A Case Study of Management Information System-Amazon.com

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Abstract: This case study was done on Amazon.com, in the form of responses to 10 specific questions issued by the University. The main topic covered was MIS and the various facets thereof and how they relate to Amazon.com. The growth of Amazon.com, which is supported by the company’s 4 pillar strategy for success, is heavily influenced by information. Since the company is internet based, network plays an integral role, as it connects the customers with the other stakeholders of the company. Possessing the ability to properly manipulate technology and having continuous updates, places the company at a distinct advantage over the likes of Alibaba and other brick-and-mortar chains. With a combination of Artificial Intelligence and cloud computing, etc., Amazon.com is profoundly influenced by internet. This goes as far as their marketing model, which is digital and includes influencers and social media. Though they would have taken many steps towards their security and privacy, Amazon.com was still vulnerable and suffered cyber-attacks. Over the years, the company would have taken steps towards BPR and addressing ethical issues. Nevertheless, Amazon.com was sanctioned for their unethical and insensitive approach to business, which included marketing products with Hindu Deities and retrenchment of thousands of workers.

Keywords: MIS, Amazon.com, role of network, competitive advantage, digital marketing model, strategies of Amazon.com

1. Introduction

Management Information System (MIS) is the study of hardware and software systems, technology, people and organisations, and the relationships between them; it provides a service through technology (Texas AM University, 2023). MIS is as old as 1801, where it can be traced to the Industrial Exhibition in Paris of that year, where it was introduced in the form of punch cards (Weedmark, 2019). Between the 70s and 90s, when computers became more manageable, MIS evolved beyond basic accounting, to other areas of business, including inventory management, marketing, manufacturing, engineering, etc. (Weedmark, 2019). With the advent of internet and its evolution with high speed and broad capacity, practically all employees in a business can make informed decisions, through the use of MIS. According to David Weedmark (2019), creative director, author, editor and publisher, there are 5 types of MIS. These 5 types are: Expert Systems, Executive Information Systems, Decision Support Systems, Transaction Processing Systems and Management Support Systems. These systems assist business managers and employees to make informed decisions.

At the tender age of 30 years, Jeffery Prenston Bezos founded the e-commerce company, Amazon Inc (Encyclopaedia Britannica, 2023). In July 1994, Bezos quit his job as vice-president of the New York global investment management firm, D. E. Shaw and Co. and went to Seattle, where in a home garage, with a small staff, founded the online company. After exploring the names “Cadabra” and “Relentless” (which still takes you to Amazon.com today), finally decided to name the store after the second longest river in the world (Encyclopaedia Britannica, 2023). What started out as a virtual bookstore, Jeff made his first sale in July of 1995(Encyclopaedia Britannica, 2023).

Jeff always knew that he wanted to expand beyond a virtual library. He, however, also knew that he had to take baby steps, until he could have done better (Hartmans, 2023). Hence his strategy of settling for meager profits and re-investing his revenue into the business over the years (GreyB, 2022).

Today, decades later, as of the year 2020, Amazon.com.com, headed by one of its former senior vice-president, Andy Jassy, is the second global 500, plus the second most admired company in the world(Fortune Media IP Limited, 2023).

Amazon.com continues to grow, as it operates in many countries, including India, Singapore, Mexico and the United Kingdom (to name a few), and they continue to expand to capture more industries as the years go by.

This document will study Amazon.com.com in the form of responses to 10 questions which were issued by Texila American University.

Question 1-How Information Influenced Amazon.com’s Growth

Amazon.com’s primary source of revenue remains with their retail business. Sales through the online platforms and the physical stores are the main generators of the business’ income; revenue maintained a steady increase over the years (Johnston, 2023). Amazon.com would have succeeded in building a consumer paradise, by charging less and promising more than their competitors (Jordan, 2019). Amazon.com’s strategy consists of focusing on investing in technology, enhancing its logistics and web services and securing its inventions with the necessary patents (Greyb, 2023).

Jeff Bezos himself would have revealed the secret to his company’s success and growth. He has attributed this to his “obsessive compulsive focus on the customer” (Tam, 2022).

In order to achieve this, the strategy used by Jeff, rests in the company’s 4 pillars strategy for success-the Win Buy Box,

1. Win the Buy Box-When an Amazon.com customer selects ‘add to cart’, the seller who has the buy box at that moment in time, gets that sale (Repricerexpress, 2021). That is essentially, the buy box concept. Amazon.com rewards the buy box to the sellers who offer the best buying options to the customers. In fact, the vast majority of Amazon.com’s sales are done through the buy box. Therefore, if one is not in the buy box, then their chances of making a sale decrease (Gilliland, 2018). For this reason, Amazon.com has opted to rotate the buy box among its third-party sellers. Essentially, the buy box concept relies on the information provided by the sellers. Information such as price, stock and delivery options are used as the criteria for the award of the buy box to the particular seller.

2. Encourage Customers’ Reviews-Customer reviews are most often used as a starting point for product sourcing. This is pertinent information used by consumers to input into their decision-making cycle when they are about to fulfill a need or want. Certainly, this process can be influenced by sellers, in the form of incentivized reviews. However, in this pillar of Amazon.com’s strategy, Amazon.com would have banned this form of review. It is essentially a level playing field on Amazon.com’s site (Gilliland, 2018). It is no doubt, public knowledge that product reviews contribute to purchases, or non-purchases (depending on the review the product receives). As such, this strategy of encouraging the flow of information from consumers, to keep potential buyers informed, would have been effective in attracting more customers to Amazon.com’s marketplace. Moreover, it is directly the fact that customers are not rewarded or penalized for their reviews on the site. Further, on Amazon.com’s site, the ratings and reviews can affect sellers’ ranking, thereby having them appear lower in the product searches (Gilliland, 2018). Customers developed a trust in Amazon.com’s reviews.

3. Create A+ Content-Purchasing a product with little details of description or small, little or no pictures can result in dissatisfied consumers. Dissatisfied consumers are equal to higher chances of loss of revenue and disloyalty among customers. In this pillar, Amazon.com gives sellers the opportunity to provide more information/details of their products. This includes more and larger pictures. This creates more of a connection to shoppers (Gilliland, 2018). The provision of this information keeps the customer better informed as to the possible uses of the product and if the product may suit the needs of the consumer. Further, the consumer has the opportunity to have a better understanding of the appearance of the product for the sake of comparison with, either the item they are trying to replace, suit (example a pistol holster) or substitute. Such information encourages customers, as such, it influences organizational growth.

4. Consider Ads-Amazon.com’s fourth pillar is a robust advertisement strategy. These ads include search ads, product details ads and product ads (Gilliland, 2018). The ads are designed to reach the potential shoppers as the visit the site or browse products on the site. These ads bring along with them, data. Data which was refined and optimized by the advertisers; having been guided by the insights gained from the Amazon.com reports (Gilliland, 2018).

Clearly, Amazon.com’s strategy, which was important to the company’s success, was heavily dependent on information; the passage of information to or from the company and its third-party sellers and their customers. Based on the evidence gained from the research, it is safe to say Information has indeed influenced Amazon.com’s growth.

Question 2-Discuss the Role of Network in Amazon.com’s Business

A network is a collection of computers, servers, mainframes, network devices, peripherals and other devices connected to allow the sharing of data (Computer Hope, 2023). A typical example of a network is the internet, which serves to connect millions of people, all over the globe (Computer Hope, 2023).

Networking plays an important role in connecting the components of Amazon.com’s network; Amazon.com’s network supports it global workloads in the cloud (Knowledgehut, 2023).

Amazon.com started as and continues to be an online based business. As such, Amazon.com’s means of doing business is heavily dependent on networks, including the internet. The internet, as a network, serves as the means through which Amazon.com does business. Specifically, Amazon.com uses a list of AWS networking services to deliver its services to the customers. More particularly, Amazon.com CloudFront is AWS’ native CDN. This CDN routes each request through the AWS and to the nearest edge location to provide the fastest delivery path to the end users (Neenan, 2020).

Amazon.com provides its own products and services as well as those of third-party sellers. The company uses a combination of online market services and delivery via common global delivery couriers and the company’s local delivery fleet. The role of network in all of these transactions and operations, and by extension, Amazon.com’s business, is connecting the company’s customers to the company and the third-party sellers, in order to facilitate the fulfillment of needs, wants and profits.

Question 3-Analyze the Competitive Advantages of Amazon.com Because of their Technology Updating

Amazon.com’s focus on customer experience makes them a leader in E-commerce experience for shoppers (Chaffey, 2023). However, in the recent past, at the heart of Amazon.com’s competitive advantage was the digitization of their Supply Chain(Aaron, 2017). This would have driven their leadership and gave them three distinct advantages over their competitors in E – commerce (Aaron, 2017).

The three advantages are: Unrivalled breadth in products they can offer customers, lower shipping costs that translate to savings for their customers and quick shipment that enables packages to be shipped in two-days or even same-day shipping on many items.
Notwithstanding their leadership position as a result of their technology, Amazon.com, added to their Brick-and-Mortar competition, has the likes of Alibaba (China) to compete with, who quickly catches on to Amazon.com’s strategies. Therefore, constant update and revisits are necessary for Amazon.com to maintain their lead. As part of their continued focus in their customer-centric strategy, Amazon.com continues to upgrade their technology to improve their service. The utilization of Artificial Intelligence in doing business, created a sustainable competitive advantage (Edubirdie, 2022). Further contributing to maintaining their competitive advantage through technology, Amazon.com focused on personalization for their customers. Understanding that the customers’ experience is what causes them to return to the business, Amazon.com greets its visitors with personalized recommendations (Artug, 2022). This personalization comes in various forms. Including Emails, mobile apps, push notifications, etc. (Artug, 2022).

Amazon.com has been opening a few physical stores across the US and UK. These stores are branded ‘Amazon Go’ and ‘Amazon.com Fresh’. However, unlike the traditional shops and stores, there are no cashiers. Customers enter, pick up what they want and just walk out. This upgrade in technology is among Amazon.com’s most recent. It is a combination of Artificial Intelligence, Computer vision and data pulled from multiple sensors to ensure that customers are only charged for the items they pick up (Tillman, 2023). This is called the “Just Walk Out” tech.

As a result of Amazon.com’s continuous update in technology, they remain with the competitive advantage, whether in the virtual of Brick-and-mortar worlds.

Question 4-How Internet Influenced Amazon.com’s Business

With just a few brick-and-mortar facilities across the US and a few in the UK, Amazon.com is a predominantly internet-based business. The company which was established by Jeff Bezos in the early 90s was arguably one of the world’s first online bookstores. Thereafter, Amazon.com quickly became an e-commerce colossus, shipping books and other items to all 50 states (at that time) in the US and 45 countries (History Channel, 2023). Amazon.com continues to grow, and is among the top internet-based companies today; offering the top shelf services to the customers and third-party sellers who use the site on a daily basis. In order to shop on Amazon.com’s website, one can download the Amazon.com App, of just open a webpage and browse, read customers’ reviews (optional) and click on the desired items. This can be done from any space in the world. However, only possible with the use of the internet. Amazon.com supports these actions with the constant update in technology, in a bid to improve the customers’ experience when visiting the site.

Amazon.com uses a combination of technology, which includes Artificial Intelligence, Cloud computing and streaming of movies and sports (Palumbo, 2021). All of which are at the core of the company’s continued growth and success and all of which are heavily reliant on the internet to be effective.

Based on the foregoing, it is safe to conclude that the internet has had and continues to have a profound influence on Amazon.com’s business.

Question 5-Discuss the Digital Marketing Model of Amazon.com

Amazon.com’s digital marketing model is comprehensive. Currently, Amazon.com uses social media to advertise their product (Simplilearn, 2023). The company uses a combination of Twitter, Facebook, Instagram, YouTube and Pinterest to market its products (Simplilearn, 2023). To aid with these mediums, the company utilizes influencers, which further secures the company in the minds of the potential and existing customers; since influencers help companies escape the likes of ad blockers and with the alignment of the right customers (Nielson, 2022). Among the influencers used by the company is Leticia Gardener. Gardener is a mega influencer who has in excess of 2, 100, 000 followers on Tik Tok, YouTube and Instagram and her niche is in fitness, home décor, pets, men’s gifts, etc. (Shuttleworth, 2023). She is well exposed and represents a wide range of products. On the other side of the coin, Amazon.com also utilizes micro-influencer The Jalissa Queen (Shuttleworth, 2023). Jalissa Queen has a small following, a mere 17, 000 plus combined-YouTube and Instagram, with a niche in technology, photography and more (Shuttleworth, 2023).

The advantages of Amazon.com’s marketing model are the ability to have an easy global reach, relative cost efficiency, highly engaging and with the inclusion of the influencers, effective targeting (Simplilearn, 2023). Though a digital marketing model can garner such advantages, they are not without their challenges. With such a model, there is a high dependence on technology, they are highly competitive, and they are riddled with security and privacy issues (Deepak, 2020). Particular to Amazon.com, however, as a result of the robust campaign, the key disadvantage is a sharp increase in cost for the vendors (Burdick, 2019).

Nevertheless, Amazon.com does a good job at mitigating these challenges with their marketing optimization strategy, which includes dayparting and programmatic rules (Burdick, 2019).

Question 6-What are the Strategies of Amazon.com towards Cloud Computing

Amazon.com Web Services (AWS) is an online platform which was launched in the year 2002 and as at 2019, released approximately 100 cloud services, provides cloud computing services. Since for cloud computing services, there is no cost for hardware and software (upfront purchases) and a reduction in security and storage devices, these services are deemed to be cost effective and scalable (Simplilearn, 2023). AWS is a subsidiary of Amazon.com, which offers several on-demand operations, which includes storage, compute power and they assist in corporate scale and growth (Simplilearn, 2023).
AWS is designed to allow application providers, ISVs and vendors to host applications (Amazon.com, 2023). AWS offers many advantages, these include: flexibility, cost-effectiveness, security, reliability, scalability and it is easy to use (Amazon.com, 2023).

Like any other product or service, AWS comes with its challenges. Among those challenges are: It comes with an extra cost for intensive or immediate response (paid support packages), there may be some cloud computing issues, especially when using some cloud servers look back-up protection, downtime or limited control, AWS sets some default limitations, on resources such as volume, snapshots and images, sudden changes in the hardware, may cause some performance issues with the application on the cloud (Simplilearn, 2023).

AWS is the primary profit driver for Amazon.com. In fact, it accounted for about 13% of Amazon.com’s total revenue in the second quarter in 2021 (Page, 2022). Though it is a revenue generating business, the company itself uses the platform. Further, although it is owned by Amazon.com, as a point of principle by the Jeff Bezos, the company pays for the service (Hern, 2017). Through its use, Amazon.com is able to reap all of the benefits of the AWS and they would have had means of mitigating the drawbacks of the system, thereby helping them to maintain their competitive advantage.

**Question 7-Evaluate the Amazon.com’s Move towards Security and Privacy of their Customers**

Personal information can be compromised when visiting online businesses. One of the main drawbacks of e-business and e-commerce is security and privacy issues. These include but are no limited to hacking for financial details and scamming (Toppr, n.d.). Amazon.com, as one of the leading e-commerce businesses is no immune to the likes of hackers, phishing, and other cyber criminality. Amazon.com has a bank of information for millions of people all over the world, which they acquire through their products like Alexa and services, including basic visits to their site.

In June 2022, Paige Thompson, a former employee of Amazon.com, was convicted for her role in the 2019 Capital One breach. Amazon.com was one affected company (Heiligenstein, 2022). Further, in 2021, October, there was a major data leak from Twitch, which is a streaming platform owned by Amazon.com; this was done by an unknown hacker (Heiligenstein, 2022). Over a period of approximately 10 years, Amazon.com experienced in excess of 8 security breaches by known and unknown hackers and malicious employees.

The company, having suffered all of those attacks, has since taken measures to upgrade their security and privacy for their customers. These measures include:

1. Revising their privacy policy-This was geared towards giving shoppers a better idea of the uses and storage of their personal information. This was aimed at an attempt to strengthen the customers’ trust in the company; feeding them with information (transparency). In the revision, there

was the inclusion of the company’s promise to not trade customers’ personal information with other companies without the customers’ approval (Nash, 2000). This measure was not one of security, since it obviously didn’t serve to better secure the customers’ information; neither did it serve to safeguard the company form further cyber-attacks, since after this measure was executed, Amazon.com and its subsidiaries would have been attacked again.

2. Eliminating complexities-Server-side encryption was an option over the years. As such, users may or may not have activated their encryption when using this service. This has since been revised and the complexity of having to enable the encryption was removed (Sharma, 2023). This best practice security effect would have served to automatically encrypt all cloud data. Further, the automatic encryption has not effect on the performance of the system. This measure would have been directed to and effective for the privacy and security of the cloud data for Amazon.com. This is evidently supported by the fact that so far, for 2023, there were no reported security breaches at Amazon.com. Though this may not necessarily be related to the upgraded security and privacy measures; it also doesn’t mean that this measure did not contribute to the secured state of the company’s data.

**Question 8-How Business Process Reengineering Helped Amazon.com to Overcome their Failures**

Business Process Reengineering, or Business Process redesign is a business improvement strategy aimed at optimizing business processes in a systematic disciplined approach, in order to reduce organizational costs and redundant business practices involving human or automated workflows (Intergiry, 2023). BPR may be costly, time-consuming and can include laying of employees (Hayes, 2022).

From its establishment, Amazon.com would have had continuous efforts at optimizing their business processes and reducing their and their stakeholders’ organizational costs. These successful efforts range from the launching of the AWS to their most recent measure of largest employee retrenchment.

Under the direction of Andy Jessy, Amazon.com would have taken a number of measures, which were directed towards cost. These included shutting down the telehealth service, shuttering underperforming brick-and-mortar chains, cancelling or delaying some warehouse locations and closed all but one of its US call centres (just to name a few) (Palmer, 2022). Even under the tenure of Jeff Bezos, Amazon.com cutting out products which were not performing after their launch. These included, but are not limited to the infamous Amazon.com Fire Phone, the restaurant delivery service and the online wine store(Palmer, 2022).

In Amazon.com’s latest attempt to get costs under control after their course of rapid expansion during the period 2020 to 2022, Amazon.com retrenched 18,000 employees. This was as a result of the bloated operational cost and the unprecedented drop in consumer demands (Wolff, 2023).

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These cases of radical modifications and changes would have played a meaningful role in Amazon.com’s ability to reduce spending in areas which they knew could not have been sustained and some of them would have served to tactfully abandon failing products and services. BPR definitely helped Amazon.com to overcome their failures.

Question 9-Discuss the Role of Functional Information System in Amazon.com’s Business Model

Functional Information System (FIS) is based on the various business functions in an organization. These functional areas of the business/organization, require applications to perform all information processing relative to their function (INDIAFREENOTES, 2020). FIS facilitates the flow of information between all business functions inside the boundaries of the organization and manage the connections with outside stakeholders (Sukla, n. d.).

Amazon.com exploits IT in their decision-making process. They manipulate MIS to convert data into information that aids in the decision-making process (StudyCorgi, 2022). Amazon.com is heavily dependent on IT, and FIS plays a critical role in the decentralization of the decision-making processes in the company (Mutwiri, n.d.).

FIS promotes high levels of interoperability with any kind of internet-enabled device, for effective communication between buyers, sellers and the Amazon.com staff (Mutwiri, n.d.). Amazon.com’s FIS facilitates the flow of information throughout the entire company, in a smooth manner; allowing all functional areas to perform as they are meant to, in a decentralized manner. For example, the Transaction Processing System allows customers to make transactions securely and efficiently, while the intelligent recommendation system would use the information gathered through search queries of a customer, to make recommendations for similar items through data mining (Mutwiri, n.d.).

As a result of FIS, Amazon.com would have benefited in the following ways:

1) Enhanced Customer Care and services;
2) Limitless Inventory;
3) Operational Efficiencies.

Amazon.com continues to reap the benefits of a proper functioning FIS. Being an IT based business, the company would have made heavy investments in technology, which would have shown great returns on these investments, as highlighted above.

Question 10-Evaluate the Ethical and Social Issues in Information Systems of Amazon.com

Trust is one of the most important aspects of a successful business. Having to spend less time securing and protecting oneself, provides more time to focus on things which will lead to success in business (Inbay, 2022). In the e-commerce sector, businesses are able to engage in dubious practices in order to make money (Tejas, 2022). Acting ethically needs to be on the agenda for all businesses, because when a customer loses trust in a brand, they may never purchase or recommend its purchase again (Tejas, 2022). Within their code of ethics, Amazon.com strictly adheres to all laws, through a series of guidelines (Amazon, 2016). Within the said ethics statement, Amazon.com demands that all employees always act lawfully and ethically, in the best interest of Amazon.com (Amazon, 2016).

Although Amazon.com would have coined and made their policy on ethics known to their staff and customers; all other stakeholders, the company has been accused of numerous unethical practices.

Recently, Amazon.com (India) was reported to the India Police for selling painting of Lord Krishna with Radha on their web site (Ghosh, 2023). The painting, following the outrage, was removed from the site. Amazon.com was further accused of having rugs and toilet seats covered with pictures of Hindu Gods, up for sale on their US sites (Ghosh, 2023).

Further, the company has come under the spotlight for a number of other unethical actions, which include misuse of customers’ privacy, worker exploitation, tax avoidance market dominance and privacy concerns (Catalin, 2021).

Amazon.com is yet to address all of these instances of ethical violations and though they are not yet harming the business in terms of profits, continued public outcry may soon lead to boycotts from some factions in society.

2. Conclusion

With the advent of Internet and Information Technology, MIS makes provision for all employees to make informed decisions throughout the organization. Amazon.com an internet and technology-based company, was founded by Jeff Bezos in a small garage with a small amount of staff, steadily grew over the years until it is now the second global 500 and the second most admired company in the world. Their growth was heavily influenced by information through the likes of win box, customers' reviews, content and ads. The company, being an on-line based business, relies heavily on network (the features and components thereof) to function, which essentially connects the customers, stakeholders, sellers and company. Through frequent update of their technology, even with their few brick-and-mortar stores, Amazon.com would have gained and maintains a competitive advantage, over the likes of Alibaba and others. Internet has had and continues to have a profound influence on Amazon.com’s business. Especially since they use a comprehensive digital marketing model, which combines the likes of influencers and social media, which easily gives them global reach and cost efficiency.

Amazon.com uses AWS, not only as a service they provide (for business), but they are also paid users of the system. AWS, which offers many advantages to its users, including reliability and scalability, also has a few drawbacks-including an extra cost for intensive or immediate response. Even with this technology, Amazon.com was a victim of cyber-crimes, committed by persons, including a former
employee. The company has since taken measures to upgrade their security and privacy for their customers.

Amazon.com manages to decentralize their decision-making process through successful manipulation of FIS, further providing the company with benefits such as Enhanced Customer Care, Limitless Inventory and Operational Efficiencies. In reengineering their business process, Amazon.com would have taken a number of measures which were directed towards the lowering of their cost. These included the shutting down of some of their services and a few brick-and-mortar chains; with their most unethical measure, being the retraining of at least 18, 000 employees. Their unethical measures did not, however stop at the retraining. Amazon.com would have offended the a large religious sector of society, with their insensitive move to paint and place pictures of some Hindu deities on their products, which was not received well. Nevertheless, though some of Amazon.com’s actions may lead to boycotting from some segments in society, Amazon.com continues to grow in size and diversity.

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