IMPACT OF DATA PROCESSING TECHNIQUES AND MANAGEMENT INFORMATION SYSTEM ON STRATEGIC DECISION-MAKING: CASE REPORT OF ARK HANDLING LIMITED

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Abstract

This study examined the data and information management as supported and related to strategic decision making in Ark Handling Limited. A survey research design was used in this study, to investigate the influence of data process techniques and management information systems practiced on strategic decision-making in ARK-H Limited. Data was gathered from a representative sample of management staff, particularly those that formed the decision maker of the company and those that implement every decision made. The survey instruments used were structured questionnaire and interview. Data generated were analysed using frequency, percentage, charts and content analysis. Finding from the study deduced that information network system and computer software were adequately available for staff to use in Ark-H. Most of the staffs that have very easy access to information management tools in Ark-H Limited are from IT department. Finding also revealed that, the staff found the use of information management very easy and significant to their strategic decision-making. Therefore, the study recommended that strategic decision-making can only be effective through consistent training and re-training of the staff and evaluation of management performance. Finally, various staff that needs to be trained are the managers.

Keywords: Data processing techniques, Information technology, Management information system, Strategic decision-making

Introduction

In recent time, management efforts towards accomplishing set goals rely extensively on strategic management of information, and the most important factor that makes decision making process possible in every organisation is availability of appropriate data and information. Information management is a vital resource for business growth and survival. A lot of business organisations spend huge funds every year on the acquisition, plan, expansion, implementation and management of information systems. The current need of many organisations for secure, safe and reliable management of information system is keen by the rising reliance on information technology to develop products and offer services, run activities on daily basis, and to perform both short-term and long-term management functions.
Ark Handling Limited as a case of this report is a well-known company in United Kingdom that provide handling and fulfillment services for national and multinational clients. This company was incorporated in 1990 and provides a wide range of handling and fulfillment services which range from Storage, distribution, order processing, order fulfillment, integrated system, literature fulfillment, B2B, merchandise. Also, the company offers E-commerce service, POS and Kitting, direct mailing and contract packaging. Ark-H Limited just like their business counterpart in UK operates in an environment where data and information is well-supplied.

As it is widely recognized, information exists in an organisation to create awareness about services, products and resources; therefore, successful organisation must gather high quality data to get high quality of information (Oyelude and Bamigbola 2012, Al-Mamary, Shamsuddin and Aziati 2013). As a provider of handling services in UK, Ark-H sees information management as an extraordinary opportunity to offer top handling services that is tailored to their customer’s varying needs. Having right data and information system to make right decision is highly essential for every organisation in discharging their services in an effective and efficient way. This therefore makes Ark-H to considered information management as a vital component of their strategy, so as to support their handling activities and to facilitate efficient and effective service delivery. The growing interest and use of strategic information management therefore generated vital issues, such as delay in service delivery, frequent changing needs of customers and unproductive decision. Though, there is rising need for information for ARK-H to survive in handling business, but as this necessity grows on a daily basis the turns out used to be more difficult in nature. The inference of this is that the technique of processing data and managing information becomes inadequate as the management seeks better approach to enhance their decision. Could it be that the information management strategy implemented by this organisation could not assist them to develop perfect decision in ARK-H Limited? Or is it that when required data are processed and information are well managed that do not impact management decision-making in ARK-H Limited? These are the issues that this report presented and revealed the impact of management information on decision-making in Ark-H Limited.

Literature review

Globally, scholars have noticed that evaluation of information management is extremely difficult assignment as it engage a range of dimensions and stakeholders (Iranji 2002, Hallikainen and Chen 2005, Platisa and Balaban 2009). Many researchers have suggested different methods of management information system (MIS) accomplishment (DeLone and McLean 1992, Fitzgerald 1995, Venkatraman 1996, Robson 1997, Peffers and Saarinen 2002). In the study of DeLone and McLean (1995), the successfullness of information system can be assessed by examining Organizational performance. Fitzgerald (1995) also posted some decisive factors such as availability, acceptability, compatibility, cohesiveness, efficiency, learning simplicity, confidentiality, visibility, speed and safety when evaluating information system. On the other hand, Peffers and Saarinen (2002) grouped assessment measures into various groups such as : value added, earnings, Organizational achievement, growth and good operational system of firms performance. However, Robson, (1997) shows the means to assess or weigh information and management performance of a firm “is to reflect the importance it offers in terms of management decisions. Value of information should summaries suitable performances with respects to information management and makes its principles perfect”. One need to be more interested in assessment and evaluation of information management effectively because the analysis will enhance the rules and regulations of the Organizational system. Furthermore, the following diagram shows the features and importance of organization and their information usage.
Methodology

As an explanatory, this work shows the important aspect of information management on decision making, a survey research design was employed in this report. A survey research design is majorly used to ascertain relationship between two or more variables (Adegoke and Adedayo 2010, Bhattacherjee 2012, Onwe 2010). This design is considered to investigate the influence of data process techniques and management information systems practiced on decision-making in ARK-H Limited. In the course of realizing the above objectives, both primary and secondary sources were employed in data collection. In primary source, information was gathered from a representative sample of ARK-H management staff, that is, those that formed the decision maker of the company and those that implement every decision made. This was achieved through the use of structured interview. This procedure is considered suitable because of its flexibility in data collection. The interview was carried out among the management staff of ARK-H Limited after the working hour. Purposely, closed and open questions on quality of data processing approach and management information systems, how and to what extent has the staff pleased with the information sharing in the company, and how has information used alerted and supported management in strategic decision-making. Furthermore, question on manner at which management assessed management information within the company was also asked. Conversely, secondary data was also used to extract relevant information from various publications like articles, journals and textbooks. Finally, data collected were analysed through content analysis. This tool was used to interpret the response of the staff.

Findings and discussions

This section discussed the major findings obtained from the management staff of ARK-H Limited in UK. Therefore, analyses of information extracted are discussed as follows:
Features of Data and Information in ARK-H Limited

In ARK-H Limited, information is majorly extracted within and outside the company. As revealed by the Operation Manager, ‘management data’ include cost of production and numbers of consumers, while ‘data other things which shows further provision that related with cost of organizations profile and reports. Furthermore, the anticipated cost subsequently utilized in order to estimate amount of sales.

Price in Ark-H

As broadly define, price refers to the amount for which services or products are offered or exchanged regardless of its value to potential customers (Kotler and Keller 2009; Owusu 2013). In Ark-H Limited, price of services is basically considered as management data to influence clients’ patronage and to reach prospective clients. It is a major data used within the company to structure pricing challenges. Just as generally belief that price must reflect a value. Therefore, data on price of service in Ark-H aids management to set appropriate discount and develop pricing strategy.

Sales Figure in Ark-H

The need to know the success is a major concern of every marketing manager in an organisation. In Ark-H Limited, one of the key components of the role of marketing manager which is regularly treated is the data collection on services sales. The sale figure represents the sum or value of total sales that the Ark-H derives from its range of services for a particular period. Therefore, the feature of sales figures in Ark-H is to track and record marketing process, to structure sales function for maximum contact with clients and to set objectives for sales force.

Sales Reports in Ark-H

According to Akers (2014) sale reports give management idea about the trends that take place in sales volume of a company over period of time. In Ark-H, the feature of sales report is to determine whether the company sales are declining or increasing. Information relating to sales report enables marketing managers in the company to recognize market opportunities and areas of services where the company could incorporate sales strategies.

Data and Information Selection Criteria to Support Decision Making

Data is an important asset for every organization in business competitive environment (Okeke 2009). Data should be carefully gathered because every decision making processes in organizations are always based on information derived from the data. There are a lot of decisive factors that management considered while compiling sources of information to be use for the organization. Many of these qualities as applicable to Ark-H Limited are presented in figure 1 below:
The illustration on the above figure demonstrates some selection criteria adopted in Ark-H when during data and information selection. As exemplified, four distinct criteria ranging from data accuracy, reliability, validity and completeness and six criteria are used in Ark-H in selecting information; these are based on availability of data, quality, clearness, relevance, completeness and correctness of data. These criteria are considered very important and played significant role for decision-maker in Ark-H. This is supported with the Kennerley and Mason (2008) state that collection and manipulation of data and information are employed to improve decision making and eventually improve organization performance.

**Effect of Information Management on organization policy**

Generally speaking, information management (IM) is an integrated part of organization which used to support management in making decision in a firm (Hashim et al 2012, Oladejo 2013). Fundamentally, MIS concerned with the collection, process and storing of important information to support management decision. In decision-making process, information role cannot be over emphasized because it assists an organisation to easily achieve the strategic goals and assists in decision support. According to Laudon and Laudon (1991), decision-making is a method of deciding on what to do by means of considering the likely results or outcomes of different choices. Effective decision making requires timely, accurate, reliable, complete, relevant and clear information. Therefore, the utilization of MIS in Ark-H Limited not only support business process but assist the company to develop competitive strategies which in turn impact the company performance.

Hashim et al (2012) also support that no organisation can survive without MIS, therefore, adoption of MIS in ARK-H Limited plays the role of life blood, most especially in financial and sales records, and in monitoring and controlling various handling and fulfillment services provided by the company which in turn give sound beginning for strategic decision-making process and impact the company’s growth. With the help of MIS in ARK-H, businesses were run successfully. Furthermore, the response of the management staff of ARK-H disclosed that MIS not only used in processing, storing, recording or transferring data (i.e. data like sales figures, purchase, payroll, maintenance and operation records), but endows the management with necessary information for accurate planning, supervision and managing of handling business operations. The uses of information network systems and computer software applications (e.g Ms.Access and Excell) assisted management in removing outdated level of management tasks and limiting work flows. The staff responded that MIS has been employed to support handling services as well allowed more various staff activities in the company. The finding revealed that, MIS has exerted a reflective influence over management decision making process. As revealed by the top management staff, MIS has accelerated the rapidity of daily operations and
transformed the nature of service delivery and influence the nature of budget forecasting, salary analyses, inventory and sales reporting.

**Legal Responsibility in Sourcing, Sharing and Storing Information**

There are a lot of legal issues to be considered by management when sourcing, sharing and storing information. These are: Privacy and Confidentiality, Contractual Obligation of Staff, Criminal Law, and Copyright and Software Protection Act (Rochelaeau 2006, Akers 2014). The use of information is paramount to both firm and workers in the organization, therefore when searching for data to be used for a firm, these aforementioned legal responsibilities need to be considered. In sourcing, sharing and storing information, the privacy and confidentiality of information must completely conform to the Information Act. For example, data concerning staff, organization should not be released without the awareness of employees consent. This is supported by Eynade (2014), who states that privacy and confidentiality carry the status and implication for revealing such personal information or revealed of data with the owners concept. In case of contractual obligation, sourcing, sharing and storing of information must not violate the terms and conditions of employment contract. Furthermore, sourcing, sharing and storing of information must not violate the rules and regulations of the organizations and such information must not be used for fraud. Finally, whichever information and computer software used must conform with the copyright and software protection Act. This implies that licensed or approval should be taken before using someone work.

In Ark-H Handling, the motivated staff members have always come up with good idea for development of the organisation and improvement of its activities. The new development and strategy decision made for the organization must be kept intact. Any information usable or utilized should be coded and not to be revealed or disclosed to competitors. The organization data and information that lead to workers improvement must be revealed while right be protected such information should not be given to other firm without the consent of the company. In Ark-H, it is the general rules and obligation for both managers and administrators to ensure that all information are confidently protected. Storage facilities could also be provided while staff record must be adequately be kept within the organization. The employees should maintain status quo and keep to the company policy while carrying out their obligation.

**Fundamental Right to Information in Ark-H Limited**

The Data Protection Decree 1998 and The Freedom of Information Decree provision empower people’s right to have accessibility to their information. The organization must provide all incentives to motivate employee’s performance. Such provisions must be in accordance with other organizations or public welfares. The organization should have opportunity to access the regional and government information. In UK, information represent the oxygen of social equality, and right to information has been generally seen as essential in the life of human being and touchstone of all the freedoms adopted by the management of ARK-H Limited. Thus, all data which was owned by the companies are provided and use by people. Examples of those authorized by law are UK border agents (e.g. immigrations officers), security agents (i.e. Police), medical personnel (e.g. Doctors, Nurses e.t.c) and health and safety officials.

Furthermore, sometimes sharing of staff information can take place without their consent if such information is needed by the police. Though, the purpose of information release can be made known and kept by the organization and used by the concerned people. On the other hand, sharing of information relating to staff member’s health is regarded secret, at this juncture, these people involves must be aware while their consent are always considered. In other words, every staff member has the right to receive information without interference or discrimination. This is a fundamental right that guaranteed every individual staff in the company. Having right access to information has tremendously plays a key role in establishing an effective working system.

**Formats in which Information is Offered in Ark-H Limited**

Specifically, the system and method of sending and keeping data include various ways and should be easily be known for peoples consumption As presented in the Figure 2, information can be offered in two ways, these are: Electronic format, and Manual format.
In Ark H, information is offered through, electronic and manual format. But, one of the method employed to be utilized for business transaction include electronic method of keeping and using data involve new technology. This includes usage of modern packaging of software that can share data to staff without delay. This enables the staff to share data to share reliable information quickly and this enhances good communication system. Thus, the organization continue to improved and make quick services to their clients.

**Patterns and Trends of Information Use in ARK-H**

In order to analyse the pattern and trends of information management in ARK-H, three components of information use were analysed. This is based on availability and accessibility of information network system and computer software. In addition, this section also presents the perceived easy of information management use and perceived usefulness of information management in strategic decision-making. The analyses are presented in chart and discussed as follow. The illustration on the above Figure 4.3 revealed the availability of information network system and computer software in ARK-H Limited. The result revealed that both information network system and computer software are always available as 66.3% and 66.9% of the majority of the staff sample in the company consent to the assertion. As supported by Moga (2014), who affirmed that internet system has opened up in information system with the use of social media. He concluded that the use of modern equipment would enable and increase or speed up the technique or accessibility of information by the end user.
Fig. 4.3: Bar-chart showing Availability of Information Network System and Computer Software in ARK-H Limited

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Fig. 4.4: Bar-chart showing Accessibility of Information Network System and Computer Software by the Staff in Ark-H Limited

The above Figure 4.4 demonstrated that the most staff of ARK-H Limited occasionally has access to both information network system and computer software. It is apparent from the result that those that have very easy access to this information management tools were those in IT department.
Fig. 4.5: Perceived Easy of Information Management Use in Strategic Decision-Making

In figure 4.5, the diagrammatical illustration revealed that information management found the use of information management easy during strategic decision-making. This was ranked as 89.2% agreed to the perceived easy of information management use in strategic decision making. These findings corroborated with the study of Oladejo (2013) who also revealed that the important of information enable good decision making in the organization.

Fig. 4.6: Perceived Usefulness of Information Management in Strategic Decision-Making

The result in Figure 4.6 showed the usefulness of information management in strategic decision-making in ARK-H Limited. The result revealed that most the staff saw the use of information management significant to their strategic decision-making, and this was supported as 83.1% of the majorities perceived that information management was useful during strategic decision-making of their company.

Decision-Making Techniques Available to Support Strategic Decision-Making in ARK-H

A good company must utilized information to make adequate planning and strategic decision for the operations of its activities. The top managers employed different tools/methods to get effective, timely and adequate information in other to use and offset risks that engrave their business decisions. The organization also use various methods to collect data and daily activities of various branches to facilitate quick planning for product activities and timely delivery (Akers, 2014). Therefore, the following methods can be used for making adequate decision:
In today’s business, organisation needs an information strategy system to manage information and to ensure that all information needed for their strategic decision-making is available to them. To successfully and effectively carry out benefit in the organisation, management needs a series of supportive decision making tools and techniques to help in managing risk and making strategic decision. Various types of techniques and tools are used in the organisation to enable them have rapid access to enormous statistics and data connected to the regions of apprehension as it provide a knowledge to take intellectual strategic decision (Akers 2014). Therefore the following decision-making tools and techniques are available for strategic decision-making:

- **SWOT Analysis**: This analysis is a crucial exercise as it helps to examine the strengths, weaknesses, opportunities and threats of any business (Kotler 1994). In Ark-H, this tool helps in analysing current business strength (such as wide range services), aids decision-making in reducing the weakness of the company, helps to spot areas of opportunity to compete successfully against other companies and helps to identify future threats. This analysis assists to systematize strategic goals and tactics to develop a plan that will have more impact on decision-making process.

- **Decision Support System (DSS)**: This system is employed in Ark-H Limited to interact with the stakeholders of the company (e.g. staff, clients, shareholders, suppliers etc.). According to Akers (2014) DSS can be deploy in different ways examples are through the web, client/server systems, software or hardware, mainframe system.

**Sources Available to assist in Analyzing Data and Information**

In ARK-H Limited, two available sources have been identified to assist in analysing data and information and these sources lend a support hand in decision making. These are presented in Figure below:

![Fig 4.7: The availability of information to data analyses](Source: Self-Developed by Authors (2014))
Methods of Developing Information in Strategic Decision-Making

The organization continue to make good decision for each units, for instance, the higher Executives usually make unchangeable decision concerning liability and liquidity ratio. Such decision includes development of departmental goal, development of operation of each units and how to carry out their responsibility. They also see to the means or ways of meeting the needs of their customers. The workers also improved and developed the strategic business sales and ways to satisfy the company clients.

Stages of Decision-Making

Source: Bowett (2012)

Decision making in any form involve information collected from different units of the organization. Information used to be communicated from senior management level to the lower or operation managers. The medium of communication also flow with the aid of meetings and the use of social media. It could also be done through media or memo or via telephone to facilitate quick decision making for the organization. The middle managers usually responsible and also inform the workers under them about the information or decision made by the top management. They also communicate the workers response back to the management. Information gotten from the shareholders helps the organization to make adequate planing and strategic decision for its future operation.

Processes for Analysing Impact of Information on Strategic Decisions in ARK-H

The organization employed oral and formal system of formal system of communication to inform their customer and also gotten information to be used for further planning and decision making. The top managers oversee the activities of the organization. They give adequate report of records keeping and data collected for proper planning and good decision for the firms and employees. They inquired and made prompt delivery to their customers. Information is used to facilitate to improve and development of the firm. The workers usually show their view to superior officers. They use comparative intelligence to collect data to overcome their rival in competitive environment for survival of the business.

Conclusion

The achievement of strategic decision-making by management staff in ARK-H Limited relied extensively on adequate use of data collected for managing the organization. The conclusion and findings of this work include the followings:

- The information network system and computer software are adequately available for staff to use in Ark-H.
- Most of the staffs that have very easy access to information management tools in Ark-H Limited are from IT department.
- The staff found the use of information management very easy during strategic decision-making.
- Most the Ark-H staff saw the use of information management significant to their strategic decision-making.

In conclusion, information management is effectively managed in ARK-H and this has offered management accurate, absolute and sensible information during strategic decision-making.
Recommendations

Based on the above findings, this report therefore offers the following recommendations.

- Information management should take account of feedback methods so that any decision made can be shared and improved by staff inputs.
- Management should ensure equal access and use of information management tools.
- Staff should be trained how to use management information system data and information, as this will assist them to make their decision more efficient.
- Finally, every data must be shared, reported and used purposively for problem-solving.

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