

Significance of IOT- Oriented Marketing Management for Consumer Products

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Abstract – Internet of Things (IoT) is predicted to be one of the primary raising megatrends in technology. Mixed with present and expected pervasiveness and ubiquity of connected consumer products it provides ground to program in a number of places, including marketing. IoT is going to influence the decision-making approach in different phases of selling, buying as well as the marketing process. Thus, every person as well as a business ought to know precisely what IoT is actually, and why and how they need to integrate it in their operations. growing number of freshly released products have been in a position to sense the planet of theirs as well as share data with owners, various other products, companies or and/ through the web of Things (IoT). This motivated us to suggest an intelligent method based on IoT to assist businesses & marketers make an effective marketing program via using obtained data from IoT devices. With pragmatic examples and theoretical framework, the newspaper gives related concepts as well as managerial implications of IoT in retail and marketing.

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I. INTRODUCTION

A revolution is going on through the web of Things (IoT)? one which can have a huge effect on the earth as we understand it. The IoT, which requires interconnected services, systems, and devices that depend on the autonomous interaction of actual physical items in the current Internet infrastructure, is actually a thrilling idea since it creates intelligence of the web to actual physical products, therefore making all products much more connected and wise. The uses of the IoT span many places, like wearables, smart homes, sensible cities, manufacturing automation and a lot more. The IoT offers advantages that are great to many industries as well as society as an entire, with uses like heart monitoring implants, cars with built-in sensors, biochip transponders on farm animals, search & rescue devices, or maybe wise thermostat systems as well as washer/dryers that utilize Wi-Fi for remote monitoring. A lot of the IoT systems, as well as technologies, are actually novel and also the IoT is actually anticipated to usher in automation in almost all areas

With such quick expansion and spread of the effect of its, it's surprising that the number of marketing research checking out the IoT is performed. You will find still numerous untapped program parts, many challenges & concerns that have to be improved, as well as the total effect for stakeholder groups, is much from certainly charted. Right now there are actually implications for how marketing might greatly embrace the IoT and just how the IoT may itself design marketing.

Nevertheless, more research is actually necessary to check out the skills required to follow the IoT in the organization and just how these relate to various factors of marketing, especially for the relationship-oriented organization which engages in CRM, alliances, joint ventures & partnerships. A lot of the rules of marketing are actually changing and lots of new methods will likely be created in this specific brand new IoT era.

II. SIGNIFICANCE OF IOT

Internet of Things (IoT) was provided as a concept in 1999. It's supplied a platform to hook up to mobile devices and different hardware so that individuals that are different could be hooked up to one another. The networks may be on the nearby wide area networks subscribed to each business, or maybe wireless networks, or perhaps both. IoT also can collect data by wireless receptors, and the next hook up to the main servers of its storage and processing. Likewise, it allows individuals to hook up to the web along with other people's mobile devices via main servers and also wireless sensors. The handy use of IoT is able to boost operational effectiveness due to the capability of its to collect as well as to explicate big data and automate connections among devices. The IoT could be used in a number of areas such as for instance industrial automation, wearables, health, agriculture, education, smart homes, and smart cities. It offers enormous advantages to society as an entire. We are able to see the outcome of IoT in automobiles with built-in sensors, health monitoring systems, biochip transponders that are utilized for

farm animals, search & deliverance devices, smart washer/dryers which use Wi-Fi for remote monitoring, etc. There'll be nearly 20 billion devices on the IoT by 2020 based on Gartner.

Even though more businesses, as well as retail stores, have adopted IoT, a lot of customers continue to be not aware of IoT services. Utilizing IoT may substantially make users' daily tasks better since a lot of services could be seen on the mobile devices of theirs. Additionally, it improves inventory management, monitors product consumption, monitors advertising spots as well as rates. Furthermore, the IoT is able to better the consumer services to enable real time communications. Furthermore, it is able to allow companies to forecast feasible customers' cases and concerns, and proactively provide answers. In that way, it is able to get a much better customer total satisfaction. Being a result, IoT could likewise save time, reduce costs as well as human mistakes. Because of the substantial role of IoT in improving service quality, managing consumer demands, and obtaining loyalty and customer satisfaction, several scientific studies are provided that spotlight that job. An author illustrated in the study of theirs just how e retailers that deal with innovative products in the era of the web of Things (IoT) select product delivery service providers to ensure efficient and timely delivery to clients. Furthermore, Desai might model IoT services on the foundation of service quality dimensions of the electrical energy distribution center of Bangalore Electricity Supply Company. The scientists have determined IoT treatments to enhance the usefulness of the service product.

III. IOT IN MARKETING

IoT also offers a big influence on marketers since it offers them with the access to accurate big data. Marketers are able to monitor as well as capture products, estimate the number of people every day, evaluate buying actions and understand the single applications of products. The analysed outputs might get rid of the demand for surveys or maybe the collection of time-consuming and costly data, in which ideas may be collected from the particular usage of associated data and connected products. It is able to additionally enhance hyper-local and direct marketing, in which individual emails may be delivered through a selection of connected mediums, for checking commentary and result from customers. This is able to even help all types of marketing since the info is actually the first hand as well as the dissemination could achieve far more people no matter their demographic, psychographic, or maybe geographic generalizations. The progress of IoT is going to influence all marketing businesses, especially those centred on big data analytics. With much more major data from customers as well as companies that became easily accessible to marketers, analysts are able to turn raw data into valuable insights, suggestions and expected results.

For finding out how IoT constitutes marketing, not many scientific studies are actually presented. Certain scientists proposed the look of what they call, 'The Corporate Marketing Internet Revolution' which calls for a major rethinking of marketing train and scholarship. The effect of the IoT on marketing methods was thought by De Cremer, Nguyen, as well as Simkin through dealing with the overlooked area of the dark side of the IoT. An intelligent marketing structure based on IoT was suggested by Hakim and Rajabi to assist clients and shopping centers to work together with one another. The vision, as well as issues of advertising and marketing in the web of Things era, was given. Celik, illustrated how IoT is going to be a terrific source of future marketing tools. An intelligent retail 4.0 Internet of Things consumer retailer model for strategic and smart marketing of in store products was presented. The prospective uses of Internet of Things systems as well as answers for useful marketing at retail were provided.

Among the crucial ideas related to IoT uses for marketing is actually context. IoT is able to sense contextual inputs and make use of them to provide info that is related as well as services to the user. The sensors incorporated into ubiquitous mobile cell phones & tablets, which have grown to be an essential component of people's lives, be the source of contextual info as location tracked through GPS. Another essential cause of contextual info is actually community networks-coupled with other contextual inputs from a mobile unit this becomes a resource for predicting conduct, recommendations or even private support.

IV. OUTCOME OF INTERNET OF THINGS IN MARKETING MANAGEMENT

The academic literature on IoT related things may be traced back to early publications on ubiquitous computing which matches to the thought of info technologies penetrating the fabric of daily life until they're indistinguishable from it. Since the first work at the Auto ID Center at the Massachusetts Institute of Technology, the specialized debate on the web of Things has gained momentum in different directions, which includes ambient intelligence, human computer interaction, and sensible cities. The development of the web of Things comes with a stream of specialized literature on wireless sensor networks and strongly associated areas including sensor technologies, wireless communication, layered architectures of digital technology in addition to electricity use, supply, and harvesting. Lots of specialized publications scratch economic possibilities but do so typically just in the inspiration area of the job of theirs. Even though the complex elements of the web of Things are reviewed for over 2 years, a

deep economic conversation began just several years back.

The contemporary smartphone might be perceived as a catalyst not just for real-world IoT programs but additionally for discussions on the possible effect of the web of Things on consumers, services, products, companies, markets, and industries. The current economic literature investigating smart products and IoT mainly is focused on research questions in the fields of management, transportation, supply chain management, market competition, new business models, consumers' attitudes toward autonomously acting products, the organizational structure of businesses, generation planning as well as influence, secrecy and privacy, wearable devices, smart house, and ambient assisted living, simply to name just a few. From the perspective of marketing control, IoT products are actually of specific interest because of 2 new elementary functionalities we refer to as remote access as well as product analytics.

Product analytics, on the one hand, depends on the autonomous compilation of user data from the customer's setting which offers businesses with insights into the particular product use. Remote access, on the additional hand, provides choices for remotely operating the IoT product, changing the parameters or maybe a feature of product attributes, deactivating and activating product capabilities, and controlling data flowing incoming to the IoT product. Often used together or alone, remote access, as well as product analytics, opens up a broad range of new possibilities for marketing control.

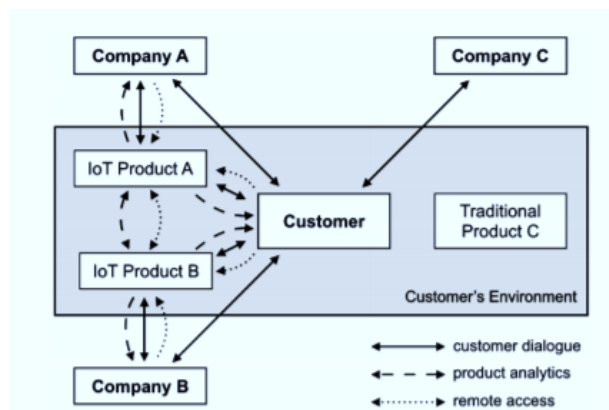


Figure 1. The flow of data beyond the point of sale with traditional products versus IoT products.

Role of IOT

With the power of its to change real-time data into company process efficiencies, IoT produces the possibility that is enormous for consumer products businesses throughout several business parts-including, for example:

Inventory management: With IoT, consumer products businesses are able to produce a real-time database

alert system that indicates the demand for inventory replenishment, gives supply chain transparency, as well as heightens the ability to respond to changing consumer demand.

Product reordering: Retailers along with consumer products businesses may benefit hugely from an IoT backed end-to-end method which flags as well as instantly reorders products as necessary, alleviating out-of-stocks.

Traceability: Whether it's concern around the need or specific substances requirement to identify the actual origin of certain product lots, there's an increasing premium on the high amount of supply chain traceability which- Positive Many Meanings- IoT is able to deliver

V. CHALLENGES AND STRATEGIC DRIVER FOR IOT ADOPTION

Top Challenges Faced by Consumer Products Executives

- 35% state that regular fluctuations in raw content expenses have produced greater operational expenses.
- 32% cite top logistics/transportation expenses like a major challenge.

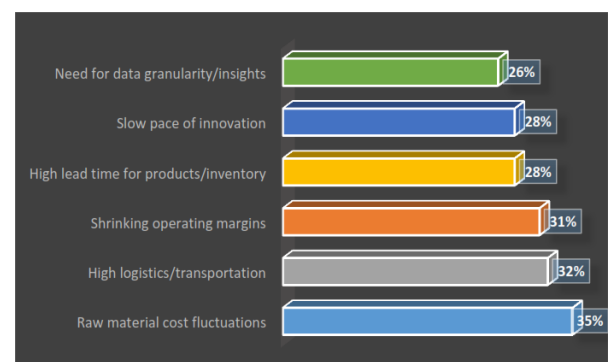


Figure 2: Business challenges for IOT adoption

- 31% contend that hyper-competitive retail and distribution locations are actually driving greater trade offers as well as deals - resulting in shrinking operating margins.

The Strategic Drivers

- Consumer Products enterprises are actually centered on strategic initiatives targeted at boosting response to demand changes as they arise. Additionally, they prioritize attempts developed to enhance product lead times as well as promote innovation.
- For 32% of consumer product makers, reacting quicker to demand and capability

improvements is vital. Following a digital supply chain with IoT allowed procedures have potential that is high to allow consumer products businesses to respond faster to market fluctuations.

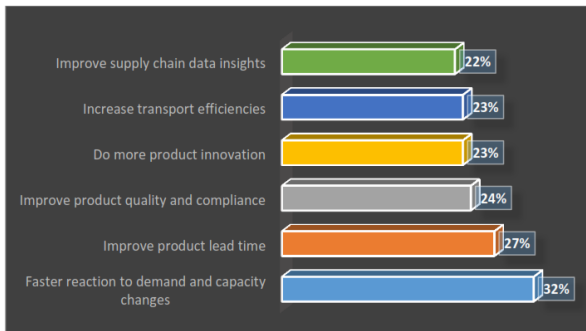


Figure 3: strategic drivers for IOT adoption

- 27% seek to boost lead times. Producing collaborative supply chain platforms linking customers, companies, and suppliers are able to help get smaller lead times through much better inventory preparation.
- 24% of consumer products professionals are actually trying to enhance product quality and compliance. Conducting systemic, centralized quality checks of products through the use of digital equipment is able to help run these kinds of improvements.

VI. THE CHANGING CONSUMER PRODUCTS INDUSTRY LANDSCAPE

The consumer products industry has historically maintained a regular target on client centricity; however, a series of the newest forces have made it more and more difficult to do so:

- Digitally savvy shoppers: With entry to product reviews, price comparisons, along with other info, individuals are starting to be less brand loyal and more and more centred on worth.
- Changing consumer behaviors: From online shopping to showrooming and beyond, shopper action is actually impacting consumer products choices from category management to operations and product sales.
- High transportation as well as logistics costs: Digital customers demand fast, on-time delivery, forcing consumer products businesses to make serious transportation investments.
- Shrinking operating margins: Increasing costs- whether of raw materials, or maybe

transportation, or maybe promotions are actually pressing down margins while as consumer products businesses seek to keep pricing that is competitive.

- The entry of new disruptive competitors: From Dollar Shave Club to Ripple Foods to Casper mattress, innovative and new businesses are actually entering the market at a fast pace, typically build on innovative, digital internet business models as well as special insights into growing segments of customers.

VII. APPLICABILITY OF IOT-LEADER FOLLOWER PERSPECTIVE

Strategic Drivers of IoT Leaders

- 32% of respondents with a crystal clear comprehension of IoT applicability enjoy a strategic focus on enhancing source chain effectiveness through data insights
- 31% are seeking to enhance product lead time

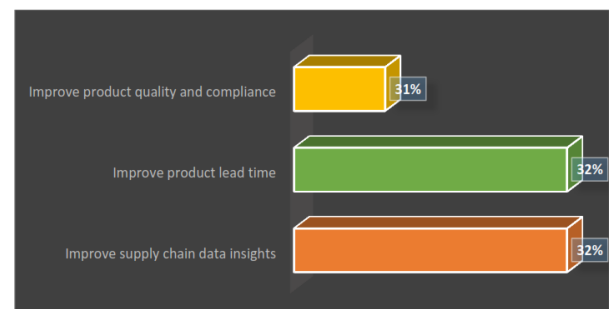


Figure 4: Understanding of IoT from leader perspective

- 30% aim to boost product quality and compliance
- Leaders seek to put on IoT in order to acquire significant insights from considerable amounts of in house data. To cite only one instance, reducing shop replenishment time will help lower possible loss of product sales as a result of time lag.

Key IoT Initiatives of Leaders

- 59% of respondents with a crystal clear comprehension of IoT's applicability are actually producing procedures to control IoT in certain business areas.

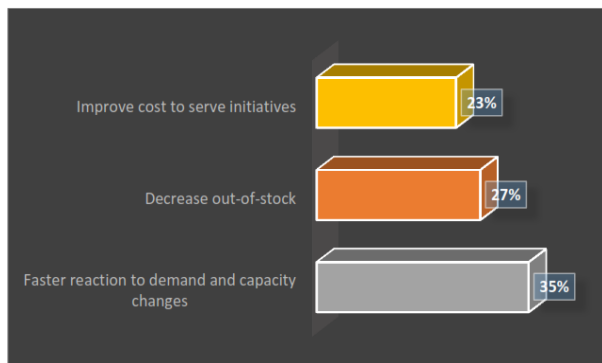


Figure 5: Understanding of IoT applicability from followers' perspective

- 51% are seeking to take in as well as use learnings from the success or maybe problems of early adopters.
- 45% are centered on hiring new workers with IoT abilities or perhaps retraining present personnel to confirm enough comprehension of IoT.

Strategic Drivers of Followers

- 35% of respondents lacking a clear comprehension of IoT applicability are actually centred on faster response to demand and capacity changes like a vital strategic driver.
- 27% seek to reduce out-of-stocks.

In contrast that is stark with IoT leaders, followers are actually centred on work aiming to decrease demand/supply spaces in shops as well as inventory shortages.

Main IoT Initiatives of Followers

- By contrast, respondents lacking a clear comprehension of IoT's applicability are actually establishing joint ventures or maybe alliances to exploit IoT opportunities; looking for guidance from third party experts; and also sponsoring or conducting research on IoT potential.

VIII. CONCLUSION

Engineering growth has provided the ground for IoT implementation in a number of places, which includes retail as well as marketing. Chance of talking with the consumer or maybe shopper in time that is real, at any phase of the buying cycle and for context that is relevant, with relevant advantage and personalized content for the user are actually major factors for IoT being viewed as a potent and relevant tool for marketing tactics. Furthermore, IoT is able to boost business processes as well as user experience is used for inventory management, payment

systems, retail logistics, shop employees control. Ultimately, it's anticipated that implementation of IoT provides incremental added value as well as much better business benefits vs common methods of dealing.

And so, exactly how do consumer companies gain from the web of Things and what must they actually do next? The solution is in specific cooperation across the business. Operating out of the ground up by tinkering with cheap and fixes that are readily available, combined with pay-as-you-go artificial intelligence as well as for analytics, companies are able to prove the situation for IoT in fixing discrete issues, like reducing supply chain trash or perhaps slashing factory down period. Success is going to require an entrepreneurial spirit among regional management, a lifestyle that is actually ready to enable inexpensive prototypes to fail, along with a willingness to collaborate on collective remedies with peers throughout the supply chain. At exactly the same time, leadership at the roof of the business is able to show they understand the changes in consumer behaviour as well as attitudes that are included with social networking, smartphones, and continuous e-commerce innovation. The drive of theirs towards better use of data throughout the group will begin to create a closer connection with customers by understanding the daily needs of theirs and desires by way of a changing technological, demographic, and economic landscape.

IX. SUGGESTIONS FOR FUTURE RESEARCH

Potential research thus requires to broaden the prevailing conceptual analysis in its depth and breadth. First, IoT products will probably impact ideas and theories from various other marketing fields in ways that are similar. Promising research fields are actually a marketing mix as well as a brand management (e.g., regarding the impact of product smartness on the willingness to pay). Next, the presented research propositions should be examined empirically, partially by making use of long term studies. In this regard, experimental settings could be utilized to evaluate the expansion in strategic customer conduct when clients use IoT products. Third, future research must further examine the effect of clever products on well-established marketing theories. In addition to connectivity, sensible products possess the potential of decision making that will probably impact customers' buy decision making and product usage.

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