Multi-dimensional nature of innovation at Amazon

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Abstract: The paper presents the evolution of Amazon as a company case study based on the analysis of documentary data and interviews with industry consultants responsible for advising strategic growth plans for large and fast growth firms in technology-intensive industries. Our analysis reveals many distinct and diverse patterns of innovation at Amazon that come under customer-driven innovation (based on unmet needs revealed from customer research), technological innovation (leading to radical process redesigns), business model innovations (stemming from bold new visions about the future), and open innovation (co-innovation partnerships with other firms). While our examples from Amazon provide the empirical basis for the paper, we believe that the patterns of innovation revealed by these specific examples underline broad patterns of innovation models that other firms can emulate. We conclude the paper with implications for future research and practitioners.

Keywords: Amazon; B2C innovation; continuous innovation; open innovation; firm transformation.


Biographical notes: Jesse Arnett has 20 years of work experience (two in academia and 18 in industry). Automotive, aerospace, electronics and industrial components marketplaces are the fields he has worked in. He received his Bachelor’s degree in Applied Science from Slipper Rock University and Master’s degree from Kent State in Manufacturing Technologies. He is currently attending University of Phoenix in Organizational Management Doctorate Program.
1 Introduction

Amazon was founded and incorporated in July of 1994. As one of the first retailers on the internet, Amazon has become the world’s largest retailer after 20 years of operations. Amazon is headquartered in Seattle, Washington. Over 2 million third-party sellers and Amazon offer millions of products, including electronics, jewellery, health and beauty products, sports and outdoor gear, and automotive and industrial supplies (Amazon, 2015).

Innovative conceptualisation of internet business use and leverage allowed Amazon to become the first retailer and distributor of its kind. Jeffery Bezos created Amazon in his garage after moving to Seattle from California, and he is known as one of the most famous 21st century innovators for creating an innovative business model under continuous change, which allows for sustainable competitive advantages in the internet business to consumer (B2C) market. Internet B2Cs evolved in the early 1990s when the internet grew robustly and household access and use became commonplace. Amazon, among the first businesses to leverage the new marketplace, responded to the paradigm shift by filling a gap and building barriers to entry, similar to Kim and Mauborgne (2015) discussion on blue oceans. Firms create new opportunities through innovative and technological solutions to avoid commoditisation and product degradation. Instead of competing on price and market share, known metaphorically as a red ocean, a firm that seeks to innovate by bringing new products and services to the market creates competitive advantages by being the first in the market, setting the rules, creating and sustaining regulatory practices, and reaping higher than normal profits. These areas that firms seek to move to in their business models are known as blue oceans. Amazon continues to possess a reputation as a blue ocean firm, where this B2C embraced the internet revolution and became an agent of the buyer and migrated from the traditional status of being an agent of the seller (Anil and Nikhilesh, 2005; Rodriguez-Ardura and Meseguer-Artola, 2010).

Jeffery Bezos’s unique visionary approach established his mantra for his mission. Benzos’s mission was to create product offerings that let the customer experience learning, and inspire using and online service (Jones, 2013). Today, that mission statement has changed: “To be Earth’s most customer-centric company where people can...
find and discover anything they want to buy online” [Corporate, (2015), p.1].

Customer-centric is a key term in Amazon’s mission statement to imply that Amazon is not only focused but also in lock-step with its customers’ desire to purchase the product they want. Amazon focuses on customers in its innovation process by addressing a host of new concerns, concepts, and managerial decisions, including anticipation of customers’ latent needs (Desouza et al., 2008; Mazur and Archakova, 2011). Amazon is particularly unique compared to traditional customer-driven models of product development (Rogers, 1995) that develop products based on customer input and engagement. Amazon’s value creation is in leveraging social networking systems using customer-driven innovation to co-create the value proposition (Fragidis et al., 2010; Terninko, 1997). As Kotler et al. (2010) point out, Amazon, has transcended from products to customers to the human spirit by deeply ingraining innovation as an underpinning to its mission. Mission statements for teams and organisations are critical to communicating vision and driving culture. Strategic direction is facilitated through an organisation’s mission statement (Hickman, 2010). Mission statements provide clarity to team members and set expected values for the organisation. Regarding mission statements and ethical practices, Hickman (2010, p.518) offers that “mission statements often refer to values associated with ethical practices”.

The central purpose of this study is to derive an understanding of strategic decision making for new product releases at Amazon. There are questions surrounding why Amazon decided to segregate its release of Echo from the 2015 Prime Day rather than bundling the technologies together to leverage their harmonious elements. Further, discussion in this study focuses on how organisational learning plays a part in technological advances and new product releases that may create sustainable competitive advantages. Another objective of this study is to develop understandings of decision making and the creative innovation release to consumer markets, which may provide new meanings where informational gaps exist.

2 Study methodology

The choice to use a case study design to analyse and understand innovation and strategic decision making at Amazon provides a framework to investigate, synthesise, and derive new knowledge of recent events. These events shape and influence technology driven firms through applied learning of market-driven data. According to some researchers, case studies provide a weak foundation to find meaning and create valid generalisations of larger populations. However, the integration of other cases or applications through another firm’s lens can solidify interpretive or analytical revelations and enhance their believability (Yin, 2013). While the skeptical point of view is understood, recent events are usually devoid of meaningful studies, thus creating a literature gap. It is the view of this paper that case study analysis of documentary data will provide the most meaning for initial investigation of Amazon’s strategic decision for Prime Day and Echo release.

The purpose of this study is to answer research questions proffered earlier in the paper. How did Amazon’s strategic decision-making affect its ability to leverage new product releases to consumer markets and what part does organisational learning play in technological advances and new product releases. These questions are answered through the case analysis and application of a theoretical framework. While some studies are
more delineated in analytical approaches, this method is conducive to the problems and questions raised. According to Stake (1995), data analysis does not have a defined beginning and end in the collection, organisation, and interpretation of data. Merriam (1998) continues that analysis is the making of sense out of data that involved the collection, reduction, interpretation of what the information conspires to tell us.

Some researchers have scrutinised the case study method as lacking grist and rigor since there is a lack of multiple sources or synthesisation, thereby generalising without enough empirical background or sample sets (Holt, 2014). The purpose of this qualitative study allowed for a deeper investigation of the factors that drove Amazon to its decision-making approach when Prime Day and Echo were released. This study addresses a very recent event in the technological market. Thus, a gap in empirical investigations for Prime Day, Echo, and Amazon’s innovative design provide the initial foundation to build new knowledge upon. According to McCollum (2013), the case study approach is an effective and popular teaching tool to analyse events, decisions, or systems, and they are used in higher education and highly favoured at Harvard Business School. Other researchers support the case study method because it focuses on problem-based learning, enriches the thought process, and challenges reflective thinking (Allen et al., 2011).

3 The keys: technology, innovation, and organisational learning

Discussing technology without an understanding of an organisation’s ability to learn and how it learns would be fruitless. Without innovation, there is a severely reduced need to invest in a technology solution. According to Molina-Morales et al. (2014), management has learned that the acquisition of new knowledge through capital or labour acquisition improves its organisational innovation processes. These acquisitions can revolve around markets, competition, regulatory, or other contexts. There is another basic understanding: that technology is in continuous flux. After knowledge is acquired, it must be organised and bundled into productive and predictable processes to leverage improvements. Considering the challenges of management, however, Ozlati (2015) and Drucker (1999) contend that knowledge management increased worker productivity in the 20th century. Consequently, this hurdle may be difficult to replicate in the 21st century, as improvements to knowledge worker productivity abysmally low.

Shifting technology affects knowledge worker productivity and skill requirement levels. Much of the information available must be interpreted before it can be presented as knowledge. Kirsch et al. (2015) found that many people in knowledge management have confused the differences between data, information, and knowledge. Furthermore, continues Wilson, tacit knowledge is key to most organisations that are involved in innovation. Polanyi described tacit knowledge as hidden knowledge, and there are many things that we know that are difficult to translate, process, or communicate to others. According to Ozlati (2015) and Drucker (1999), knowledge management and knowledge sharing involve a focused task, the need for autonomy, continuing innovation, benevolence-based trust, continuous learning, valuing of quality over quantity, and the importance of viewing the work as an asset rather than a cost. The most important factor for the worker to consider in changing technological paradigms is the need for continuous learning and the ability to stay on the cutting edge as technology changes or shifts.
In this sense, change is a movement along the technology curve. However, a shift in the technology curve to a new area will most assuredly create opportunities for agile firms and workers and hurdles for those who are too rigid to change. Friis et al. (2009) cite that knowledge work and its specialists designate a marked difference between modern work and Industrial Revolution era work. The need for continuous software development has integrated the world more closely and created increased demand for those skills among the business sector. The management of information technology is both an enabling factor of increased sales and lower costs as well as an important ingredient of strategic vision.

An organisation’s ability to learn, adapt, change, innovate, and gain competitive advantages is related to absorptive capacity (Robinson and Stubberud, 2011). Ahern et al. (2015) argued there were three major components of organisational learning:

- **a** single loop, where basic tasks are executed
- **b** double loop where organisational norms are challenged
- **c** deutero-learning where both learning styles occur congruently.

Ultimately, radical innovative changes or paradigm shifts are outcrops of the third tier of learning, triple loop feedback. This style of questioning the how or what involves a progressive discussion as to the why and how come of an issue (Peschl, 2007). Akhtar et al. (2013) state that an organisation with an ever-expanding capacity to create opportunities in new areas that are innovative should be considered learning organisations. Additionally, Akhtar et al. (2013) contend leaders are coaches and facilitators who need to empower employees to make decisions that are fundamentally sound. Furthermore, organisational learning leads to competitive advantages where the capabilities of an organisation exceed those of competing firms.

**4 Amazon’s key innovations**

Amazon was the first mover on the internet in many different respects. Major innovation was the business model of B2C, which revolutionised the way consumer’s purchase goods. Three important innovations Amazon pioneered were one-click technology, automated customer order confirmation, and collaborative filtering technology to analyse customer purchases. Amazon’s initial innovation was the B2C business model, which was very quickly imitated by many start-ups. The barrier to entry was relatively low, as all a company needed was money to start a website. However, Amazon, with its $7 million start-up fund, was quick to innovate and stay ahead of the pack of companies that ended in the dot com boom previously discussed. One element of Amazon’s success is the speed of innovation, and this has become part of Amazon’s DNA (Mellahi and Johnson, 2000).

Amazon innovations kept constantly renewing the online process and reinventing new processes and business practices that continually pushed it into new areas where the competition had not yet gone. Blue oceans of non-competition are formed by innovation that takes organisation into high margin zones and resets the value proposition for the customer (Kim and Mauborgne, 2015).
One-click and collaborative filtering technologies were two innovations that propelled Amazon past other competitors (Mellahi and Johnson, 2000). Amazon continued innovating and creating value for the customer, which kept the customer firmly in focus, whereas other companies did not. Amazon was one of the first and only B2C companies to offer order confirmation in early 2000. This innovation differentiated it in the customers’ eyes and shifted its value proposition. To create and capture new demand, organisations can generate value by understanding what customers value or need (Kim and Mauborgne, 2015). No organisation withstands the test of time without strong, virulent, robust, and innovative leadership.

5 B2C companies and innovation diffusion into markets

The bursting of the dot-com bubble in the late ‘90s and early 2000 caused major upheaval in B2C Companies. Failure to innovate was a major cause of these collapses. With the advent of the internet, many start-up dot-com companies entered the market, which set the stage for a huge economic and market downturn (Roser et al., 2013). In the early 2000s, B2C companies failed to bring early adopters over to purchase online in a timely fashion. With the saturation in the market of these B2C companies, a failure was imminent. According to Rodriguez-Ardura and Meseguer-Artola (2010), the first B2C companies failed to concentrate on timely delivery and customer satisfaction. Instead, these start-up B2C companies gave all their concentration to technology and marketing. By 2000, 11% of these organisations traded at a price higher offering price (Anil and Nikhilesh, 2005). Furthermore, the failure of the dot-com companies was extensive and caused large numbers of workers to be laid off.

6 Innovation and leadership

Leading in innovation is a skill that organisations need to improve. In 2014 at the Global Leadership Conference, a cross-section of industry leaders were questioned on their thoughts on the innovation skills of leaders in their respective industries. What was found was that perspectives on leadership in innovation were weak see statistics below (DDI, 2015). A definite gap was found in which leaders thought themselves sufficient in innovative management. Only 56% thought themselves effective (see Figure 1; DDI, 2015). To close this gap, many training companies are available to be brought either in-house or into leadership can be sent out.

Leaders have the responsibility of maintaining and supplementing top performers who know how to innovate. In discussing retention of top performing innovative personnel, Cohn et al. (2008, p.64) stated, "Successful companies have intense talent-management processes in place and put identified innovators in the line of fire, where natural innovators thrive". Leaders at the top levels of organisations must be supportive to develop and maintain a culture of innovation. Innovation requires a nurturing environment that is supported by the senior leadership to be effective at all levels of the organisation (Maital and Seshadri, 2012).
For Amazon to find new product frontiers, build barriers to entry, and reap higher than normal profit margins, the organisation’s cultural commitment to continuous improvement is needed to maintain and accelerate innovative contributions. Cutting-edge training programs and advanced software applications that leverage internal system architecture improve knowledge management and facilitate innovation by fostering a congruent format that will enhance communication and data transfer of creative projects. Another way for leaders to foster innovation is by creating an enabling innovation system that links many parties together (Chesbrough et al., 2006), such as Amazon and third party innovators who will be discussed later. Enabling innovation systems are one means by which communities and organisations may foster an environment of innovation (Pearce et al., 2012).

7 Prime Day 2015

Amazon’s Prime Day was a failure from the customers’ perspective. Amazon touted Prime Day as “a one-day only event filled with more deals than Black Friday, exclusively for Prime members around the globe. Members tell us every day how much they love Prime and we will keep making it better” [Corporate, (2015), p.1]. It did not live up to these statements in the customers’ perceptions.

Prime Day was Amazon’s attempt at innovating savings events. It was profitable monetarily. However, this even impacted Amazon’s customer perceptions very negatively because there were few deals and products customers’ wanted. If you do not give the customer what they want with an innovation, this innovation has little chance of success (Maital and Seshadri, 2012). Amazon customers found only small deals, and
many reported a great deal of dissatisfaction with the event. Although profitable, the event soured customers on Amazon as it did not meet their expectations. CNN Money reported on Amazon’s failure when they stated, “Unhappy Amazon shoppers vented on Wednesday about its ‘Prime Day’ sales, slamming the online retailer with the hashtags that included: #unhappyPrimeDay, #AmazonFail, #gobacktosleep, and #PrimeDayFail” [Garcia, (2015), p.1]. Amazon’s customers viewed this day as showing a lack of integrity on Amazon’s part. A customer stated on an online blog that Amazon should have called Prime Day April Fool’s Day instead (Garcia, 2015).

8 Amazon Echo

Amazon Echo has the potential to revolutionise how we function not only at home but also in other environments, such as work. Echo has the capacity to be adopted by many of its customers for use in controlling technology in their home and other areas. It is a precursor to a virtual assistant that is accessible like Jarvis in the Avengers movies. Science fiction is becoming reality.

While Amazon has a strategy for launch of this technology, it missed a valid opportunity to promote it on Prime Day 2015. Amazon will need to demonstrate to its customer base why they would want such a product, as it is new technology. Customers’ perceptions of incremental improvements to technology rather than new technologies are positive because new technologies are not normally well understood by the customer. This can lead to the commercial failure of the innovation (Anil and Nikhilesh, 2005).

In discussing Echo and its software technology, Lopez (2015, (p.1) stated, “A little over a week ago, Amazon announced it was opening up its Alexa voice assistant – the technology behind the Echo – for use by third parties for free, see Figure 2. Now developers can finally start integrating the technology into their own software and devices with a preview of the Alexa Voice Service”. This will create an open platform for third parties to adapt their products to use the Echo as a portal. This is an extremely strong strategy. In discussing how to create innovation in the current business environment, Chesbrough and Garman (2009) indicated that creating open domains can potentially lead to breakthrough advances and provide a framework for continuous innovation. The key point to note here is that in the open innovation mode that requires collaboration with outside entities, the traditional notion of firm competencies as those residing within a firm should be redefined as those that are both inside and outside the firm.

The Echo product line is just starting to be diffused to the customer base by Amazon. Amazon missed a prime opportunity to market the new product and speed the Echo up the curve to earn high margins that are possible when early adopters and the early majority are purchasing the product. High margins are possible during the beginning phases of product diffusion due to low competition in the market and cost prior communication at the top of the diffusion curve (Tidd and Bessant, 2009). Amazon should take advantage of this time when only a few competitors are on the market and leverage this new technology. Amazon has open sourced the software so other companies can make products that will use the Echo as a platform, and this should elongate the slope line and extend the time to commoditisation.
Multi-dimensional nature of innovation at Amazon

Even with an open platform, Amazon will have to continuously innovate in order to stay out of the commoditisation downturn of the curve as shown in the graphic above. According to Mellahi and Johnson (2000), a critical factor in staying ahead of the competition is the ability to continuously innovate. Another factor is the speed at which Amazon is able to diffuse the product at the start of the curve to get the profits before the imitators enter the market. Speed to market is a vital element of high margins in the e-commerce arena. Amazon has excelled at this in the past with one-click innovation and the ability to include third party developers (Lindic and Silva, 2012).

Figure 2  What is Echo (see online version for colours)

- Amazon Echo – Innovation at work

Figure 3  Innovation model (see online version for colours)
Within four years, Amazon will reach market saturation with the device. E-commerce has truncated product life cycles, whereas the manufacturing sector tends to have a longer life cycle (Guinee et al., 2010). Amazon will again need to innovate to stop the downward slope toward the end of the life cycle and low margins (see Figure 3). Amazon needs to take careful consideration of where they currently are with the Echo product. Who are the customers that will be the early adopters, and who will be the early majority? These are the questions they should be asking. Where do they envision the market going? How will the open sourcing affect the top of the diffusion curve? These are other questions they should be asking so they will be ready to take the innovation further and create a new curve before the downward trek on the left side of the distribution with the late adopters. By asking these questions, Amazon can prepare for the upcoming challenges their new product will face. While Amazon can be assumed to have a strategic 12 month, 2, 4, and 6 year plan for updating this product line, a large opportunity was missed when they failed to incorporate a large marketing push on the product with incentives during the Prime Day event. Amazon missed an opportunity to accelerate the product line to higher level of sales by acquiring a greater portion of the early adopters with the exposure that could have been piggybacked with all of Prime Day’s promotions. Utilising the as is and to be model for strategising can be a most powerful model to focus a team’s energy on creating a realistic plan to innovate the system (McGoff, 2012).

9 Discussion

The patterns of innovation at Amazon can at best be described as multimodal and continuously evolving along the lines of emergent strategy (Mintzberg and Waters, 1985). While firms typically focus on one or a few modes of innovation, Amazon appears to be multimodal (customer-driven, technological, business-model, and open-innovation modes). The distinction here is that multimodality may be the preferred emergent form of innovation in a world where technological change is becoming too rapid. Amazon has a highly innovative past and present. Amazon has innovated ahead of competitors. However, they have not always been successful with their innovation attempts. The attempted marketing innovation of Prime Day, while profitable, did not favourably impress their customers and actually caused many of them to become disenchanted with the retailer. Amazon did not interface with their customers and failed to meet their expectations for Prime Day, causing a serious breach in its integrity with its consumer base that will need to be healed.

Amazon Echo is the next technology on the horizon. Amazon needs to move now and have an effectual strategy to address the Echo’s eventual growth and commoditisation, which will allow for continuous innovation. Discussing innovating for survival, Maital and Seshadri (2012, p.22) state, “As once innovative products become mature, their growth slackens and they reach market saturation. At this time, products are most vulnerable to attacks by other innovators”. While Amazon may have the next generation Echo in the wings, the timing for its release will need to have the consideration of how to keep continuous innovation alive so it does not fall into the trap of competition in commoditisation that hurt so many companies and is so pertinent to the highly contested market of B2C companies.
One-click and customer order notifications are only two of Amazon’s innovations. Along with the early advent of the B2C business model, they helped to create and then later define an industry. Amazon has innovated ahead of competitors to keep its competitive advantage and find areas of non-competition to exploit. Amazon is an amazing phenomena, and to stand the test of time, it will need to continuously innovate ahead of the vast array of competitors it faces in the B2C market. Continuous innovation is needed to stay in blue oceans of low competition and be the most effective (Kim and Mauborgne, 2015).

10 Conclusions

Amazon’s diverse innovation pathways offer valuable lessons for both theory and practice. From a practice perspective, the diversity of multiple innovation pathways illustrates the principle of equifinality, which is that there are many paths to reach the same end goal of innovation. As the future success of any one of the pathways is uncertain, multiple paths must be simultaneously pursued to the extent that a firm can afford to allocate resources. The firm reinforces its commitment to the importance of sustained innovation for its future survival. From a theory perspective, the B2C literature tends to focus on co-creation as co-innovation, with two distinct streams of literature rooted in supply chain innovation (seeking value chain efficiencies) and strategic alliance innovations (development blue ocean strategies that in-house competencies would not allow). Amazon provides some specific examples of how success can be achieved in such new pursuits that combine multiple methodologies. As the case of Amazon illustrates, we can draw the conclusion that the pursuit of innovation is multidimensional and based on reconceptualising firm competences not as those residing within the firm but as those that a firm can harness from within and without. Our conclusion is that Amazon provides an excellent example of multimodal innovation that leverages the competences of its global partners in ways that do not lock the firm into one particular business ecosystem. Thus, Amazon demonstrates agility of a firm in its ongoing mutation to adapt to the changing world.

References


