaking pace, from 2 billion objects in 2006 to a projected 200 billion by 2020. That will be around 26 smart objects for every human being on Earth [3]!

In 2015, there were an estimated 10 billion connected devices globally and the impact of these connected smart devices on the global economy was estimated at close to \$2T [1]. Moreover, 51% of the world’s top global marketers expect that IoT will revolutionize the marketing landscape by 2020 [9].

The majority of IoT smart devices are found in factories and businesses (40.2%), healthcare (30.3%), retail (8.3%), and security (7.7%). This can be explained by the fact that smart objects offer to these industries the vital data they need to track inventory, manage machines, increase efficiency, save costs, and even save lives. By 2025, the total global worth of IoT technology could be as much as USD 6.2 trillion—most of that value from devices in health care (USD 2.5 trillion) and manufacturing (USD 2.3 trillion) [3].

4. Combining IoT with Marketing

IoT can be combined with one of the following relatively new styles into the existing world of consumer-oriented marketing. These are “context marketing”, “benchmark marketing”, and “collaborative marketing”.

The success or failure of consumer-oriented businesses will depend on whether they can quickly combine the above three marketing approaches to provide what might be called “concierge-like” services for consumers.

To explain better the term “concierge-like” services we can say that it is like having at your side the concierge of a hotel where you have stayed for many days [2].

4.1. Context marketing

Context marketing is a system that targets individual consumers to reinforce their intentions to purchase. It captures the very moment when somebody’s need for merchandise or services emerges, and promotes goods and services that are best suited to such person’s tastes and interests. In addition to the above-mentioned data, it is also possible to acquire information about the date, place and specific activity of a customer.

This provides information as to whether the person has left or entered a station. With this knowledge, it would be easy to determine whether to provide information about a bargain sale near the station or other information related to the person’s destination. In this environment, it becomes possible to appeal to a customer at all times just as easily as it is when the person is working with a computer. In other words, necessary information can be delivered on a push basis just when the person needs it, unlike a monthly direct mail announcement or a daily insert in a newspaper [2].

4.2. Benchmark marketing

Benchmark marketing is a sales promotion tactic to stimulate a willingness to purchase by consumers through providing consumer communities with certain “benchmarks” including product evaluation rankings and comments or advice by recognized experts.

Consumers can make better selections in their purchases on the basis of the self-confidence that comes from referring to these benchmarks concerning the merchandise that is offered. This process may eliminate barriers that otherwise prevent consumers from making actual purchases and may enhance their satisfaction after buying [2].

4.3. Collaborative marketing

Collaborative marketing refers to a type of cooperative process between a company and consumers through knowledge sharing at a stage prior to the planning, development and final production phases. In this process, the company may establish customer groups with a high degree of loyalty by securing a strong commitment from consumers (willingness to participate) and by offering limited or customized goods.

The development of IoT may make it possible for companies to share more knowledge with consumers in the future, especially in the highly sensitive field of merchandise design or brand concepts—something that was impossible by means of static pictures and text alone [2].

5. The New Era of Digital Marketing and The Applications

5.1. The New Era

IoT enables multi-way communications between brand and consumer, brand and object, consumer and object, and object and object.

According to Steve Reed, VP of Client Development at Elevation Marketing, “We are on the cusp of revolutionary technological change. The inherent value of the Internet of Things is in connecting devices to the cloud, which is no different whether you are on a farm, in a factory, or any of a billion other places. With the advancement of IoT, every industry will enjoy countless opportunities to market to potential buyers, precisely target customers and achieve instant results” [12].

With all of these devices connected to the internet and monitoring our behaviour, the big opportunities for marketers are summarised neatly in just one phrase – the application of data for advancement [6]. Here are some **specific ways** in which the Internet of Things will impact marketing.

5.1.1. Easy Exchange of Sales Data/ Consumer Behavior

One of the most valuable commodities to any business is sales data. By having access to information regarding how, where, and why your products are being purchased and used, you’ll be able to better tailor your marketing efforts towards your specific clients.

Smart devices that can gather this data and supply it back to you in real time, without the need for IT professionals to direct or monitor the interaction, will allow businesses to create informed marketing strategies and improve ROI on future sales.

Perhaps even more important, customers will be able to provide useful feedback instantaneously. So, if a specific product isn’t living up to expectations, you won’t have to wait very long at all to find out about it, which means that you’ll be able to cut your losses much sooner than later [13].

5.1.2. Better Personalization

According to Rishi Modi, the CEO of Xhtmlchop, “In the past, marketers bought ads on sites they anticipated their target was likely hanging out on. Today, thanks to the Internet of Things, the guesswork is out of it. It’s easy to precisely track customer data and behavior and this not only allows marketers to make faster, fact-based decisions, it also helps them create better customer experiences based on previous interactions with them.”

Marketers will be able to interact with the consumer on a ‘real-time’ basis and personalize the customers’ in-store experiences. Today, multiple precise indoor location technology solutions can tell a marketer when a consumer has been lingering near a product for an extended period of time, but has not purchased. The marketer can then send a message on the consumer’s smartphone to provide help with making the selection or offering a promotion (provided the shopper has agreed to receive such messages) [4].

5.1.3. Customer Intimacy

IoT will generate an increase in the number and sophistication of touch points with both consumers and other businesses. More objects and devices connected to the Internet will translate into more opportunities to interact with each other through digital. Coupled with an ever-increasing understanding of consumer behavior through comprehensive usage data, the

high number of contact points will allow marketers to better target potential customers and better tailor interactions throughout the marketing funnel [1].

IoT gives firms an opportunity to rebuild an intimate connection with its customers. These same technologies – social media, cloud computing and the IoT have empowered customers too, enabling them to be able to provide useful feedback instantaneously. So, if a specific product isn't living up to expectations, marketers won't have to wait very long to find out about it, which means that they will be able to cut their losses much sooner [4].

5.1.4. Location-based mobile advertising

Mobile advertising applications generally take advantage of demographic or other data provided by consumers, which are used for the targeted delivery of promotional information. Some of these applications are location-based; they deliver advertising messages only to those users who are physically located near the retailer whose products or services are being advertised.

These applications use one of the two modes of information delivery: push (promotional information is automatically sent to the consumers) or pull technology (promotions are sent at the consumer's request).

A context-aware system operates and adapts itself based on the knowledge about its user's state and physical surroundings. As a special case of location-based applications, context-aware systems are enabled by location-sensing technologies, such as wireless radio frequency (RF) and GPS sensors, Bluetooth and Wi-Fi wireless LANs [11].

5.1.5. On-demand services are expected everywhere

Consumers have always wanted convenience, and IoT takes convenience to a whole new level. In the past, convenience meant a shorter drive to the grocery store. Today, convenience means that your groceries show up at your front door. We're now accustomed to nearly on-demand anything: food, music, movies, people, etc.

IoT increases consumer expectations of convenience, and if marketing does not cater to that expectation, then customers won't think the product is worth the effort. Marketing must react accordingly to both promise and deliver higher degrees of convenience [8].

5.1.6. Smarter CRM: Instantaneous Customer Analysis

When used in conjunction with a dependable customer relationship management (CRM) tool, the IoT will be able to do more than simply gather and organize client data; it will be able to efficiently and accurately analyze that data as well, providing you with actionable results regarding your consumer base.

For marketers, this can be invaluable, given that the buyer's chain of command is often long, and decisions take more time to be made. IoT devices can streamline this process by helping you understand where your prospect is in their buying journey, so that you'll be able to make every second of every day count towards resolving issues and serving them the right information that will nurture them to ultimately close a deal [13].

5.1.7. Predictive Social Media

The IoT is already optimized for use with social media, allowing automated posts and shares to be regularly generated by the devices themselves, and preparing the way for new online communities to develop centered around users of particular devices.

Marketers who are able to predict the development of these social communities, and target their efforts towards these communities, will be able to reach potential customers that may not have previously been available. Likewise, IoT devices, when coupled with social media, will allow marketers to identify and take advantage of new emerging trends [13].

5.2. The Applications

The digital advertising industry is already undergoing something of a transformation. The expansion of the IoT creates new opportunities for the digital marketing. We will analyze some examples where the digital marketing is combined with the IoT.

5.2.1. Interactive billboards promote personalisation

British Airway's smart billboard ad in Piccadilly Circus, London wowed passersby in 2012 as a small boy reacted to overhead planes in real time, promoting the flights and their current destinations [7].

5.2.2. Loyalty through community engagement

One of the best examples of consumer connectivity and community creation is Nike+, a collection of fitness training and tracking devices and apps. The community now boasts over 38 million members. The key here though is continued interaction. Consumers share huge amounts of live data. The success of Nike+ is that the relationship is two way, consumers have benefits from doing this and Nike has accessed potential new users with an easier way than advertising just a pair of running shoes through a poster ad [7].

5.2.3. In car radio messages directed at driver mobiles

Toyota's radio interaction with Apple's Siri, a campaign run in Sweden was designed to stop drivers using their phones while driving. The driver's phone interacts with the radio to ensure it is turned to airplane mode [7].

5.2.4. Smart products to track and interact

Products can get a lot more personal when the Internet of Things makes them smart. Diageo whisky, for the father's day, connected 100,000 bottles to the Internet so they could be used to send a personalized, one-to-one digital video message. The givers (of the Whisky) were able to personalize the message with their own content. By doing so it calls upon the giver to create what is, in effect, the advertising message to augment the product, making this an example of participative and creative.

Diageo saw a 72% sales uplift on the lead up the father's day, and the cost of the campaign was repaid five times over. The campaign also won the International Advertising Associations top award [10].

5.2.5. Connected products

Amazon's dash buttons connect to your home Wi-Fi and link to the Amazon app. They can be pressed whenever you are running low on a given product- i.e. Tide detergent, and the product the button corresponds to will turn up on your door in a couple of days. Talk about a customer loyalty program! This way your customers aren't in a supermarket looking at 100

different brands of detergent which do similar things and make similar promises, instead they're in their house looking at the almost empty bottle of detergent and thinking they could do with a bit more, so they just press the button and they're done. It also makes the purchase process so frictionless that it literally is at the touch of a button [10].

6. Conclusion

The Internet of Things is not an experimental technology anymore. It is the reality that has come to change the face of technology and our everyday lives. From the way weather, pollution and the environment are observed, to the way we control our lives and we do business, everything seems to be on a new basis.

Potentially, sensors and Internet connectivity will be introduced to all objects transforming them into “smart” things. Apart from that, business could improve their operations and the experience they offer to their customers. This will give them the opportunity to provide them with better goods and services and their marketing efforts will be more efficient and effective. The most considerable benefit of combining IoT with marketing is the fact that marketers will now answer the question “WHY are consumers buying what they are buying”. This will be possible thanks to Big Data and predictive analytics and it will ultimately improve products, services, and customer experiences and relationships. Using digital connections to enable deeper human connections is probably the highest opportunity for IoT.

All in all, the IoT creates the opportunity for every element of a business to have voice. However, the adoption of the Internet of Things faces tremendous challenges, like power, costs, industry alignment on shared communication standards, and privacy. Each of the above-mentioned topics merit further discussion.

References

- [1] Alexander Kesler, The Internet of Things: How Digital Marketing is shaping the future (2015)
- [2] Hisao NAKAJIMA, Marketing Strategy in the Era of Ubiquitous Networks (2002),
- [3] Intel, A Guide to the Internet of Things: How billions of online objects are making the web wiser
- [4] Jamshed Dubash (2016), Marketing and the Internet of Things: Are You Ready?
- [5] L. Atzori et al. (2010), The Internet of Things: A survey, Computer Networks
- [6] Manjiry Tamhane(2015), The opportunity the Internet of Things offers marketers, Gain Theory
- [7] Marc Ambasna-Jones (2015), Five ways to bring advertising to life in the internet of things
- [8] Neil Patel (2015), How The Internet Of Things Is Changing Online Marketing
- [9] Renilde De Wit (2015), How the Internet of Things impacts marketing
- [10] Robert Allen (2015), 7 examples of the applications of the Internet of Things which are here now
- [11] Stan Kurkovsky, Karthik Harihar (2006), Using ubiquitous computing in interactive mobile marketing, Pers Ubiquit Comput (2006) 10: 227–240
- [12] Steve Olenski (2015), How The Internet Of Things Will Transform High-Tech Marketing
- [13] Stuart Leung (2014), 5 Ways the Internet of Things Will Make Marketing Smarter, IT, Marketing