

THE IMPORTANCE OF INFORMATION SYSTEMS IN MANAGEMENT DECISION-MAKING OF THE STATE- OWNED EXPORT INSURANCE COMPANIES: LITERATURE REVIEW

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Abstract

The debate about export insurance that should be privatized or stay state-owned has always been a question. However, in this study, it is not the point. The point is how information systems can help the managerial decision-making in the state-holder export insurance companies to maximize their efficiency, so they can attract more investors and be less dependent on governmental budget. In most countries, these companies are state-owned or dependent on government because the covered risks by export insurance policies and financial resources needed for this area are so vast. In today's insurance business, there is a growing need for information, especially when the subject of insurance is export and international trade. State-owned export insurance companies in most countries are very important corporates that issue the most of export credit insurance policy of the country. When the size of companies increases, the numbers of employees, customers, and the transaction also increases. Therefore, the complexity of the information needed for effective decision-making and other management duties will ascend. Managers in every level need on-time and most efficient information to be able to make decisions properly. Especially in export insurance companies, it has a vital effect, because, the insurers in addition to consider the information about their customers (exporters), they also should pay serious attention to the information about the customers of the insured exporters. They face wide and serious international & country political, commercial, and economic risks. To overcome these risks, the accurate and timely information and also up to date information system is crucially needed. Especially, strategic decisions for insuring the exports to foreign countries require being completed up to date to the countries and companies' situation. According to these descriptions, this study tries to investigate the impact of proper function of information systems on the efficient function of management decision making and how it can affect the attraction of these companies for investors.

Keywords: *Decision making, export insurance, information systems, management.*

1. Introduction

Information systems, without a doubt, have a vital role in management decision making. However, sometimes, information and management decision making cannot meet each other. One of the competitive advantages for a company, especially corporation is how perfectly these two factors can meet, and the decision-making systems should be so sensitive and updated to the information systems. According to FLY, the changes in the various environmental factors, the growth and the development that took place in the economic organizations, and the complexity of the problems they faced, increased the need for the means of collecting and processing the enormous data, which was difficult to deal with by traditional means [1]. The problem was made easy due to the modern technological revolution that led to means that have

facilitated and accelerated the processing of those data and their timely delivery to decision-making centers. Also, the environment of getting decisions can be risky, uncertain, or very rarely be certain. In an uncertain, risky, and a certain environment, respectively, there is a lack of information. So we may change the situation from an uncertain environment toward more certain by developing the information system, especially using the new and up to date technologies in the system like machine learning techniques.

Export insurances cover the political, economic, and commercial risks [2], which may cause the nonpayment of the buyers. Covering these risks need a very secure financial source. Besides, export insurance companies always are facing the risk of crisis, which the evidence from the worldwide financial crisis between the years (2008-2009) shows this fact. In figure 1, you can see during the crisis, the number of claims paid by export insurances increased very sharply in 2009. Therefore, this crisis besides the claims for exporters also it causes a loss for export insurances companies because due to their contracts with exporters, they should pay the claims of nonpayment of buyers related to the covered risks. So one of the competitive advantages in export insurance companies would be to be able to survive in the crisis periods and be able to cover the claims exporters might have faced. Also, one of the most important issues in the crisis was the gap of information, which is the very important factor that cause ineffective decision making. According to Hannoun, the financial crisis exposed many holes in the reporting systems, and better data design may help to reduce the risk of a future crisis [3]. So have the good and professional information systems can help the insurance companies to avoid huge losses and keep their comparative advantages among other export insurance companies or other kinds of creditors.

According to the crisis and the huge amount of money export insurers may need to cover the exporter's probable claims, most researchers and experts of this arena suggest that insurers should be able to use the government budget via subsidies or just being state-owned. Here the aim is not the comparison of private or governmental export insurance companies. Here, I want to mention that how information systems can help the managerial decision-making in the state-holder export insurance companies to maximize their efficiency, so they can attract more investors and be less dependent on governmental budget. The crisis time has been used as an example of how information could help the company to keep its comparative advantages, which will help them to keep the investors or even make more investors. In other word, the company which can create value in a dynamic environment of market is the winner of market fluctuations. Now the question is how information systems can help the managerial decision makers to overcome that?!



Figure 1. Claims Paid by Berne Union Members during 2008-2012 [4]

Source: Annual report of Berne Union

2. Literature review

Research in export insurance has traditionally focused on the effect of export insurance on the growth of export that most of these researches found positive effect of export insurances on the growth of export and trade [5-10]. To the best of my knowledge, there are no researches regarding the management decision making in the export insurance organizations. According to this issue, there may also be no specific research regarding the role of information systems in management decision making in these companies.

According to Mintzberg et al., decision-making processes usually begin with little understanding of the decision situation or the route to its solution, to get the initial image about the possible solution [11]. To understand and analyze the situation, decision makers in companies need efficient information systems. By studying the most of the accepted decision making theories, it can be got that the problems the decision makers may face to make the optimal decision may be the limited rationality of human cognitive capabilities, information shortage, complexity, and the limited abilities in problem-solving of managers. Especially, the famous scholar in decision making, Simon is best known for the “bounded rationality” which state that rationality of individuals is limited by the information shortage, the cognitive limitations of their minds, and time limitation they have to make a decision [12]. According to Afzal et al., information shortage and lack of information transparency produce an environment of distrust and wariness [13]. Therefore, it cannot be relied on and effectively help the decision-making process. Considering the fact that these limitations cannot be completely solved but they can be moderate by using professional technologies and systems. Implementing efficient information systems in an organization can moderate the problem of lack of information. In addition to that also in the decision-making process, using artificial intelligence by machine learning techniques and big data may decrease the cognitive errors of a human being.

According to the definition given by Encyclopedia Britannica, information system is “an integrated set of components for collecting, storing and processing data and for providing information, knowledge and digital products” [14]. To simplify this definition, it can easily be said that information system converts the raw data to useful information for decision-makers

by using up-to-date powerful computer technologies. The characteristics of this information should be comprehensive, reliable, accurate, economical, complete, timely, and flexible to be valuable to managers and decision makers [15]. However, sometimes the decision makers in companies cannot access to this reliable information or it may not be available for them. Jeble et al. mentioned the path from gathering data to the decision making as it can be seen in figure 2 [16]. In the first step, it mentions the data sources.

The data sources for an export insurance company can be categorized into three groups:

1. Using Statistical Data available for the company
2. Usual big data sources like Google search for a product or brand, Google search by specific keywords, Amazon Purchase history, and so on
3. Access to data by being a member of export insurers unions such as Berne Union or ICISA (International Credit Insurance and Surety Association)

According to the debate of lack of accessibility to data mentioned above, export insurance companies can moderate this problem by strengthen their membership in related unions and associations like Berne Union and ICISA to get needed data from these organizations. The sharing of information between Unions and members can increase the validity of the quality of data and also improves the transparency of information relating to economic, political, commercial and behavioral risk of all sides of the insurance contract which would have enable the decision makers in insurance companies to decide more efficiently in all level of organization. In other word, in the time of developing strategies, there is a need to consider a wide range of information, including both the quantitative data and qualitative information about worldwide economic and social trends and other factors likely to influence markets, borrowing behavior, and other variables [13] which also increase the complexity of decision making. Using big data mostly can help to figure out the hidden layers of information about countries which can be found in regular statistical databases. Moreover, access to data due to these relations and memberships can decrease the cost of data collecting and the loss of collection the wrong and unreliable data. The decreasing costs of information systems make all the coordination process more efficient, and therefore improve organizational performance [17,18].



Figure 2. Conceptual framework on the path of data to decision [16]

Source: Jeble et al.

Decision making in export insurance companies need complex knowledge and to leverage this complex knowledge, there is a vital need for a professional system to achieve this goal, which the very important part of this system is information systems. Information systems have a vital role in managerial decision making in any way and any kind, but what makes it special about the role of this factor in export insurance's companies, is how it can be important in a dynamic and complex environment. Because export insurance companies always should be sensitive about all kinds of political, economic, financial, and commercial crisis, which may be local or international. Also, Slagmulder and Devoldere mentioned that in turbulent times, organizations should deal with a lot of external risks such as rapid technological development, shifting customer behavior, new business models, increased regulatory pressure, and competition from

unexpected geographies and sectors [19]. According to Davis et al., business in today's dynamic market environment is experiencing high velocity, complexity, ambiguity, and unpredictability [20]. All of these issues increase the uncertainty and facing risks which for export insurance companies, all these factors may be doubled because, in addition to concerning their customers' (exporters) risks, they should also be concern about the risk facing of the importers who are the exporters' customers. So, all these complexities make the decision-making process double harder and critical. So these companies should find a way of managerial decision making that can be able to confront the dynamic environment of market such crisis mentioned. Although by considering the fact that decision making always comes with uncertainty, according to Berisha-Namani, using the effective information system help managers reduce uncertainty in decision making [21]. Lo mentioned that "if corporate leaders, portfolio managers, and regulators want to make good risk-based decisions, they need to have the right data, and they need to have the right framework to be able to analyze the data" [22]. So in these companies, the importance of very professional and effective information systems should be more considered to increase their excellent position in the competitive world as Teo and Too noted that information system is increasingly providing a competitive advantage for the organization [23]. Another advantage of the information system for managers is that it can provide the information for more precise planning, forecasting, monitoring, and controlling of business for them [24].

3. Conclusion

According to the considerable changes in the various environmental and economic factors related to the decision making of managers in organizations, and the complexity of the problems they faced, the necessity of professional information system in every part of the process is more indicated which by using new technologies became more accessible. Decision making in export insurance companies is not an exception. However, it may be more vital in these companies because of the degree of complexity, uncertainty, and risk these companies face, especially in the crisis times such as the financial crisis during the years 2008-2009.

Based on previous literature, implementation of effective information system brings for decision making up to date, accurate and comprehend data and technologies, reduce uncertainty in decision making, increase the comparative advantages, and provide more precise management duties which can increase the efficiency of management decision making in companies especially export insurance companies. The companies by improving their information systems and also their relations in the international market and unions can increase their accessibility to data and ability to analyze accurately. By efficient decision-making process, the probability of the successful function of the organization will also increase so that it will be more attractive for investments. As much as they can increase other financial sources, they can be less dependent on governmental budget devoted to them.

The limitation of this study is that there was not much research work on this subject. To the best of my knowledge, the role of information systems in decision making of export insurance companies was not investigated before, which make it challenging to study this area.

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