

# A Study on the Business Strategy of Smart Devices for Multimedia Contents

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**Abstract**—Information technology is changing the business value chain and business systems. This situation is due to the business value chain and the value creation factors in business. Technology companies and researchers are developing new businesses, but many companies and researchers cannot find successful ways to analyze and develop a business in a specific way. In this paper, first, the value creation motive in business is analyzed through a literature review. Second, business attributes are analyzed, while considering the value creation motive and the business factors in management. Finally, the business attributes of information technology are studied through a review of previous research papers on this topic.

**Keywords**—Smart Device, Business Strategy, Business Value Chain

## 1. INTRODUCTION

The spread of the smart device has led to issues around the world that can be seen from various perspectives. Many companies continually develop better smart devices and their applications. These devices provide much information. In addition, our business and economic problems will be solved by researching smart devices. Smart devices have brought many businesses back to the top of their class. Thus, for this paper, I have researched the development of the smart device and the strategy for multimedia content. I studied previous research about smart devices and analyzed that research. In addition, I studied the strategy and development of smart devices for multimedia contents in business.

## 2. LITERATURE REVIEW

A smart device is digital, active, computer networked device that is user reconfigurable, and that can operate to some extent autonomously. Mark Weiser proposed three basic forms for ubiquitous system devices: tabs, pads, and boards [1].

Smart devices provide service-oriented customers with distributed computing. These days, the prevalence of smart devices is increasing through advanced information technology. However, most smart devices have similar designs and functions. Thus, most customers do not know its special points. Recently, Apple, established by Steve Jobs, introduced the iPhone and the iPad. Apple launched the App Store to sell third-party applications for the iPhone and iPad [2]. Within a month, the store sold 60 million applications and brought in a daily average of 1 million USD,

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Table 1. Smart Device [1]

Smart Device	Characteristics
Tags	Accompanied or wearable centimeter-sized devices (e.g., smartphones, smart cards)
Pads	Handheld, decimeter-sized devices (e.g., laptops)
Boards	Meter-sized interactive display devices (e.g., horizontal surface computers and vertical smart boards)

with Jobs speculating that the App Store could become a billion-dollar business for Apple. Three months later, it was announced that Apple had become the third-largest mobile handset supplier in the world because of the popularity of the iPhone [3]. For this reason, the iPhone constitutes a new business model in the mobile device market [4].

In this chapter, through previous research on smart devices, I studied factors that affect customer satisfaction in the smart device business. Almost all previous research about customer satisfaction was conducted by Oliver [5]. His research topic is “the theory of expectation disconfirmation.” This theory suggests that satisfaction is determined by the intensity and direction of the gap between expectation and perceived performance. An individual is more likely to be satisfied if the service performance meets (confirmation) or exceeds (positive disconfirmation) his/her expectations [5].

On the other hand, he/she is more likely to be dissatisfied if the service performance falls below his/her expectations (negative disconfirmation). By proposing expectation disconfirmation as the sole determinant of satisfaction, this theory does not account for the fact that the confirmation of high expectations is more likely to lead to satisfaction than the confirmation of low expectations. Almost all researchers are unanimous that satisfaction is determined by the gap between expectation and perceived performance. However, the difference between previous research and this research is that, in the former, effectiveness research about satisfaction is determined by the gap between expectation and perceived performance [6]. In 1959, Herzberg studied the two-factor theory. The theory was based on interviews with 203 American accountants and engineers in Pittsburgh, chosen because of their professions’ growing importance in the business world [6]. The subjects were asked to relate times when they felt exceptionally good or bad about their present job or any previous job, and to provide reasons and a description of the sequence of events giving rise to that positive or negative feeling [6]. The following is the description of this interview analysis: we briefly asked our respondents to describe periods in their lives when they were exceedingly happy and unhappy with their jobs. Each respondent gave as many “sequences of events” as he/she could. These events met certain criteria, including a marked change in feeling, a beginning, and an end, and contained some substantive description other than feelings and interpretations. The proposed hypothesis seems verified. The factors on the right that led to satisfaction (achievement, intrinsic interest in the work, responsibility, and advancement) are mostly unipolar; that is, they contribute very little to job dissatisfaction. Conversely, the factors that led to dissatisfaction (company policy and administrative practices, supervision, interpersonal relationships, working conditions, and salary) contribute very little to job satisfaction [7]. The research showed that responses tended to be consistent and revealed two different sets of factors affecting motivation at work. One set of factors, if absent or weak, caused dissatisfaction. These related to the job environment or the context in which the job was performed and were thus extrinsic to the job itself, for example, the quality of supervision or

level of pay. Herzberg labeled these as the Hygiene or Maintenance Factors. The second set of factors, if present, lead to feelings of satisfaction. These relate to the job itself, for example, its complexity or importance, which Herzberg named the Motivators or Growth Factors [6]. Subsequent research produced a list of factors that contribute to satisfaction at work (Motivation Factors) and another list of factors that contribute to dissatisfaction (Hygiene Factors). The two-factor theory distinguishes between the following: Motivators (e.g., challenging work, recognition, and responsibility), which give positive satisfaction, arising from intrinsic conditions of the job itself, such as recognition, achievement, or personal growth; and Hygiene Factors (i.e., status, job security, salary, and fringe benefits) that do not give positive satisfaction, though dissatisfaction results from their absence. These are extrinsic to the work itself, and they include aspects such as company policies, supervisory practices, or wages/salary [8]. Herzberg not only argues that both factors are equally important, but also that good hygiene will only lead to average performance, thereby preventing dissatisfaction, but will not, by itself, create a positive attitude or motivation to work. To motivate the employee, management must enrich the content of the actual work that employees are asked to do [7]. DeLone and McLean reviewed the existing definitions of IS success and their corresponding measures and classified them into six major categories. Thus, they created a multidimensional measuring model with interdependencies between the different success categories [9]. Motivated by DeLone and McLean’s call for further development and validation of their model, many researchers have attempted to extend or re-specify the original model. Ten years after the publication of their first model and based on the evaluation of the many contributions to it, DeLone and McLean proposed an updated IS success model [9].

The updated model consists of six interrelated dimensions of IS success: information, and system and service quality, (intention to) use, user satisfaction, and net benefits. The arrows indicate proposed associations between the success dimensions. The model can be interpreted as follows: a system can be evaluated in terms of information, system, and service quality; these characteristics affect the subsequent use or intention to use and user satisfaction. The system can lead to certain benefits. The net benefits will (positively or negatively) influence user satisfaction and the further use of the information system [10].

In this paper, I studied two factors: “System Quality” and “Information Quality,” which are both strategies for smart device companies that have been studied through the review of literature. The term “order winning” was coined by Terry Hill and refers to the process of how internal operational capabilities are converted to criteria that may lead to competitive advantage and market success [11]. After that, he suggested the terms “qualifier,” “service winner,” and “service loser” in his research [11]. Before a service firm can be taken seriously as a competitor in

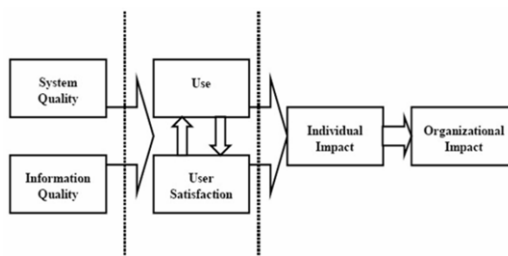


Fig. 1. IS Success Model [9]

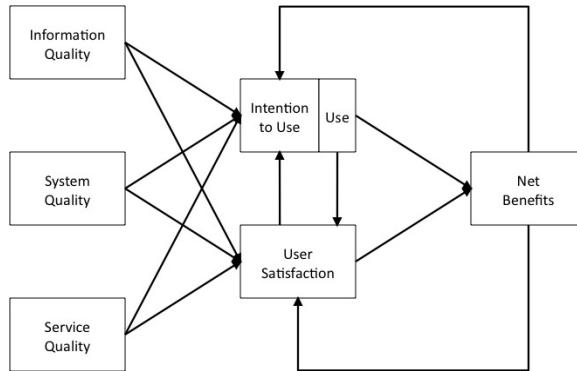


Fig. 2. IS Success Model [10]

the market, it must attain a certain level for each service-competitive dimension, as defined by the other market players. For example, in the airlines service, we would name safety, as defined by the airworthiness of the aircraft and by the rating of the pilots, as an obvious qualifier. In a mature market such as fast foods, established competitors may define a level of quality—cleanliness, for example—that new entrants must at least meet to be viable contenders. For fast foods, a dimension that was once a service winner—such as a drive-through window—could, over time, become a qualifier, because some customers will not stop otherwise [11]. Service winners are dimensions such as price, convenience, or reputation that are used by a customer to choose from among competitors. Depending on the needs of the customer at the time of the purchase, the service winner may vary. For example, seeking a restaurant for lunch may be based on convenience, but a dinner date could be influenced by reputation. Note that a service winner can become an industry qualifier (e.g., ATM use by banks) [11]. Finally, failure to deliver at or above the expected level for a competitive dimension can result in a dissatisfied customer who is lost forever [5]. For various reasons, the dimensions of dependability, personalization, and speed are particularly vulnerable to becoming service losers. Some examples might be the failure of an auto dealer to repair a mechanical problem (i.e., dependability), rude treatment by a doctor (i.e., personalization), or the failure of an overnight service to deliver a package on time (i.e., speed).

### 3. SMART DEVICE BUSINESSES

For this paper, I developed a conceptual research model after considering previous research.

I studied the two-factor theory by Herzberg, and I suggested the conceptual research model for strategy development of smart devices, as shown in Fig.3. Also, I analyzed system information quality and service quality that intends to employ user satisfaction research from DeLone and McLean (2003) [9]. Thus, in this paper, I suggested five factors for customer satisfaction: system quality, information quality, service loser, service winner, and qualifiers. Table 1 discusses this in more detail.

In other words, to increase the customer satisfaction of smart devices, companies must increase satisfaction and decrease dissatisfaction. This paper considers the basic theory of business, which is the business requirement for smart devices as suggested by previous research. In addition, I suggest a business rule to increase business performance, which is the betterment of cus-

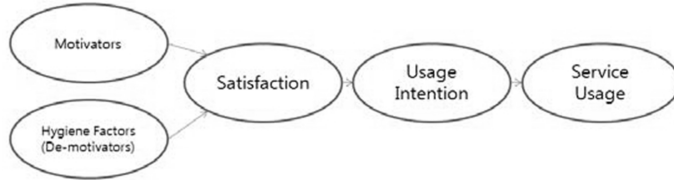


Fig. 3. Conceptual Research Model

Table 2. Customer Requirements for Smart Devices

Five factors for customer satisfaction	Definitions
System Quality	Customers want to use simple controls and a robust smart device.
Information Quality	Customers want outstanding information and applications.
Service Winner	This is the competitive dimension used to make the final choice among competitors.
Qualifiers	To be taken seriously on a certain level, qualifiers must be attained on the competitive dimension, as defined by other competitive dimensions and market players.
Service Loser	The service loser fails to deliver at or above the expected level for a competitive dimension.



Fig. 4. Business Requirement Analysis

customer satisfaction to minimize dissatisfaction. This rule will help maximize business performance.

#### 4. CONCLUSION

In this paper, I analyzed the business requirements for the successful performance of smart devices. Many companies have focused on smart technology and they have developed smart devices, which are excellent devices. However, customers are not interested in the devices. More so, they want to go through successful business strategies to obtain a great business opportunity. Thus, I suggest five business requirements that are based on literary review: system quality, information quality, service loser, service winner, and qualifiers.

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