Apple – 40 years Product and Service Innovation, Lessons Learned from their Success

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Arloesi yw'r ffactor allweddol ar gyfer adeiladu mantais gystadleuol gynaliadwy a dod yn arweinydd diwydiannol. Bydd y papur hwn yn diffinio ac yn gwahaniaethu rhwng telerau e-fusnes ac e-fasnach. Gan ddefnyddio Apple yn enghraifft, mae'n dadansoddi sut y caiff e-fusnes ei integreiddio yn y sefydliad a sut mae'r integreiddio hwn yn darparu cyfleoedd newydd i Apple. Yn fy nadansoddiad, rwy'n canolbwyntio ar strategaeth arloesi Apple a sut mae'r cwmni wedi llwyddo yn gyntaf i ennill yr oruchafiaeth yn y diwydiant cerddoriaeth gyda'r iPod ac wedyn yn y diwydiant ffonau symudol gyda'r iPhone.

Geiriau allweddol: Apple, e-fusnes, arloesi, amharu ar y farchnad, arloesi gwerth

Abstract

Innovation is the key factor for building a sustainable competitive advantage and becoming an industry leader. This paper seeks to define and distinguish between the terms e-business and e-commerce. Using Apple as an example, it analyzes how e-business is integrated into the organization and how this integration provides new opportunities for Apple. In my analysis I focus on Apple's innovation strategy and how the company has managed first to dominate the music industry with the iPod and subsequently the mobile phone industry with the iPhone.

Key words: Apple, Apple ecosystem, business models, business model canvas, e-business, e-commerce, innovation, market disruption, value innovation

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Introduction

Apple is one of the most famous and richest companies in the world, having a brand value that surpasses $145.3 billion (Forbes.com, 2015). Apple products are classified into three product lines. The initial product line included computer hardware and software products which were developed in 1976 by Steve Wozniak, Ronald Wayne and Steve Jobs (Noren, 2015). Apple's second product line includes mobile devices which the company has produced since 1996 (Noren, 2015). Mobile devices include iPod, iPhone, iPad, Apple Watch and Apple TV. The last Apple product line is the iTunes Store. The iTunes Store was set up as an extra support for the iPod, but now, as Apple has broadened its activities beyond music, iTunes has become the company's main e-commerce engine for its devices. It offers apps, books, videos and music design. Apple has become successful due to its innovative design of products and services. However, given rapid changes in technology and the development of e-business, Apple has a new challenge to face and successfully overcome if it wants to retain its leading position: the change from the traditional business environment to an e-business environment.

1. E-Business and E-Commerce

Table 1: E-business vs E-commerce

E-business	E-commerce
Buying and selling electronically	Sell-side e-commerce
Electronic procurement	Buy-side e-commerce
Electronic distribution	
Online customer service	
Secure transactions	
Automation of processes	
Electronic collaboration	

(Combe, 2006, p. 2)

The business environment has been transformed from the traditional business (e.g. physical premises) to a more technology based environment (i.e. e-business environment). According to Combe (2006, p. 1):
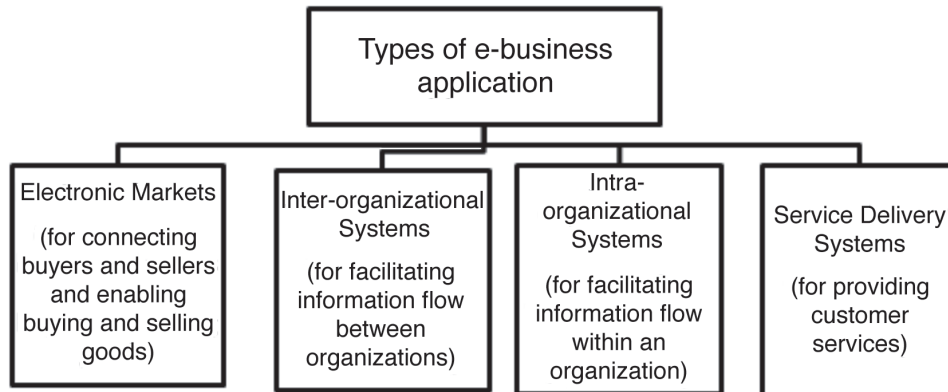
> E-business is the use of internet to network and empower business processes, electronic commerce, organizational communication and collaboration within a company and with a company's customers, suppliers and other stakeholders. E-business utilises the internet, intranets, extranets and other networks to support commercial processes.

E-commerce is the marketing and servicing of products and services through computer networks (Mariga, 2003). Therefore, e-commerce is a subset of e-business. The difference between the two terms is that e-business includes internal transactions such as supply chain management, logistics and payments.

Types of E-Business Application

Companies can be involved in e-business at three different levels: either they do not have to have any involvement in e-business at all (i.e. using only traditional methods

Table 2: Turban's types of E-business application (Xu and Quaddus, 2010, p. 9)

Types of e-business application			
Electronic Markets (for connecting buyers and sellers and enabling buying and selling goods)	**Inter-organizational Systems** (for facilitating information flow between organizations)	**Intra-organizational Systems** (for facilitating information flow within an organization)	**Service Delivery Systems** (for providing customer services)

and physical premises to offer goods/services), or they can have partial involvement (i.e. mixing traditional and electronic distribution channels) or they can be fully involved (i.e. only online business) (Xu and Quaddus, 2010).

There are many ways to conduct an e-business depending on the type of system involved. There are 4 types of e-business system: i) electronic markets; ii) inter-organizational systems (e.g. extranets); iii) intra-organizational systems (e.g. intranets); and iv) service delivery systems (e.g. online banking or other online services) (Turban, 2012).

Apple operations already embed the concept of e-business in all the systems described in Table 2. Apple uses e-markets such as Apple.com, App store, and iTunes to enable customers to purchase products/services. As far as the inter-organisational aspect is concerned, Apple uses it to monitor its stock levels and request extra materials from their suppliers when the company decides that it should produce more product quantities (Lu, 2015). Moreover, Apple uses barcodes to monitor its products at every step of the supply chain process to ensure they are not lost or stolen; other organisations are responsible for the manufacture of its products (e.g. Foxconn) (Lu, 2015). In the service delivery system, Apple offers online support to its customers to help with device/service problems. Apple also allows customers who use its electronic market to purchase products and have them delivered to their home/business address.

Apple also offers basic delivery options to its customers; they order online and can get their products delivered within 4–5 days. According to Peter Drucker (1999) e-commerce will become a "core competence" that will differentiate organisations and add extra value to the companies. Quality, speed and responsiveness are the main factors that characterize effective delivery systems. Apple has, therefore, the opportunity to offer a better delivery experience to its customers. Apple has invested in an ecosystem model (Cuadron and Peteghem, 2015). It has created products that synchronize with each other and provide added value to the customer experience. Apple has the opportunity to completely change the way its delivery has been managed due to its ecosystem strategy. For example, it may be timely for Apple to invest in an app so that when customers order a product online they can track the route of the order on another Apple device until it is delivered. The customers could receive notifications a couple of hours before the delivery and say whether they are available, or if they prefer to change the delivery time, thus enabling Apple to save

Table 3: Business categories

Business to Business (B2B) All the participants are organisations and businesses (Apple)	**Intrabusiness EC** All the internal business activities (e.g. exchange of good/service/information within the organisation. This also includes things such as online training (Apple)
Business to Consumer (B2C) Ths involves transactions of services or products between a business and a consumer (e.g. amazon, Apple)	**Business to Employees (B2E)** This is a subset of the Intrabusiness and is when the business delivers services/information/products to its employees (Apple)
Business to Business to Consumer (B2B2C) A business offers a service or product to another business who then offers that product to its own consumers (e.g. godiva.com, Apple)	**Consumer to Consumer (C2C)** Consumers transact directly with other consumers (e.g. individual selling of residential property, eBay transactions)
Consumer to Business (C2B) This category includes individuals who offer service products to business (e.g. priceline.com)	**Collaborative Commerce** Individuals or groups collaborate to create a product
	E-government A government buys or offers products/services/information from or to citizens (G2C)/businesses (G2B)/governments (G2G)

time and money. Apple could offer this as standard or premium delivery and charge extra for this type of delivery option.

Another way to categorise e-business is to consider the type of transaction and the relationship among the participants making the transaction. In Table 3, there is an explanation of these different types (Relevance).

2. Innovation

According to Urabe *et al.* (1988, p. 3):

> Innovation consists of the generation of a new idea and its implementation into a new product, process, or service, leading to the dynamic growth of the national economy and the increase of employment as well as to a creation of pure profit for the innovative business enterprise.

Tidd and Bessant (2009) identify seven key characteristics of innovative organisations: i) vision and will to innovate; ii) key individuals; iii) appropriate structure; iv) creative environment; v) effective teamwork; vi) external focus; and vii) high-involvement innovation. A company usually hopes to embody some of these characteristics. Apple follows an "integrated approach" since it designs, manufactures and delivers products to customers through its own retailers (Hawn, 2007). According to the Boston Consulting Group, Apple is the world's most innovative organisation (Adams, 2016).

Value Innovation

The majority of organisations focus on meeting or offering something better than their competitors in the market. Therefore, they follow business strategies similar to their

Table 4: Conventional Logic vs. Value Innovation Logic

The five Dimensions of Strategy	Conventional Logic	Value Innovation Logic
Industry assumptions	Industry conditions are given	Industrys conditions can be shaped
Strategic focus	A company should build competitive advantage. The aim is to beat competition	Competition is not a benchmark. A company should pursue a quantum leap in the value to dominate the market
Customers	A company should retain and expand its customer base through further segmentation and customisation. It should focus on the differences in what customers value	A value innovator targets the mass of buyers and willingly lets some existing customers go, it focuses on the key commonalities in what customers value
Assets and capabilities	A company should leverage its existing assets and capabilities	A company must not be constrained by what it already has. It must ask, what would we be if we were starting anew
Product and service offering	An industry's traditional boundaries determine the products and services a company offers. The goal is to minimise the value of those offerings	A value innovator thinks in terms of total solution customers seek, even if it takes the company beyond its industry traditional offerings

(Caudron and Peteghem, 2015)

competitors. As a result there is keen competition on cost or quality but arguably less focus on innovation. According to Kim and Mauborgne (2004), companies that focus on identifying new opportunities are the ones that develop real value innovation. They identify two forms of strategic logic which a company may follow: the Conventional logic and the Value Innovation logic. Organisations shape their strategies based on 5 dimensions: i) industry assumptions; ii) strategic focus; iii) customers; iv) assets and capabilities; and v) product and service offering. Based on this approach, enterprises may be either conventional or value innovators.

Industry Assumptions

As far as the industry dimension is concerned, many companies accept industry conditions as a given and follow a strategy based on those characteristics (Kim and Mauborgne, 2004). However, value innovators invest in research and development to create new products/services that they hope will transform the current market. New markets sometimes provide value innovators with competitive advantages causing other companies to reinvent their products in an attempt to stay on top of the market (Kim and Mauborgne, 2004). This was the case when Apple launched the iPod in 2001 and then in 2003 the iTunes software (Ekekwe and Islam, 2012). Apple signed an agreement with the 5 biggest music companies to enable users to legally download music from iTunes directly to their devices at a reasonable price. Therefore, customers could select and download single tracks rather than purchasing the entire album; this innovation made Apple the biggest music retailer although it does not sell physical CDs (Shaughnessy, 2015). However, the iPod was just the beginning of Apple's market disruption strategy, and since then Apple has disrupted the mobile industry

Table 5: Market Disruption by Apple Products

Product/Service	Eroding	Dominating	Obsoleting
iPod and iTunes (2001–present) iPod Touch	Handheld gaming consoles Music retailers	Portable media players	Non-digital portable media players (CD players, SONY's Walkman, etc)
iPhone (2010–present)	Mobile phones Handheld gaming consoles	Smartphones Portable media players	Completely new market
iPad (2010–present)	Netbooks Laptops (to a lesser degree) Handheld gaming consoles eBook readers Portable DVD players	Tablets (new category)	Netbooks (iPad and future competitors in the table PC market are likely to increase the pace of convergence between laptop and netbook categories, leading to the demise of netbooks)

(Markman and Phan, 2011, p. 333)

with the iPhone and the computer industry with the Mac and iPad.

Strategic Focus

In conventional strategy, organisations allow their competitors to set the standards and follow the safe path by slightly differentiating their products to gain a competitive advantage (Kim and Mauborgne, 2004). The Value Innovator's focus is not on competition. Value Innovators look to add value to their products in a way which will enable them to dominate the market rather than just increase their market share; this is clearly demonstrated by the iPhone (Kim and Mauborgne, 2004). When the iPhone was launched, it did not match the functionality of its competitors. For example it was 2G and not 3G; it did not support the installation of applications as the competitors' product did; it had poor camera quality; and it did not have a QWERTY keyboard (Fogg, 2015). However, Apple's focus was on providing a better user experience and online support. The launch of the App store in 2003 provided additional functionality through apps. Apple had identified the factors that would make its iPhone superior (e.g. easy internet access through the mobile phone), and focused on these aspects rather than just improve what other companies were already offering.

Customers

Most companies search for ways to develop and grow through the retention and expansion of their current market share. This approach leads to higher customization which meets customers' specific needs. However, value innovators do not focus on customers' differences but rather on their similarities. The Value Innovator's focus is on what their market values most even though this might result in losing some customers (Kim and Mauborgne, 2004). For a product/service to be a disruptive innovation (see Table 1) it should exceed customers' performance expectations in the existing market (Christensen, Raynor and McDonald, 2015). The success of iPod was due to three core aspects in the portable music industry: i) battery life; ii) storage capacity; and iii)
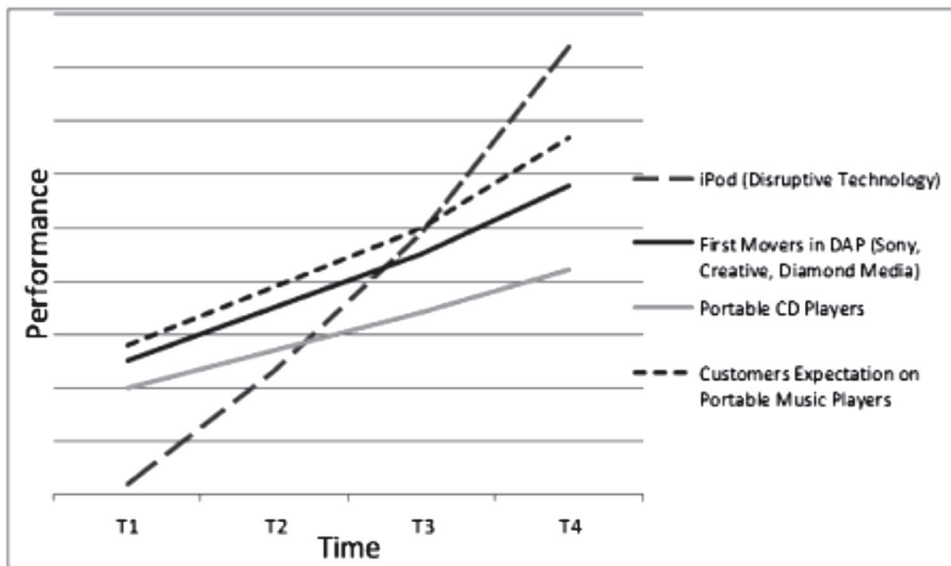
Figure 1: Market Disruption by the iPod in the Portable Music Industry (Ekekwe and Islam, 2012, p. 30)

size (simplify).

Assets and Capabilities

Most organisations assess their opportunities depending on their current product lines and how they can improve what they already offer. In contrast Value Innovators do not limit their choices to their existing product line but rather look for new market opportunities (Kim and Mauborgne, 2004). When Apple introduced the iPhone it was a move that probably resulted initially in harming its iPod product line. Apple moved from the music industry to the mobile industry by cannibalising its own products (Thomas, 2015). However, the iPhone turned out to be the core product of Apple's product line. The iPod is still important for Apple since it brings iPod users into Apple's ecosystem by locking their purchased songs through iTunes (Thomas, 2015). Once customers purchase an iPod they can also download music to other Apple devices, including the iPhone. Apple, instead of limiting itself in its current product line, made a move that has given it a significant sales boost. It already dominated the mobile market with iPhone but also found a way to leverage its existing iPod line.

Products and Services

Most organisations compete on existing products and services without trying to find ways of innovating. They make small changes which does not change the market. Value Innovators cross these boundaries and think in terms of providing a total solution to their customers even if this results in orienting the company in an entirely new business direction (Kim and Mauborgne, 2004). Apple is both a manufacturing and software company which has its own retail shops. Apple exploits opportunities by creating an ecosystem that offers to the customer a wide variety of options by using the company's unique software and hardware. Apple's latest product line is Apple Watch entering them into a completely new market, which does not correlate with

existing product lines. This is another example of Apple's strategy, of not to restrict the company's vision. With the development of the Apple Watch the company is now seeking to disrupt the smart watch market.

The Apple Ecosystem

An ecosystem is created when a business is able to offer a wide range of products/services that connect with each other to offer a great user experience and bring about a high level of dependence from the customer (Caudron and Peteghem, 2015). Once the customers identify with the product and system, it is difficult to withdraw from the grasp of the company as advantages would be lost (Jackson, 2015). For example, customers can synchronise their iPhone, Mac and Apple Watch, and if they decided to change their mobile device from Apple to another mobile provider, all these benefits would be lost.

Globalisation and rapid technological changes have created a competitive business environment for organisations. Customers are becoming more demanding as they have the ability to choose from a large number of organisations to purchase from. Organisations need to react very quickly in order to protect themselves from the threat of consumer loss, but they also take advantage of opportunities that have arisen from this new business environment. Therefore, since the current business environment companies operate in changes, there is a need for business strategies to change as well.

Value Innovation Through E-Business Models

The development of the internet has completely changed the way organisations operate, changing customers' habits and expectations of the products/services delivered by companies. Osterwalder and Pigneur (2010) developed a Business Model Canvas that helps organisations to analyse their current situation and identify challenges and opportunities that they can take advantage of. Based on the Business Model Canvas and their value propositions companies decide the strategies they should follow in

Figure 2: Apple Ecosystem (Caudron and Peteghem, 2015, p. 56)

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