



Innovate New Products at Speed and Scale

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Abstract— *In many industries, product innovation is critical to success, but the method of researching, developing, testing, reporting, new offerings can be long and resource-intensive. This research paper covers different sources of Big data which is a common determinant in product improvement efforts, and best organizations are using it to make innovation by applying analytics solutions to examine large, multiple data sets and generate new insights based on unstructured customer data produced through social media posts. It will also provide the knowledge on how to use brand strategy, market analysis, and RFID technology as the means to innovate new products/services at speed and scale.*

Keywords— *Social media product/brand analysis, brand strategy, market analysis, RFID tracking, and analysis.*

I. INTRODUCTION

Innovation matters. In the consumer product realm, innovation can drive profitability and growth, and it can help businesses to succeed even during their difficult economic times. On the opposite side of the sales counter, consumers have a strong desire for innovation, but they are increasingly demanding and expect more choice than ever before. Brand competition is intense and shelves are crowded. However, there are many sources of information and techniques that companies around the world can use to get their products and services on track and satisfy their customers' needs to win the battle of competitive market

II. SOCIAL MEDIA PRODUCT/BRAND ANALYSIS

Social Media, today, is among the best opportunities available to a brand for connecting with prospective consumers. Social media is the medium to socialize. These new media win the trust of customers by connecting with them at a deeper level. Social media marketing now is the new mantra for several brands. Marketing managers are studying on several different social media opportunities and starting to implement new social initiatives at a higher rate. New posts giving an opinion on products and services are generated every day. Also, massive data produced every minute on common social network sites are laden with the view of users as regards diverse subject ranging from personal to global issues. Users' opinions on social network sites can be referred to as discovery and recognition of positive or negative expression of diverse subject matters of interest. Even though online opinions can be discovered using traditional methods, this form is conversely inadequate considering the high volume of information generated on social network sites. This fact underscores the relevance of data mining techniques in the mining opinion expressed on social network site. Social media marketing and the businesses that utilize data mining have become more advanced. Global companies have recognized social media marketing as a potential marketing platform; they used them with innovations to power their advertising campaign.

III. BRAND STRATEGY

Managers at the corporate level in multi-business firms that comprise different businesses have to coordinate the activities of multiple business units and consequently face a variety of strategic decisions that concern the overall corporation. One of these strategic decisions involves using corporate branding strategy. The decision to apply a corporate brand more generally called an organization name must be made very carefully because the corporate brand is the identifier of a corporation and is used to support business unit communications.

A branding strategy helps establish a product within the market and to build a brand that will grow and mature in a saturated marketplace. Making smart branding decisions up front is crucial since a company may have to live with the decision for a long time. [2] The following are commonly used branding strategies:

1. Company Name

A strong brand name (or company name) is made the vehicle for a range of products (for example, Mercedes Benz).

2. Individual Branding

Each brand has a separate name, putting it into a de facto competition with other brands from the same company. Individual brand names naturally allow greater flexibility by permitting a variety of different products, of differing quality, to be sold without confusing the consumer's perception of what business the company is in or diluting higher quality products.

3. Attitude Branding and Iconic Brands

This is the choice to represent a larger feeling, which is not necessarily connected with the product or consumption of the product at all. Companies that use attitude branding include Nike, Starbucks, and Apple, Inc. Iconic brands are defined as having aspects that contribute to the consumer's self-expression and personal identity. Brands whose value to consumers comes primarily from having identity value are said to be "identity brands." Some brands have such a strong identity that they become "iconic brands" such as Apple, Nike, and Harley Davidson.

4. Derived Brands

Some suppliers of essential components may wish to guarantee its own position by promoting that component as a brand in its own right. For example, Intel, positions itself in the PC market with the slogan (and sticker) "Intel Inside."

5. Brand Extension and Brand Dilution

The existing strong brand name can be used as a vehicle for new or modified products. For example, many fashion and designer companies extended brands into fragrances, shoes and accessories, furniture, and hotels. Frequently, the product is no different than what is already on the market, except it has a brand name marking. The risk of over-extension is brand dilution, which is when the brand loses its brand associations with a market segment, product area, or quality, price, or cachet.

6. Private Labels

Also called own brands, or store brands, these have become increasingly popular.

Where the retailer has a particularly strong identity this "own brand" may be able to compete against even the most influential brand leaders, and may outperform those products that are not otherwise strongly branded.

7. Individual and Organizational Brands

These are types of branding that treat individuals and organizations as the products to be branded. Personal branding treats persons and their careers as brands. Faith branding treats religious figures and groups as brands.

8. Crowdsourcing Branding

These are brands that are created by the people for the business, which is opposite to the traditional method where the company creates a brand. This type of approach minimizes the risk of brand failure since the people that might reject the brand in the traditional way are the ones who are participating in the branding process.

9. Nation Branding

This is a field of theory and practice that aims to measure, build, and manage the reputation of countries (closely related to place branding).

IV. MARKET ANALYSIS

The market analysis is one of the most important parts of any start-up strategy. When you do it right, you get a clear idea of the path down which you are headed. A proper market analysis will enable you to lure investors, sidestep pitfalls, and most importantly, attract customers.



Figure 1: Once you start selling, will people start buying? Analyze your market to find out.

Source: (<http://articles.bplans.com/how-to-write-a-market-analysis/>)

What is a Market Analysis?

Market analysis is determining the characteristics unique to your particular market and analyzing this information, which will help you, make decisions for your business. By conducting a market analysis, you will be able to gather valuable data that will help you get to know your customers, determine appropriate pricing, and figure out your competitors' vulnerabilities. [3]

Target market

It's important to establish a clear idea of your target market early on. A lot of new entrepreneurs make the rookie mistake of thinking that everyone is their potential market. To put it simply, they're not. By narrowing in on your real customers, you'll be able to direct your marketing resources efficiently while attracting loyal customers who will spread the word about your business.

To be able to innovate a new product to the target market section of your company you should include the following:

- **User Persona and Characteristics:** You'll want to include demographics such as age, income, and location here. You'll also need to dial into your customers' psychographics as well. You should know what their interests and buying habits are, as well as be able to explain why you're in the best position to meet their needs.
- **Market size:** Do your research and find out who and where your competitors are, and how much your customers spend annually on your product or service. How big is the potential market for your business?

Competitive analysis

Obviously, it's a good idea to know what you're up against, but it also lets you spot the competition's weaknesses. Are there customers out there being underserved? What can you offer that similar businesses aren't offering? The competitive analysis should contain the following components:

- **Market:** How big is the market for goods and services similar to what you plan on offering? What's the growth rate? Include the general outlook and trends for this market. Who are your main competitors? Are there any secondary competitors who could impact your business?
- **Competitor strengths and weaknesses:** What is your competition good at? Where do they fall behind? Get imaginative to spot opportunities to excel where others are falling short.
- **The importance of your target market to competitors:** Ideally, you're going after customers whose needs aren't being met by your competitors.
- **Barriers to entry:** What are the potential pitfalls of entering your particular market? What's the cost of entry—is it prohibitively high, or can anyone enter your market? This is where you examine your weaknesses. Be honest, with investors and yourself. Being unrealistic is not going to make you look good.
- **The window of opportunity:** Does your entry into the market rely on time-sensitive technology? Do you need to get in early to take advantage of an emerging market?

How to acquire the Data for your market analysis

Market analyzes vary from industry to industry and company to company. The hard truth is that some of the information you wish to include may not be publicly available. A little estimation is okay, but the bulk of your numbers need to be based on facts. Here are some good places to start your market research:

- **Your current customers:** If your business is already up and running, your current customers are an invaluable resource. They are your existing market. You can use online surveys or social media to gather feedback about buying habits, needs, and other psychographic information.
- **Internet:** You can do internet searches to find information about any state or local regulations or licenses you may need for your industry. As always, there's a lot of stuff out there, so make sure you depend on reliable sources. [3]

V. RFID TRACKING AND ANALYSIS

RFID as a Technological and Organizational Innovation

Innovation plays a significant role in the current digital economy. For example, innovation enables firms to introduce new goods and services in the market to ensure their economic sustainability. An innovation is "any idea, practice, or material artifact perceived to be new by the relevant unit of adoption" (Rogers 2003). When a change implies the adoption of an idea influencing directly the firm's fundamental processes, we are dealing with technological innovation. Concerning organizational or administrative innovation, it includes changes that impact on the firm's corporate policies, resource allocation, and any other factor associated with the firm's social structure. For instance, the adoption of a production system to support the activities of a manufacturing firm may be considered a technological innovation, while a change in the firm's organizational structure -to enhance the implementation of a new business strategy- is viewed as an organizational innovation. For (Cooper 1998), there is a reciprocity relationship between the corporate and the technological innovations. Indeed, the introduction of technological innovation into the firm is followed by an organizational transformation process dictated by the requirements of organizational innovation, and vice-versa.

The few definitions of innovation above suggest that RFID technology is both a technological and organizational innovation. RFID is indeed a practice considered as new to many firms. Also, RFID technology stands as an enabler for the implementation of collaborative practices such as the collaborative planning, forecasting, and replenishment (Lefebvre et al. 2005). RFID also allows the collection of product data in real time and automatically, thus contributing to increase the accuracy of data, reduce uncertainty level in the shopping centre, and enhance the decision making process within shopping center.

These few examples show the potential of RFID technology as a technological innovation and its potential impact on the management of organizations. These organizational changes are well commensurate with the requirements of any organizational innovation and illustrate the dimension of "organizational innovation" that RFID technology possesses.

RFID as a Product and Process Innovation

Innovation can traditionally simply a product or a production process. Product innovation refers to the introduction of a new product or improved version of an old product in the market; on its part, process innovation is related, on the one hand, to changes in the sequence of activities, and on the contrary, to the emergence of new techniques or the improvement of the already existing ones to support the production of goods or services (Habhab 2006; Utterback 1994).

Product innovation is market oriented and focused on the satisfaction of the end customer. Process innovation has a rather internal orientation to develop new capabilities and competencies that increase organizational efficiency. Different researchers argue that there is a considerable interdependence between product innovation and process innovation. Indeed, changes in a product give rise to other changes in the production process of the product.

Concerning RFID technology, the innovation is apparently centered both on the product and the process. In 1926 indeed, a variety of RFID systems with different forms, operating models, and performances were developed to take into account the various needs and constraints of RFID applications (Gogan et al. 2007). This multiplicity of RFID systems' product innovations results in (i) a high rate of patents for the said systems and (ii) a massive number of new types of RFID components in the market. For example, the tag "Memory Spot" that has been recently developed by the HP Laboratories' researchers is considerably advanced in terms of product innovation. This new generation of RFID tags actually has impressive characteristics: a size smaller than a rice grain, a memory in read-and-write mode capable of storing several megabits, an integrated antenna, a data transfer rate of approximately 10 megabits per second (10Mbps) (HP 2006). Furthermore, RFID components are increasingly used as enablers of the emergence of new high-value-added products. For instance, the use of RFID tags by the processing industry stakeholders is redefining the perception of product packaging units. Indeed, the concept of "intelligent packaging" is taking shape and is emerging with the use of RFID tags.

Such packaging is able to provide information on the products, and therefore enable a more efficient management of their life cycle (manufacturing date, name of producer, production place, expiry date, date and location of the last handling place, recycling place, etc.). Moreover, not only does packaging plays its primary role of product protection, but also it is suggested that it may serve as a vehicle for environmental information such as the reusable or recyclable characteristic of the pack

(Rundh 2008), thus transforming the purchasing experience of consumers. This is both a product innovation (from the perspective of the processing industry stakeholders) and process innovation (from the consumer's viewpoint). Concerning RFID process innovations, their production techniques have experienced a significant breakthrough, which aims to lower the unit prices of RFID technology's components, improve operational quality, and therefore speed up the adoption of the technology.

VI. CONCLUSION

Big data plays a significant role for a new product or service development and innovation processes at speed and scale. The optimum choice of innovation techniques, organization forms, and investment alternatives all depend mostly on the thorough understanding of the customer behavior and satisfaction. This paper has provided and described many insights into the innovation field and technology for which companies can employ to make a decision on their innovation of new products or services.

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