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Influence of Uncertainty and Risks on the Information System

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Abstract: The manager when making decisions in carrying out its functions exposed to the uncertainties and risks facing the company as a result of the decisions taken. The purpose of this study was to determine the influence of uncertainty and risks on the information system. This study is theoretical research that using secondary data. The results show that uncertainty and risks influence on the information system.

Key words: Uncertainty, risks, information, system, decisions

INTRODUCTION

Karwowski (2006) of particular importance to work system design is the fact that all specific task environments vary along two highly critical dimensions: change and complexity. Degree of change refers to the extent to which a given task environment is dynamic or remains stable over time. The degree of complexity refers to whether the components of an organization's specific task environment are few or many in number (i.e., does the company interact with few or many government agencies, customers, suppliers, competitors, etc.?). These two environmental dimensions of change and complexity in combination determine the environmental uncertainty of an organization. Boczko (2007) clearly, in a corporate context risk whether, it is social in origin, economic in nature and/or political in consequence cannot be eliminated. It cannot be relegated to the division of not-so-important irrelevancies nor can, it be regarded as an ephemeral and inconsequential by-product of the contemporary marketplace, a merely irritating inconvenience.

So, what about corporate accounting information systems? There can be little doubt that information systems/information technology associated corporate activities in particular corporate activities relating to and/or associated with corporate accounting information systems are neither impervious nor resistant to the potential ravages, the potential chaos and consequences risk (in all its possible manifestations) may manufacture. Uncertainty is taken to be anything that is not known about the outcome of a venture at the time the decision is made. In contrast, risk is taken to be measurement of a loss indentified as a possible outcome of the decision (Byrne, 1996). We have to distinguish between three types of uncertainty: randomness, fuzziness and incompleteness (Staveren, 2006).

Review of literature

Uncertainty: Uncertainty can be defined as an absence of information about parts of a system under consideration. Uncertainty of the risk event is two fold. First, the uncertainty about the occurrence of the risk which can be considered as the probability part (Staveren, 2006). Owusu *et al*. (2014) to characterise the operating environment, it is useful to consider two dimensions of uncertainty. The first is the level of unpredictability in the quantity of demand where what is delivered is known. Within the context of delivering a familiar product, there is a spectrum of demand uncertainty. On the one hand, in a stable market, the statistics of historical demand can be used to forecast future demand. The other end of this scale represents a less stable environment. The second dimension of uncertainty is in what it is that is delivered or how it is delivered. Environmental (market) changes may require the organisation to develop a new product or to transform the way a product is delivered. In this case, the range of uncertainty is in the level of ambiguity in the definition of the new product or delivery mechanism. On the one hand, we may be building to a well-understood requirement or we may need to discover and adapt as we progress.

Risk uncertainty: The risk may or may not happen that is there are no 100% probable risks (a risk that is 100% probable is a constraint on the software) (Pressman, 2001). Risk is composed not only of the probability that the strategy will be effective but also of the amount of assets the corporation must allocate to that strategy and the length of time the assets will be unavailable for other uses (Wheelen and Hunger, 2012). A risk is an unwanted event that has negative consequences (Shari and Atlee, 2010). Risk is an uncertainty that can have a negative or positive on meeting project objectives (Schwalbe, 2010). A risk is the possibility of an activity to cause loss or damage that

a risk represents a potential problem (Kappel *et al*., 2006). Klien in 2009 risk refers to situations in which the outcome of an event is unknown but the decision maker knows the range of possible outcomes and the probabilities of each such that anyone with the same information and beliefs would make the same prediction. Uncertainty, characterized situation in which the range of possible outcomes, one the relevant probabilities is unknown.

According to Rook in 1993 risks are: a loss associated with the event; the likelihood that the event will occur. The degree to which we can change the outcome. Three main and practical types of risk will be presented below, pure and speculative risk, foreseen and unforeseen risk and finally information and interpretation risk because these types facilitate (Staveren, 2006). We may consider a simple two-dimensional contingency model for this dynamic character of risk. Over time, risks are dependent on the ever changing circumstances, the factual and objective factors; the ever changing human perceptions the interpretative and subjective factors (Staveren, 2006). Risk is a measure of the probability and consequence of uncertain future events. It is the chance of an undesirable outcome (Yoe, 2011).

Risk analysis is a process for decision making under uncertaintythat consists of three tasks: risk management, risk assessment and risk communication (Yoe, 2011). Risks are (Boehm, 1991):

- Personnel shortfalls
- Unrealistic schedules and budgets
- Developing the wrong software functions
- Developing the wrong user interface
- Gold platting
- Continuing stream of requirements changes
- Shortfalls in externally performed tasks
- Shortfalls in externally furnished components
- Real-time performance shortfalls
- Straining computer science capabilities

Risk is defined as courage or danger and "to risk" as to dare to do something. Risk as a possibility that a certain event which differs from the expected situation or development will occur with a certain probability. Risk mitigation reducing the impact of a risk event by reducing the probability of its occurance. However, risk should not be confused with or reduced to, a mere probability since, it includes both the actual probability and the quantitative scope of the given event (impact) (Pearce, 1992; Jaeger *et al*., 2013). Risk is a situation or event in which something of human value (including humans themselves) has been put at stake and where the outcome is uncertain (Shari and Atlee, 2010). Steps in risk:

- Risk assessment
- Risk identification: checklist, decomposition, assumption analysis, decision driver analysis
- Risk analysis: system dynamics, performance models, cost models, network analysis, decision analysis, quality risk factor analysis
- Risk prioritization: risk exposure, compound risk reduction; risk control
- Risk reduction: buying information, risk avoidance, risk transfer, risk reduction leverage, development process
- Risk management planning: risk management planning, risk plan integration
- Risk resolution: risk mitigation, risk monitoring and reporting, risk reassessment

The risk components (Pressman, 2001):

- Performance risk: the degree of uncertainty that the product will meet its requirements and be fit for its intended use
- Cost risk: the degree of uncertainty that the project budget will be maintained
- Support risk: the degree of uncertainty that the resultant software will be easy to correct, adapt and enhance
- Schedule risk: the degree of uncertainty that the project schedule will be maintained and that the product will be delivered on time

The risk components (Kappel *et al*., 2006):

- Risk assessment: risk identification; risk analysis; risk prioritilization
- Risk control: risk provisioning; risk monitoring; risk mitigation

The four basic risk (Schwalbe, 2010):

- Risk avoidance: involves eliminating a specific threat or risk
- Risk acceptance: accepting the consequences of a risk should it occur
- Risk transference: shifting the consequence of a risk and responsibility for its management to a third party

MATERIALS AND METHODS

Accounting information system quality: Quality means the ability of a product (including services) to meet or exceed customer expectations (Stair and Reynolds, 2001). A quality information system is usually flexible, efficient,

accessible and timely (Romney and Steinbart, 2012). A system is a set of two or more interrelated components that interact to achieve a goal. Systems are almost always composed of smaller subsystems, each performing a specific function important to and supportive of the larger system of which it is a part. For example, the college of business is a system composed of various departments, each of which is a subsystem. Yet, the college itself is a subsystem of the university (O'Brien and Marakas, 2005). An information system depends on the resources of people (end users and IS specialists), hardware (machines and media), software (programs and procedures), data (data and knowledge bases) and networks (communications media and network support) (Gelinas *et al*., 2005). Accounting information system a specialized subsystem of the information system. The purpose of this separate AIS was to collect, process and report information related to the financial aspects of business events.

Bagranoff (2010) accounting information system as a set of components that collect accounting data, store it for future uses and process, it for end users. This abstract model of data inputs, storage, processing and outputs applies to almost all the traditional accounting cycles with which you are familiar, e.g., the payroll, revenue and expenditure cycles and is thus a usefulway of conceptualizing an AIS. An accounting information system is a set of interrelated activities, documents and technologies designed to collect data, process it and report information to a diverse group of internal and external decisions makers in organizations (Hurt, 2008). An accounting information system as an organizational component which accumulates, classifies, processes, analyzes and communicates relevant financial-oriented, decision making information to a company's external parties (such as current and potential investors, federal and state tax agencies and creditors) and internal parties (principally management) (Stephen *et al*., 1990). The accounting information system is actually one major component of a management information system.

Accounting information system, a subsystem of a Management Information System (MIS) that provides accounting and financial information as well as other information obtained in the routine processing of accounting transactions (Jones and Dasaratha, 2006). An information system can be defined technically as a set of interrelated components that collect (or retrieve), process, store and distribute information to support decision making and control in an organization (Laudon and Laudon, 1997). An effective information system provides users with accurate, timely and relevant information (Laudon and Laudon, 1998). Accurate information is free of errors. Information is timely, when it is available to decision makers when it is needed. Information is relevant when it is useful and appropriate for the types of work and decisions that require it. The second major category of variables concern system quality that includes indicators such as "ease of use, functionality, reliability, flexibility, data quality, portability, integration and importance (Rocheleau, 2005). Quality attributes are:

- Availability is a measure of the planned up time during which the system is actually available for use and fully operational
- Efficiency is a measure of how well the system utilizes processor capacity, disk space, memory or communication bandwith
- Flexibility also known as extensibility, augmentability, extendability and expandability, flexibility measures how easy it is to add new capabilities to the product
- Integrity which encompasses security
- Interoperability indicates how easily the system can exchange data or services with other systems
- Realiability the probability of the software executing without failure for a specific period of time is known as reliability
- Usability also referred to as ease of use and human engineering

The four dimensions of information systems successs (Garrity and Lawrence, 1998):

- Task support satisfaction: measures the fit between the job and the computer system. Items for this scale attempt to measure the functionality of the system in terms of how the system helps the inviduals to get a job done and fulfill task requirements
- Quality of work-life satisfaction: measures how a computer system affects an individual's quality of worklife and job satisfaction. Items for thus scale attempt to measure whether the system supports the social needs, intellectual needs and/or physiological requirements of the individual in the context of job related activities
- Interface satisfaction: measures the quality of the computer system interface. Evaluation focuses on the characteristics of the interface in terms of presentation, format and efficiency. Items for this construct attempt to determine whether the outputs are arranged logically, the presentation media is acceptable and/or the information is readily accessible

- Decision making satisfaction: measures how well a system supports decision and problem solving activities. Items for this contruct attempt to determine whether the system supports the invidual in recognizing problems, structuring problems and/or making decisions related to the goal of controlling some business process

Laudon and Laudon (1997, 1998) successfully using information systems to achieve a competitive advantage:

- High level of system use
- User satisfaction on system
- Favorable attitude
- Achieved objectives
- Financial payoff

AIS's success (Romney and Steinbart, 2012):

- Usefulness: information output should help management and users make decisions
- Economy: the benefits of the system should exceed the cost
- Realiability: the system should process data accurately and completely
- Availability: users should be able to access the system at their convenience
- Timelines: crucial information should be produced first and less important items as time permits
- Customer servie: courteus and efficient customer service should be provided
- Capacity: system capacity should handle periods of peak operation and future growth
- Ease of use: the system should be user-friendly
- Flexibility: the system should accommodate reasonable operating or system requirements changes
- Tractability: the system should be easily understood by users and designers and facilitate problem solving and future systems development
- Auditability: auditability should be built into the system from the beginning
- Security: only authorized users should be granted access or allowed to change system data

RESULTS AND DISCUSSION

The provisional estimate is bound up with a high degree of uncertainty (Dirk *et al*., 2010). When planning for the current operations, the IT controlling team can assist those responsible for IT in the business units in carrying out a realistic estimate of costs and performance by providing them with transparent cost and performance cataloguesn. James and Yeates (2008), particularly during the initial stages of an IS project, the analysis and design phases, the project manager is often flying blind. The degree of risk and uncertainty will vary from project to project but all projects will contain some risk and many are highly risky.

Gerti and coauthors in 2006, Heinemann (2008) four roles of accounting information in the decision-making process that depend on the uncertainty of cause and effect and the uncertainty of objectives. The results revealed that perceived environmental uncertainty is a determinant of supplier development which in turn is a determinant of the use of management accounting systems. This study has found that high environmental uncertainty indirectly leads to particularly high usefulness of MAS information through user participation. Typical risk items are the integration of existing components into the application, the prediction of system quality aspects. Kearns and Lederer in 1999 results indicate that a sudden change in environmental uncertainty may be a more important motivation to the use of Strategic Information Systems Planning (SISP) practices than the level of uncertainty itself.

Effective risk management starts by understanding threats and vulnerabilities (Gibson, 2015). Risk can be mitigated by reducing vulnerebilities or reducing the impact of the risk. A solid foundation in risk management as, it related to information system security.

The quality of information available to an individual about the relevant decisionmaking condition can vary widely as can the individual's estimates of risk (Hellriegel and Slocum, 2005). The type, amount and reliability of information influence the level of risk and whether the decision maker can use objective or subjective probability when estimating the result. Risk management as it relates to information system security (Gibson, 2011). When considering risk management scope within your organization, consider the following an information systems security gap. There is a need for risk assessment to incorporate technical, people, clinical and organizational aspects in order to reduce chances of IT project failure in the health context.

Particularly during the initial stages of an IS project, the analysis and design phases, the project manager is often flying blind (James and Yeates, 2008). The degree of risk and uncertainty will vary from project to project but all projects will contain some risk and many are highly

risky. Boczko (2007), clearly, in a corporate context, risk whether, it is social in origin, economic in nature and/or political in consequence cannot be eliminated. It cannot be relegated to the division of not-so-important irrelevancies nor can it be regarded as an ephemeral and inconsequential by-product of the contemporary marketplace, a merely irritating inconvenience. So what about corporate accounting information systems? There can be little doubt that information systems/information technology associated corporate activitiesin particular corporate activities relating to and/or associated with corporate accounting information systems are neither impervious nor resistant to the potential ravages the potential chaos and consequences risk (in all its possible manifestations) may manufacture.

Risks with implementation of information systems must be carefully controlled (Chaffey and Stave, 2005). Risk assessment is an integral part of system implementation planning. Risks are things that threaten the project's success and include the following: interfaces, computer literacy, technical, training, resources, security, privacy, buy-in (or lack thereof), administrative support, budgets, vendor health and communications. In practice for IT projects, however, a risk analysis is typically done after project planning and before the final costing of the project (Brandon, 2005). Risk identification cannot be fully completed until the WBS is created and most work, staff and procurements have been specified. Then risks are further identified as the project proceeds and as change orders come in Durkovic and Rakovic in 2009. Risk is an unavoidable factor in IS development projects, therefore, it is very important to take it into consideration in carrying out these projects. As many projects do not finish within the framework of set goals or they never finish, risk management should play an important role in managing IS development projects.

The most important risks in systems: personnel deficits, unrealistic time and cost specifications; insufficient process attention, deficits in third-party components, misunderstood product properties, badly designed user interface, poor architecture-performanec-quality in general, development of wrong product properties, building on legacy systems or embedding them, deficits in outsourced tasks, over-exploiting the technologies (Boehm, 1991). The principle reason for managing risk in an organization is to protect the mission and assets of the organization by Elky in 2006. Therefore, risk management must be a management function rather than a technical function. It is vital to manage risks to systems. Understanding risk and in particular, understanding the specific risks to a system allow the system owner to protect the information system commensurate with its value to the organization.

Elena *et al*. (2011) by using AIS, it is possible to gauge the risk of some operations or predict future earnings with sophisticated statistical software applications. Gibson (1997) to measure risk, a financial firm needs sophisticated information systems. The information systems must combine data from disparate trading units in a structured way to estimate the aggregate by Jeffott and Johnson in 2010. It is concluded that there is a real need in the NHS for tools to better control the inherent risks involved in IS development and implementation. Our study contributes to the literature on risk and IS offshoring in providing the first worldwide empirical examination of the determinants of actual firm IS offshoring behavior with respect to offshoring location risk by Hah and co authors in 2009. Risk of the firm. In this study, we have outlined some of the issues firms face when setting up such systems. We have described two of the many risk management methodologies currently in use in the market and shown how methodology and information system design interact. Efforts by firms to construct information systems that measure their risk on a firmwide basis have enable us to consider the possibility of aggregating risk data across firms in a meaningful, timely way. Any uncertainty associated with system implementation should be identified and examined by performing a risk assessment on the elements of the implementation plan by Soriano in 2011.

CONCLUSION

Based on the introduction, literature review and theoretical framework, the conclusions of the study are as follows: the risk uncertainty influence the information systems. This is in accordance with the theory put forward by Chaffey and Stave (2005). Risks with implementation of information systems must be carefully controlled. Hannah and Ball in 2004 risk assessment is an integral part of system implementation planning. Risks are things that threaten the project's success and include the following: interfaces, computer literacy, technical, training, resources, security, privacy, buy-in (or lack thereof), administrative support, budgets, vendor health and communications. Boczko (2007) clearly in a corporate context, risk whether it is social in origin, economic in nature and/or political in consequence cannot be eliminated.

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