Approaches to dominant IT products:  
Special emphasis on Microsoft and Apple

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Abstract

The main objective of this project is to analyze approaches to dominant IT products in the market and present special emphasis on Microsoft and Apple. In addition, it will focus on Microsoft and Apple as they are considered as leaders in the market.

Nowadays, Microsoft products are dominant design ones. Apple’s situation becomes risky due to market’s main threat which is other competitors; such as Samsung, Nokia, and Google. Their products are about to win the market, however, there are some factors which are not supporting the company. More innovations, adjusting prices, and becoming more users friendly will help a lot to dominate the market.

Based on literature review, research methods used such as survey and interviews, there will be different approaches presented in this paper which lead to dominant IT products. Results and discussion parts enriched the paper and added more value to the paper.

Introduction

In 1971, Abernathy and Utterback established the idea of dominant design. They argued that the introduction of the dominant design poses threat to industry evolution, because the concept changes the way of competition on the market. Dominant design includes innovative product, technology or some significant set of features which distinguish the industry among the others on the market. This paper is aiming to analyze approaches to dominant IT products and will be presenting special emphasis on Microsoft and Apple. Moreover, it will discuss Apple situation in the market and offer approaches that Apple can adopt in order to increase the overall value of its technology and become a dominant design. Apple deals with consumer electronics, computer software, hardware and digital distribution. The company’s products include software, Apple TV, Mac, iPad, iPhone and iPod. Apple is constantly introducing the most innovative technological asserts. In order to overcome the rivalry, Apple has to find a new source for its commodities, invest in innovation and lower the prices for its products. In addition, suppliers have an influence on the industry by raising prices and reducing worth of products. Thus, there is a need for Apple to improve the design and performance of its products and become friendlier in term of usage.

Literature review

This paper seeks to survey the modern and recent research on the concepts regarding dominant product designs. The key point to note is that when dominant designs evolve, there are shifts in the market competition trends. A dominant design is referred to as a defined path along a design’s hierarchy which creates competition among the design paths. A number of evidences exist in various literatures focusing on a number of industries in USA.

A dominant design implies a concept in technology management. It was introduced by Abernathy and Utterback in the year 1975. It was meant for the identification of the primary technological features for a standard system. A dominant design is one that is able to win the market place allegiance, and the one that innovators and market competitors have to adhere to scoop a good market share.

Schumpeter considers innovation, both as a creator and damage to both corporations and industries. Crisiano Antonelli, Pascal Petit, and Gabriel Tahar (1992) discovered that Schumpeter’s works of 1912 insisted on the entrepreneurial role in capturing discontinuous opportunities for
innovation. In his later works, Schumpeter now emphasizes on the role of bigger firms in innovation. This works by Schumpeter have caused conflict among writers. It was in 1975 that Utterback and Abernathy introduced a concept that a dominant product design can alter the innovation character and competition in corporations and industries.

The main question regarding a dominant design is how it occurs. Technological evolvement is necessary for this to happen. Primarily, many features have to be tried in separate products. These products may have been custom designed or designed to meet a particular market niche. According to Klein (1977), the processes by which competing firms enter and exit the market may be viewed as the process of experimentation. The period of experimentation can be termed as the industries’ fluid period (Abernathy & Utterback, 1978). This is a period characterized by numerous highly varied performance dimensions.

There are various non-technology based factors that contribute to the development of a dominant design. Included here are; ownership of collateral assets, government intervention in industry regulation, strategic maneuver at the firm’s level, existence of external networks for the industry, and effective management of producer and consumer relationships. Collateral assets enforce the loop relationship with dominant designs (Teece, 1986). The collateral assets enhance the firm’s imposition of its dominant design on one hand, and in turn, possession of a dominant product by the firm facilitates easier accumulation of collateral assets and a higher level price (Suarez and Utterback, 1992). Government intervention and industrial control enforces a dominant product literally. A case for this is the RCA T.V broadcast standard.

The competitions strategies that the firms make use of also determine the existence of a dominant design. This is in line with a research conducted on VCR industry (Casumano, Rosenbloom, & Mylonadis, 1991). The external networks in any given industry accelerate the production of an external design. Firms with larger networks achieve more scale faster as compared to their competitors and thus have a better chance of dominating the market.

Finally, management techniques for the industries’ techniques influence the firms’ ability towards production of a dominant design. Close contact with the end users in the early experimentation periods will enable the firm to identify the features that are much preferred by the users. This involves close relations with interest groups, user’s association and consumers.

Research methodology

Introduction to the Research Approach:

In order to start with the research process, it is important to specify the objectives in advance. It will be done as questionnaire to multiple numbers of IT organizations in different sizes. This will cover SMBs (small and medium businesses) and SOHO (Small office home offices) and big organizations.

In addition, this will also cover normal consumers such employees, professional workers, teachers, engineers and others who use IT products (PCs, laptops, tablets and handsets)

The objectives of this research are as below:

- To understand the basic IT products requirements for enterprises and their employees.
- To check the root cause behind preferring Microsoft products to Apples’
- To identify the main driver of being dominant design product.

As a way of the above objectives, it is essentially required to have a comprehensive questionnaire that can cover the above objectives in order to be able to analyze the reasons and then identify the causes. At the end, the final and main objective is to have a generic statement answering how dominant design concept can be achieved in information technology sector.
Information Required:

The information required in this regard can be summarized as below:

1. How important is the information technology in this organization?
2. The concept of IT support for these organizations.
3. Operation system used in these organizations (Microsoft or MAC…)
4. The reasons behind the selecting the above operating system.
5. How flexible is to change the IT system in the organization?
6. How flexible is the change of IT systems to the organizational employee?
7. Operation and Maintenance cost and its effect on the routing work of the organization.
8. Individuals point of view in regard to Microsoft and Apple.
9. Operational use of Microsoft and Apple users.
10. Expenses associated with Apple products.

Questionnaire list

The objective of the questionnaire is to discuss dominant design concept by taking an example of Apple and Microsoft products and answering the below 15 questions.

1. Usually, the non-IT business organizations depend on outsourcing 3rd party to manage IT issues.
2. The non-IT firms depend on information technology in its operational and routine work.
3. The organization depends heavily on IT in the transaction process that is related to the firms’ customers.
4. The operating system that is used by most of the firms is windows/Microsoft based.
5. The operating system that is used by most of the firms is MAC/Apple based.
6. As an organization, it is easier to work with Windows operating system in Operational and maintenance point of view.
7. As an organization, it is easier to work with Windows operating system in terms of cheaper operational cost.
8. Since the surrounding market is using Windows operating system, then it is recommended for new firms to have the same operating systems. This will enhance the processes between firms.
9. The organizational head do not think to change the IT department if required. Focusing on the core business is the target.
10. It is easier to market Windows based products rather than Apple based ones.
11. Apple products are more expensive compared with Windows product. This is the main reason of having windows products dominant in the market.
12. It is important to look into after sales expenses when start designing new IT product. This will be an important factor to dominate the product in the market.
13. Stability, effective and long live times are important factors for any IT product to survive. However, it is extremely important to look in to the market need before designing the products associated with MAC/Apple.
14. In low income level societies, Microsoft products are dominant mainly due to the expenses associated with MAC/Apple.
15. As a Microsoft product user, it is very easy and cheap for me to get support for my device in my area. This won’t be the case if I am holding a MAC/Apple Laptop.

Results
After distributing the questionnaire among big numbers of organizations as well as individuals in UAE, the results were as below:

- It is true that most of the local organizations depends on Microsoft due to the stability, cheap price, lower operational and maintenance cost.
- It is also true that these firms do not change this approach in order to be in line with the other similar business sector organization and hence they can keep their business running smoothly (in their point of view)
- Microsoft is a dominant design product in the local market compared with Apple.
- It is too challenging to switch from Microsoft operating system to Apple. Issues related to change management and deep analyses are required here.
- Individual users, similarly, prefers Microsoft products to Apple one. This is mainly due to the cost of the product itself, in addition to the after-sales expenses.
- Therefore, in order to dominate IT products, it is essential to study the market level in order to analyze their needs and then design the exact requirements. Additional facilities without big expenses are also recommended.
- Another factor to realize dominant design is the way of marketing the products. New IT products comers couldn’t be indulged heavily in the market due to the lack of advertisements and product awareness.

Discussion
Comparative to Apple, Microsoft commands a significant market following since their products are considerably cheaper, more stable, and require lower operational and maintenance costs. Microsoft’s rise to the top has been progressive; first introducing new products or set of features, then gradually synthesizing different technological innovations and improvements in subsequent versions. Apple products tend to be highly innovative although the company is also known for aggressively protecting its intellectual property, copyrights and trademark. Microsoft’s products have been, better received by the market place both at individual and organizational level since their designs are user friendly, progressively adapt to customer’s needs, incorporate market proven innovations, and are readily available. Apple, on the other hand, has managed to capture a specific niche of the market due to its highly innovative technology.

Generally, dominant designs must embody the requirement of different classes of users for particular products or need. Microsoft has been able to take into consideration the needs of different potential clients; corporations, large and small businesses, educational institutions and individual users. Apple products tend to focus on customized and highly innovative designs targeting a specific market segments. Dominant designs must not necessarily meet customers’ needs to the letter or be the
embodiment of extreme technical performance. Predictably, findings indicated that individual users within the local market were more satisfied with Microsoft products. This is a reflection of Gallagher's (2007) assertion that, within the IT industry, dominant design satisfier is a complex interplay of market choices and technical possibilities.

Majority of the individuals surveyed reported that, their organizations found it challenging to switch from Microsoft OS to Apple. Research findings also indicated that individual users favored Microsoft’s products due to cost and after-sales expenses. Dominant designs are known to be less complicated to the average user as they eliminate performance requirements by making key necessities implicit to the design. Microsoft software products for example, are compatible with personal computers manufactured by nearly all major PC manufacturers.

According to Mudambi (2007), the creative synthesis of new product innovation such as the case of Apple products results in; a temporary monopoly of the situation, high sales of the innovation in very few and specific market niches or high unit profit margins and prices. The IT market segment is highly complex with multiple players focusing in innovation and investing extensively in Research and Design. It is evident that, as production and demand grow, and more applications arise from innovation, product variations and market needs emerge. This is supported by the research findings which indicate that, to have dominant products within the IT segments, a critical study of market needs is necessary. Very few organizations have been able to dominate the IT industry based strictly on superior product technology and productivity. Continued experimentation and progress taking into account prevailing market conditions is the sure way of gaining dominance.

Despite Microsoft’s clear dominance, Apple also has a significant market share. The company’s success has been due to unique product designs and exceptional public relations. Results from the study indicated that, effective marketing of products is a way to realize dominant designs. In the IT market segments, new players or small firms are unable to effectively compete with established organizations since they are unable to carry out extensive advertisements to create product awareness. Dominant designs are also likely to shift competitive emphasis in favor of already established companies with highly developed technical and engineering skills. Initial competitiveness is on product innovation after which the focus shift towards process innovation. Markets determine the favored product alternatives, setting standards and competitive targets where only organizations with superior process innovation emerge at the top. Compared to Apple, Microsoft has been able to make the transition towards greater process innovation. When innovations are incremental, similar to the case of Microsoft, organizations are able to reinforce their dominance (Gallagher, 2007).

Conclusion

The study’s key findings support the primary tenets proposed by Utterback and Abernathy in 1975. Both Apple and Microsoft as leaders in the IT segment are considered in the study. Based on the current market indicators, most organizations depend on Microsoft products due reasons such as, simplicity, availability, and after sales costs. Apple was a pioneer and a clear market leader in the PC segment in the late 1970s and early 1980s, a trend that was overtaken by IBM’s competition. Microsoft’s rise to dominance in the PC segment began in 1990 with the introduction of Windows 3.0. The Operating system had a simple graphic user interface which demanded less hardware in comparison to the Mac. It is noteworthy to state, that the Macintosh’s introduction in 1984 was a major breakthrough; however, it was not timely and was not market and customer conscious. Microsoft’s operating system was, from the outset inadequate comparative to other systems such as UNIX. It was, however, able to transform from DOS to windows then to Windows NT progressively building a firm up market. The company also holds a dominant position with products in MS office, business consulting and strong positions in servers and tools.

Apple has the potential in countering the dominant design status clearly taken by Microsoft. In spite of the research findings, Apple’s market share has seen a considerable rise especially in the PC segment. Dominant product tenets predict that a clear front runner tend to emerge early in the market. Apple was, the clear frontrunner following the introduction of Apple I in 1976, yet it lost direction by not keeping up with prevailing market conditions. Through continued innovation, Apple is on the right
path to regaining its market dominance. Innovation has seen the company introduce the next generation products with superior hardware and software control. Apple also needs to lower its prices since this has been a key driver to Microsoft’s product dominance. At present, it has been unwilling to either slash its margins to meet the market demands. Apple should also consider improving their designs to be able to encourage or operate with third party software. The company stayed for too long with the strategy of controlling the entire platform thereby losing the popularity battle to Microsoft.

References
Cantner, U., DreBlør, K., Kruger, J. (2005), Knowledge and Creative Destruction over the Industry Life Cycle – The Case of the German Automobile Industry
F. F. Suarez (2004). ‘Battles for technological dominance: an integrative framework’
Teece, D.J. (1986), Profiting from technological innovation: Implications for integration, collaboration, licensing, and public policy. Research Policy