

Knowledge and Information Management Skills

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Introduction

In this report, the concepts of knowledge management will be analysed to see the importance it has within an organisation and understanding the fundamentals that helps them develop their skills. An example of how decision making within businesses may suffer from factors such as basic human errors will be provided. An in depth look at five decisions that were made and the information that were generated from each step. The different types of knowledge card games may provide, which may either be tacit or explicit and differentiate the two apart while using examples. Five components of Computer-based Information Systems (CBIS) will be explored to identify which organisations use and what they are. The organisation structure will be examined to recognize how this benefits the different levels of management. Part 2 of this assignment will be covering American Airlines with a provided case study on SABRE.

1. Give an example of how decision making in business suffers from limited time, data and information?

What is Decision-Making?

Decision-Making is a process used when making rational decisions which can either be in an organisation or in day to day life. In businesses, it is the primary function which allows people to make an impactful decision which may be detrimental to the organisation (MSG, 2019). Decision-making involves 7 steps:

- 1. Identifying the decision** – In order to make decisions, one would have to carefully examine the situation before a decision is made.
- 2. The relevant information must be gathered** – After getting a better understanding of the situation, one must then gather the relevant information, which can be from Internal and External sources. Internal involves self-examination whereas external includes seeking information from other means, such as the internet or libraries.
- 3. Looking at the alternatives** – With relevant information gathered, one must look at the other alternatives as there will be more than one cause of action. In this step, it is best to use the imagination and ask others for guidance as this can help generate different viewpoints (UMass Dartmouth, 2018).
- 4. Weighing the evidence** – In this step, it is best to visualize all the scenarios as this will provide a clear route, showing if the chosen path is viable or not. If it is not, one would need to evaluate what went wrong and change accordingly. As this step tends to be quite difficult, people tend to include in emotions to make their decision “easier”. However, this can also deviate someone from making the most ethical decision (Morin, 2016).

5. Identifying the alternatives – After thoroughly evaluating the evidence, it is time to choose the most viable alternative. This may include a combination of all, depending on the situation. Sometimes there may not be a solution, so it is advised to take points from all viable options to create a more suitable decision.

6. Taking action – This is about implementing the course of action that was chosen in the previous step.

7. Reviewing the decision and what consequences arise from it – This final step consists of simply reviewing the decision that was made. Did implementing the chosen solution solve the problem and what were the consequences? If the solution didn't help, then it's best to go back to step 2 to gather more evidence.

In businesses, the decision-making process can be difficult to apply as the company offers very limited time. For example, retail companies like ASDA. When an issue arises on the shop floor, staff must act immediately to minimise disruptions. This is because of several factors such as being time consuming, decisions being bias or not enough evidence for accurate analysis. It can also be extremely costly for the organisation, because employees might be delegated to different tasks but won't be able to concentrate on it due to issues arising. Other factors may come into play, such as inequality. If a team was given responsibility, it's possible that there will be a few people who try to assert their dominance and take control, demoralising other staff members (Commerce Mates, 2018).

2. Consider five decisions you have made today (they could be simple such as taking a turn while driving or even choosing a soda at a convenience store). In each case determine the data, information, or knowledge that were involved in the decision.

1. Installing a graphics card on the computer

Data: Screws, Computer, Cables, Outer casing

Information: Opening the computer to install a graphics card

Knowledge: When it comes to installing a graphics card, several procedures were taken beforehand. I made sure all the cables were disconnected and left the device to cool down.

I began unscrewing the screws in each corner of the tower, carefully placing the screws somewhere safe as they will be required when connecting everything back together. This enabled me to take off the main casing, showing the internals of the computer ranging from the CPU fan, heat sinks and the graphics chip. The current graphics system currently installed is integrated with the motherboard

As it is integrated graphics, the performance is terrible and video rendering could not go above 720p quality. I opened the box which contained the NVIDIA GTX 1060 graphic card and slowly connected it to the port on the inside of the tower. When finally booting up the PC, HP detected the new graphics card and instructed me to install the necessary drivers before I was able to use the card to its full capabilities.

2. Using the printer to scan documents

Data: Printer, scanner, computer, documents

Information: To scan a document, I need to put documents in the printer

Knowledge: Before the printer can be used, it would have to be connected to the computer either through a Wi-Fi connection or from cables.

Whenever I use the scanner, I must make sure the surface is nice and clean. The process begins with me scanning my provisional and passport using the printer's built in scanner. I lift the lid upwards to open the compartment where the documents would be scanned and place them down. I then had to close the lid, making sure documents are flat and could be clearly visible on the lens before I start the process of scanning. After the button is pressed, I get a notification on the computer stating that the scanning has begun, which at this point means waiting for it to be completed.

After the scanning is complete, the image appears on the computer, giving me the option to edit it or save it. As the documents must be unaltered, I cannot make any changes to it and decide to save the file exactly as it is. I now have the option to send digital files for online verification.

3. Setting up the Wi-Fi router for home use

Data: Router, Computer, Laptop, Lan Cables

Information: Connecting the router to the internet and enabling Wi-Fi for all devices

Knowledge: I began removing the packaging and pulled out the router, placing it near the installed connection point which had the businesses logo imprinted on it. 4 pieces of cables were given, the power cable, 2 LAN cables and one DOCSIS cable, which was different from the rest as it contained a screw-pin like the ones the Sky satellite uses. I connected all necessary cables and then switched it on. The router lit up with a green colour and then immediately began to flash. I waited for 10 minutes and then saw the lights turn blue, indicating that it has connected to the ISP.

However, even though I had access to the internet on my PC, I didn't have access to it on my smartphone or any wireless devices. This was because the PC was using one of the LAN cables, which meant a direct connection to the router without any setup being necessary. As I have had prior experiences in this matter, I knew how to enable the Wi-Fi. I opened google chrome from my desktop and entered the router's address on the URL bar. This then directed me to the admin page, and I had access to other functions, after locating the Wi-Fi section, I enabled it which made the router restart. After waiting for another 10 minutes, the Wi-Fi was working on all devices now.

4. Making a mug of latte

Data: Milk, Mug, Kettle, Teaspoon, Coffee beans

Information: 2g coffee beans into the mug, add water and stir clockwise

Knowledge: Every day when making coffee, I ensure I have enough water in the kettle, usually being 3 mugs worth. As the water is being boiled, I wash out a mug and teaspoon, patiently waiting. After the water has boiled, I use the teaspoon to get 2g worth of coffee beans from the jar as I do not like coffee tasting weak or too strong and then place it into the mug. I grab the kettle and pour in 200ml of boiling water into the mug, stirring it in a clockwise motion for 20 seconds before adding a little bit of milk. After adding milk, I stir it again for 20 seconds and wait a couple of minutes before I can drink it otherwise, I burn my tongue. Although I follow this step whenever I make coffee, not every cup tastes the same unfortunately. I choose to make coffee this way as I've been seeing family members do it this way for years and it ingrained into my memory, to the point where it feels strange making it in different ways.

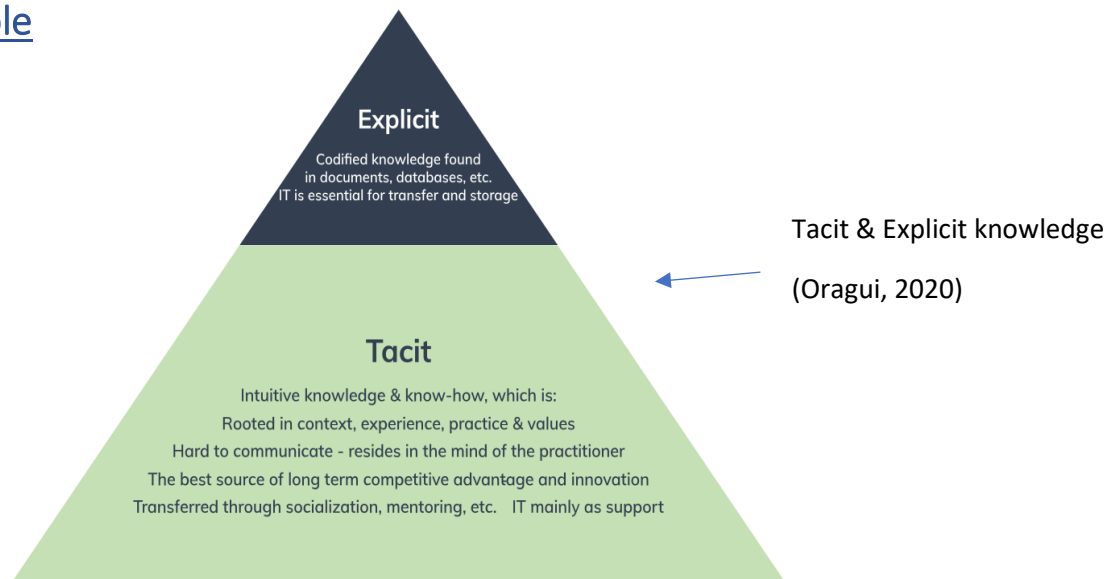
5. Going to the shops to buy milk

Data: 15 minutes, Morrisons, Milk, £1.70, Receipt

Information: Going to the local shops which is 15 minutes away to buy 2 pints of semi-skimmed milk costing £1.70

Knowledge: As Morrisons is a 15-minute walk from my house, this is the place I go to get my shopping. When I finally make it inside the shop, I walk around the shop, picking up 2 pints of semi-skimmed milk which costs £1.70. However, when I make it to the tills, there were so many people queuing, I stood for a minute until I decided to use the self-checkouts. I made my purchases with my debit card and was given the receipt for the purchase, I then began walking to the exit taking the same route home.

3. Does a player in a card game use tacit or explicit knowledge?
Explain why. Define and explain the difference between the two with
an example



In a card game, players would use Tacit knowledge as card games require experiences from the player. An example would be Poker, as anyone can play it, but they might not always win. The reason behind this is the game involves being skilful and the opponents can't see what cards the player is holding, leaving the opponents to guess. However, as it involves being innovative, players can use this to their advantage. In a game like Poker, it's all about facial language. Sometimes other players would look at their challenger's face to see if what they say is true, being confident may throw them off and make them intimidated to fold. Although Poker is about player skill, the result will not always be the same even if the applied tactic remains the consistent (Swartz, 2012).

The difference between Tacit and Explicit knowledge is that Explicit is easier to identify whereas Tacit is more personal knowledge. For example, this can be from prior experiences and beliefs. Explicit knowledge is much simpler to explain, although it may lack context without proper interpretation. It can consist of theoretical knowledge, documentations, search engines such as Google or simply the intranet (Magd, 2014). An example would be if a manager of 10 years decided to leave a retail organisation. Although there will be another person taking the role, they may not have the same skillset and experiences the previous manager had (Collins, 2010)

4. Explain the categories of computer-based information systems, providing relevant business examples for each category identified

Computer Based Information System (CBIS)

CBIS is using computer-based technology to complete tasks and is made up of 5 components. Hardware, Software, Databases, Networks and Procedures (Information Systems, 2018).

Hardware – Devices such as computers, monitor and keyboards which all portray data and information. Companies such as HP specialise in hardware as they manufacture computers and laptops. This can range from processors, graphics card, RAM, hard drives and USB devices. Although the processors are made by Intel and AMD, the partnership with HP allows the company to expand its business by having the latest technology on their products (Bose, 2008).

Software – These are programs which use the devices hardware to process information. Microsoft and Apple specialise in software as they have created widely used platforms such as Windows and iOS. Unlike hardware, a few benefits of software are that the company may offer more support and updates regularly. For example, Windows 10 gets frequent updates simply by having connection to the internet (MSc- IT Study, 2011).

Databases – The collection of data: Files, tables containing information data. Organisations such as Netflix keep track of users information and viewing data, this allows them to recommend other TV shows and movies that the user may enjoy. Another example is YouTube. YouTube uses cookies which are stored on web browsers and on smartphones. Like Netflix, this allows YouTube to gain an insight on what people enjoying watching and their algorithm may recommend related videos.

Networks – Systems that allow distribution through connected computers. Companies like Microsoft utilise networks to share information through cloud storage. One Drive allows users to upload documents and other media files that is accessible on other devices and ISP's. Although it is widely used, issues may arise such as long waiting times, servers being offline or data loss (REACT COMPUTER PARTNERSHIP, 2017)

Procedures – Procedures combines all 5 components to process information and generates an output. Every company incorporates this in their business as it is made up of sequences which ultimately helps employers get tasks done quicker. It is stated that uncomplicated procedures allow various operations to be run at once as there will be no obstacles (Blogin, 2016).

5. Explain why organisations have a structure composed of different levels and specialities. How computer-based information systems can support managers at each level of an organisation.

Organisations have different structures that consists of various levels and specialties because everyone has a different skillset. This is a system that indicates how the organisation is run, these will include rules and responsibilities. This system is put in place to translate where and how data flows between the various levels of a company. Such as the centralised structure. In this structure, information starts from the top and makes its way down the chain, however. Decentralized structure is when the decision-making influence is dispersed equally between the various levels within an organisation. This system outlines how certain activities are directed in order to achieve the goals of an organization. These activities can include rules, roles, and responsibilities. It's been stated that having an organisation structure put in place provides better effectiveness and keeps employees more attentive (KENTON, 2020)

Computer-based information systems supports managers at each level because with the advancement in technology, managers can use these tools with its ease of use and accessibility. Allowing for thorough decision making and the storage of data. With the rapid growth of computers, managers now have direct access to the decision support systems

Case Study – American Airlines

American Airlines and IBM jointly announced their plans to develop Semi-Automatic Business Research Environment (SABRE). The concept led to the 1st real-time business application. It allowed to replace the hand-written system of the 1950s with the Web-based inter-airline reservation system in the 2000s. SABRE was built to reduce the costs of making airline seat reservations. SABRE System saved 30% on its investments. It expanded to be used by travel agents and made reservations possible through online terminals. SABRE's demand increased because of adding functions of importance to travel agents (e.g. finding low fares). It also expanded reservation service to include hotels and rental cars. In 1988, the Company offered services for yield management and crew scheduling and a host of decision support tools.

1. Describe how the overall approach adopted by American Airlines incorporated Porter's basic competitive strategies of 'cost leadership' and 'product differentiation'.

Michael Porter created 4 business strategies that organisations may freely choose from. Michael believed that in-order to beat competition the organisation must focus on one (Kuijk, 2018). The four strategies to choose from are: Cost Leadership, Product differentiation, Cost Focus and Differentiation focus.

Cost Leadership – Cost leadership is simply targeting a broad market and enter offering the lowest prices. However, there are two ways of doing this. Businesses can decide to keep costs low without altering prices in the future or expand the market share with a middle ground pricing. Michael Porter identifies that regardless of the choice made, it is best to keep company expenses to a minimum. SABRE helped American Airlines to retire the paper system that the company had been using since the 1950's for a more modern web-based system. This allowed the company to reduce 30% in costs.

Product Differentiation – With this strategy, it's vital to make all services and products exclusive to the business while remaining unique. However, this requires good knowledge and understanding of the situation. As with any organisation, good marketing is fundamental as it advertises how unique the business is (Indeed, 2019). With the implementation of SABRE, American Airlines was able to stay unique with its affordable pricing and allowed the company to reduce time in making reservations. With the previous system, it would take roughly 90 minutes to make a seat reservation which is too long just for one person.

2. In what ways did SABRE provide American Airlines with a competitive advantage? Your analysis should refer to Porter's five forces, for example, 'entry barriers'.

Porter's five forces is a powerful tool that enables businesses to view new strategies and the profitability that may come from it. The tool was invented in 1979 by Michael Porter and is widely used due to the strategies it offers. It consists of five factors:

1. Competitive rivalry – This looks at the competitors' strengths and the products rival companies may be offering. In many cases, businesses tend to drastically cut or increase pricing to affect its rivals, this could make buyers and suppliers go somewhere else if they aren't happy with the price fluctuations (Mindtools, 2019).

2. Supplier Power – This is the number of suppliers a business may have. Having more suppliers gives more room for cheaper alternatives. However, having less suppliers gives them advantage as it means they will charge more money because the business would be limited in choice, thus affecting profitability.

3. Buyer Power – With more buyers a business has, the more power they have in terms of dictating prices and terms. For example, businesses may offer discount prices to customers who bulk buy as this is sustainable for the company and the customers will benefit from the cheaper prices. As American Airlines offered a more cheap and convenient reservations, this forced rivals to follow suit as to not lose business to American Airlines.

4. Threat of Substitution – This is customers finding cheaper substitutes either by processing things manually or having it outsourced, this can potentially cut into the businesses profit. American Airlines utilized the SABRE systems to remain unique and provided the company with the advantage of easy access when it came to booking tickets. Customers were able to book tickets at their convenience. This innovative idea was widely used and forced competitors to implement a similar idea to stay on levelled ground with American Airlines.

5. Entry Barriers – After evaluating the difficulty of entering the market, businesses would have to analyse the costs and the sector to ensure it is regulated. This includes having a good knowledge of the industry and how to compete with other companies without weakening their position. For example, American Airlines caused its competitors to reconsider its approach on pricing and how tickets were booked. If changes were not made, they would have surely lost majority of their business to the American Airlines. The system American Airlines used before SABRE was severely obsolete and became a burden as it would take too long and only could process a small number of tickets.

3. Although SABRE was undoubtedly successful, American Airlines was not able to maintain its competitive advantage beyond the late 1980s. What factors played a part in the erosion of the company's lead over its competitors?

Prior to the introduction of SABRE, it's stated that most agents had to make reservations in person or through phone calls. The handwritten cards had to be organized through a rotating shelf known as a 'lazy Susan' (Abdaal, 2018). Before flights were booked, the operator was required to locate the index card which then flight details would be handwritten, taking up to 90 minutes per reservation. As only 8 operators could be seated at a time, this created a difficult working environment as more reservations were made. In this problematic time, American Airlines began looking at alternatives, focusing on creating the computerised system known as the 'Magnetronic Reservisor' in 1952. Although this helped, everything remained strenuous, but this allowed the operators to relay information simultaneously in the short term. After a meeting between the American Airlines Group and an IBM salesman, the two companies partnered together to create the Semi-Automated Business Research Environment. With SABRE being integrated with American Airlines, making reservations went from 90 minutes to mere seconds and revolutionised the business (Sabre, 2020).

As time went on, rival airline companies began to have their own system in place. Thus, ending the advantages American Airlines had for numerous years. Sabre began to expand its market by offering some of their services to other aviation companies. This made American Airlines take notice and began viewing SABRE as a much larger asset than initially, however, in 2000, American Airlines and SABRE parted ways as the company decided to become independent, rebranding to Sabre Holdings.

4. How are information systems transforming business, and why are they so essential for running and managing a business today?

Information systems are a unified system that's capable of collecting information and storing data. It is stated that business rely on the uses of information systems as it allows them to relay important information to their customer base and their suppliers, while allowing them to compete within a market (Britannica, 2020). Information systems doesn't necessarily have to be computer based, but with the growth of modern-day technology, it's become the vastly popular method. Corporations use these systems to their advantage, such as for processing any financial information or by trying to target customers through social media platforms such as Instagram and Twitter.

Businesses today have expanded their market via ecommerce websites such as Amazon and eBay, as both platforms have a wide userbase. This helps businesses as users can browse through their online shop at their convenience without facing much issues. However, unlike eBay, Amazon is more business focused as they offer their company branded wares and services such as Amazon Prime, which is a membership service that provides next day delivery and unlimited video streaming content all in one price. eBay focuses more on peer to peer trading. With reliant information tools such as the SWOT analysis, this has helped with the decision-making process. SWOT, short for Strengths, Weakness, Opportunities and Threats is a simple tool used to provide guidance in businesses (Terry Hill, 1997). These information systems are required today as these are the current trends. As stated by (Henderson, 2017), people tend to follow the popular trends as it has a certain influence on the way things are perceived. An example they use was "If other people do it, that means it's right". This is essential for businesses if they wish to stay relevant.

5. Identify three major new information system trends. Justify your answer with relevant pros and cons of each of the trends.

1. Cloud Storage – Forbes states that more than 83% workloads will be uploaded to the cloud by the end of 2020. As cloud computing is simply made up of network resources, it is made easily accessible to companies and as everything is digitalized, it's boosted the workplace ethos substantially (Columbus, 2018). The reason for this is because files can be retrieved or stored on virtual drives instead of physical ones and as its network orientated, businesses may have entry in more than one location. An example of cloud storage is the One Drive created by Microsoft as this is commonly used by businesses and organisation institutes like UWTSD.

Pros – Everything is digitalised, so files may be accessible in more than one location. Cloud storage is continuing to advance, which means more storage space can be provided. The upkeep is low in price. Variety on the space that is needed. All Cloud Storage platforms allows the user to choose how much space they require. As data is sent to the internet, everything is password protected and encrypted.

Cons – Network delays and data loss can occur. No access to the cloud if there isn't any internet connection or if there is an ongoing maintenance. Difficult to move data from one cloud storage company to the next. Time consuming when uploading large files. Although upkeep price is low, consumers may have to pay more money for a faster and reliable internet connection to get the best out of cloud storage. Suppliers may try to make businesses join long contracts, which may mean paying extra for storage space that's not being used (Secure Storage Services, 2019). Older generation may not be familiar with these services.

2. Artificial Intelligence – Artificial Intelligence, AI for short, is a machine that's capable of predicting patterns made by humans. According to (West, 2018) Artificial Intelligence was created to make decisions based on real-time and are more than capable of responding without predetermined responses. Using various different sources, they combine inputs and digital information to generate actions based on the provided data. As they were created by humans, West goes on to say that they draw conclusions based on immediate analysis. With the growth of AI, businesses have incorporated camera systems that have built in face recognition to aid Police matters, such as reports of people going missing. This would also assist in finding certain people regarding criminal investigations or robbery. Businesses such as Microsoft have incorporated their AI system known as "Cortana" in to the Windows 10 operating system (Microsoft, 2016) as it provides their userbase with managing the calendar, creating or joining a Microsoft Teams meeting and simply setting reminders all with their voice.

Pros – Easy to access and doesn't take up too much of the user's time. No setup is required and having an internet connection is not essential. With modern devices, Microphones are no longer needed as there is one built in to portable devices.

Cons – A microphone is needed for Desktop computers. Cortana might have trouble understanding different accents. Even with face recognition, sometimes it may not clearly show people on camera. Artificial Intelligence can be expensive to implement and may put off some businesses

3. Virtual Reality – As virtual Reality continues to grow; more businesses are starting to implement this as it provides a computer simulated environment of scenarios without having to enter them. The medical industry utilizes this predominantly as it aids with treatments and communications between patients. Virtual training sessions helps to reduce costs and keeps the companies up to date while expanding their knowledge (Bardi, 2019).

Pros – Immersive environment, realistic and accurate. The world of simulation benefits from this, such as Video games and board meetings. Video conferences using Microsoft Teams. The ability to contact people from all over the world.

Cons – Can be expensive if trying to accommodate every person and can cause motion sickness to some people. Having low bandwidth can be problematic when trying to use applications such as Microsoft Teams. Oculus Rift and PlayStation VR may be expensive for Gamers.

Conclusion

This assignment looked at the 7 stages of Decision-Making while explaining how businesses may suffer from the limited time and information that they have. Five decisions that were analysed are the installation of a graphics card, scanning documents using the built-in scanner on the printer, ensuring all home devices were connected to the Wi-Fi, making a mug of latte and going to Morrisons to buy semi-skimmed milk. After an in-depth research, it was evident that players in card games such as Poker used Tacit knowledge as the players utilize personal experiences and tactics against their opponents rather than the information on the cards itself. The five CBIS that were identified are: Hardware, Software, Databases, Networks and Procedures. Organisation structures were studied to see how it aided the different levels of management inside businesses which is due to its ease of access of digital data. Part 2 focused on the case study of American Airlines and how SABRE helped revolutionize the aviation industry in the 1950's.

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