

Evaluating the Success of Information Strategic System Planning

(Two Cases from Jordan)

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Abstract— Strategic Information System Planning (SISP) is a very important issue for contemporary organizations, where information technology is becoming an important driver of sustainable competitive advantage. This paper focuses on the success of the planning process by exploring its proceedings in two cases in Jordan. The paper utilized Earl's Model and applied it on two cases in Jordan by exploring and analyzing the strategic planning process for the two firms "Japan Tobacco International" and "Irbid Electricity Company". Results indicated that evaluating the success of SISP in JTI is more effective and focused than IDECO based on a combination of factors. The clarity of strategy, the stakeholders influence and nature of "social behavior", and the competitive environment are three main factors that support the process of evaluating the success of SISP in the organization.

Keywords—(SISP); Planning; Alignment; Public Sector; Private Sector

I. INTRODUCTION

Strategic information systems (SIS) are important applications that support the competitiveness of contemporary organizations. They are (SIS) a vital condition in business environment for gaining a competitive advantage as they are an integral part of the strategic information system planning structure for the purpose of achieving success [12].

Strategic Information System Planning (SISP) is a critical management issue as it plays an important role in helping organizations explore the environment, monitor the new development in IT, watch for competitors' actions (related to IT in markets), and improve business objectives and functions to achieve business needs utilizing IT [24]. SISP is the main

process in the alignment of information systems and business needs [32], where this strategic alignment plays a significant role in the success of SISP [5]. Without the effective IT/business alignment, businesses will not gain competitive advantage in their markets [13].

The opportunities open for success are improved by using various information technology applications with the appropriate planning process. SISP is an important approach that helps organizations utilizes their resources effectively to achieve their business goals and gain a competitive advantage.

Top management should be aware of the appropriate methodologies to ensure the success of SISP in their organizations [4].

This paper will explore the practices utilized by two Jordanian firms in their SISP process. The cases explored are Japan Tobacco International (JTI), and Irbid Electricity Company (IDECO). The structure of paper is as follows: a literature review was conducted to understand the SISP concept and the strategic environment. The following two sections covered the details of SISP approaches within the two cases. Finally, each case included a conclusion section related to its details.

II. LITERATURE REVIEW

Reference [26, p: 446] defined SISP as “*the process of identifying a portfolio of computer based-applications that will assist an organization in executing its business plans and consequently realizing its business goals*”. According to reference [7, p: 17], SISP is also “*the process of strategic thinking that identifies the most desirable IS on which the firm can implement and enforce its long-term IT activities and policies*”.

The integration of IS infrastructure represents a major problem in complex organizations because ISs are characterized as heterogeneous and fragmented [25]. By establishing SISP in complex organizations, it helps integrate infrastructure components effectively because SISP has a positive relationship with technical and data integration, and diverse functionality of applications [9]. IT is important to understand that utilizing IT diverse application is related to strategic planning and strategic context, where specific hardware and software are suitable for certain situations [2].

A. The Success of SISP

The success of SISP in organizations is not determined by a specific method or procedures or tool, but comes from the awareness of top management of how to manage their resources and understand the nature of their organization [4]. SISP should include a method, and a process of implementation that are considered as necessary conditions to ensure success [10]. The success of SISP in organizations is based on the process that is used in developing SISP, the strategy which has a specificity and comprehensiveness in its framework, and is a strategy that can contribute in providing a positive impact on the success of SISP [32].

Reference [10] identified a set of approaches to develop SISP in organizations and as follows: business led approach, method driven approach, administrative approach, technological approach, and organizational approach. Reference [23] asserted that the choice of the proper methodology for developing SISP provides a positive indication of success of SISP in organizations. According to a study among United Kingdom organizations, the combination of SISP development approaches increased the level of success of SISP [4, 31, 33]. Research indicated that using more than one methodology in SISP implementation provides a significant contribution to the success of SISP.

Reference [32] identified a set of situational factors that influence SISP environment and they are: market hostility, market dynamism, organizational formalism, centralization, role of IS, SISP goal, maturity of planning processes, IS participation in business planning, frequency\consistency, acceptance of plans. Also, they identified the SISP process configuration variables and they are: senior management involvement, resources, team involvement, participation, SISP imitator, influencer, IS role, method, SISP planning horizon, SISP scope, environmental assessment, comprehensiveness, flow, design focus, implementation. The authors concluded that both sets of variables are closely related and would significantly influence the success of SISP. Results of their research indicated that market hostility has a positive impact on four SISP process configuration variables and they are: resources, participation, influencer, and comprehensiveness. SISP goals have also positive impact on four SISP process configuration variables: SISP planning horizon, environmental assessment, comprehensiveness, and flow. Based on that, market hostility and SISP goals have the most positive impact for success the SISP based on SISP process configuration variables. Finally, and according to reference [29] work, the comprehensiveness of information system panning phases (strategic awareness, situation analysis, strategy conception, strategy formulation, strategy implementation planning) has a significant influence on the success of SISP.

Organizational learning is an important aspect in strategic planning, where it was evidenced in companies that relied on ad-hoc basis in planning activates. Such result was associated with the existence of non-formal method within an organizational approach [10]. Organizational learning is a key success factor in SISP when concentrating on knowledge, skills and attitude for any member of the SISP team. Also, organizational learning has a positive impact on organizations which have a past experience and a mature IT/IS stage. By increasing their SISP performance, facilitating information exchange, and improving the capabilities of their members, firms can enhance the SISP practice through a consistent decision-making process to gain competitive advantage [1].

B. The Failure of SISP

Research reported some of the unsuccessful features of SISP like: inadequate implementation, lack of top management support, time constrains, poor user-IS relationship, and resource constrains. SISP process is characterized differently based on different types of resources within an organization [10]. Such reasons are common in all causes of failure of IT projects [3][35]. Resources are classified into IT resources, human resources, financial resources, and others. Reference [24] proclaimed that financial resources are the most critical and harder for managers to determine accurately and most projects fail due to financial resources constrains. Other reasons for failure are reported by research like: lack of integration in a global organization may affect its business strategy because of the differentiation in culture, decision style, communication style, and leadership style [27]. Using

one methodology for implementing SISP might fail the SISP process [4].

According to a study in Australia related to the main reasons leading to failure of SISP, the lack of commitment by senior manager represents the main reason for failure of SISP formulation and implementation. The study also concluded that budget limitations is the main reason causing failure of SISP formulation, and the lack of alignment with business objectives is the main reason for failure of SISP implementation [30]. Research also indicated that the excessive commitment by top management and the excessive involvement by senior management and team members may have a negative impact, because they cause a waste in time and resources and take more time exploring all details to take decisions; such process leads to failure of SISP development [6].

Finally, in the Jordanian environment, research concluded that the top four reasons for IT project failure in a descending order were: poor planning, unclear objectives, and changing objectives during execution, and lack of executive support [3]. The study utilized responses from 95 IT specialists from diverse companies in Jordan.

C. SISP dimensions and alignment

There is a gap between SISP successes and IS capabilities, some researchers provided some dimensions to measure the success of SISP practices. The first dimension is the alignment scale which associate IS and business function. The second dimension is the analysis scale, which explores all related activities in the organization. The third dimension is the cooperation scale, which integrates the business functions together. The fourth dimension is improving the capabilities of learning. The last dimension is the contribution scale, which covers the improvement of different objectives (decision making, effectiveness, efficiency...) in an organization [24].

Reference [10] concluded that the alignment between information system and business needs is the most beneficial aspect of SISP. Reference [13] proposed an integration model to ensure the alignment of IS/IT with business needs. The integration model provides a set of benefits for businesses such as evaluating what the organization needs by concentrating on resource based theory, enhancing the alignment process through planning the activities, and improving organizational learning.

III. RESEARCH METHOD

This study followed a case study approach, where two cases were selected to apply the Earl (1990) approach for SISP. The two cases were utilized to understand better the evaluation and success of strategic information system planning (SISP) by using Earl Model, to determine the differences of the two cases in their SISP approach. The following two sections will explore the two cases in details and their SISP practices. Qualitative analyses on responses were applied to better understand the planning process and conclude to the research objectives. The main objective of this research is to

understand the SISP process followed by Jordanian firms. The study utilized two major cases: Japan Tobacco International (JTI), and Irbid Electricity Company (IDECO).

IV. JAPAN TOBACCO INTERNATIONAL

Japan Tobacco International (JTI) founded as a partnership of Japan Tobacco and RJ Reynolds, where they form a group of private companies operating in 120 countries in the world and Jordan is one of them [18]. The goal of JTI is to be the most successful and respected tobacco company in the world. JTI has a corporate strategy to increase profit through establishing outstanding brands, enhancing productivity and focus on continuous improvement.

The data collected in this study was collected from an online survey (questionnaire) sent to JTI-Jordan. The questions were answered by the manager of JTI in Jordan (based in Amman, Jordan). The research questions addressed in this study are adopted from Earl's work (1990). The following sections will depict the qualitative data collected and conclusions of this research.

A. IT in JTI

JTI follows a strategy where they focus on how ends (goals) will be achieved by means (resources). Aligning IS with business needs is important for SISP [10], and this objective comes first in ranking followed by seeking for competitive advantage. JTI sees technology as an important tool, where they described two systems that are implemented: The first one is a track and trace system which prevents illicit trade for supply chain, and provides support to develop and implement the anti illicit trade (AIT) technology to prevent the illegal (bootlegger) sale of its tobacco products. This system is also used for investigating where a realistic product may be delivered from within the legitimate supply chain to an unintended market [19].

The second system is the product authentication system which provides an authentication for its products. It is also a digital tax verification system that allows customers to check if the package is realistic or not by an SMS or telephone call. JTI employed tagging on their products (especially chemical products) by using a reader to vitrify them. JTI also adopted security programs to monitor their products from theft during transportation stage and monitoring the finished goods at factories and warehouses. Finally, in November 2014, JTI completed an acquisition of e-cigarettes brand, E-Lites which was defined as “consumer products that provide an inhalable vapor by direct electrical heating of a liquid contained within the device or a replaceable cartridge.” Such step was done to improve the performance of consolidated group and their cash flow [22].

B. The benefits and problems of SISP in JTI

Responses collected indicated that the main benefit of SISP is the documentation and communication describing the organization's strategy and how it should be implemented.

Responses showed that the strategic planning is analytical in nature, where managers should act strategically and concentrate on intuition and creativity [28]. JTI strategy formation itself involves synthesizing via strategic thinking, where it is considered a critical success factor and one of the key elements for JTI. As such, strategic planning occurs around the strategy formation activity.

Strategic planning has been criticized for attempting to systemize strategic thinking and strategy formation, because strategic thinking needs to synthesize (initiation and creativity) and strategic formation act as an instrument to evaluate the quality of strategic thinking in an organization [11].

C. The content heading of JTI strategy

The IS strategy of JTI included (Figure1) four stages: First is the process, where it includes four sub stages:

- 1) *The overview stage*, provides an overview about the types of brands for each department along the 120 countries, this stage also provides characteristics and quality for the product to be delivered to customers and to meet their expectations.
- 2) *Inputs*, in this stage the tobacco is imported like other materials such as papers.
- 3) *Activities*, to generate outputs.
- 4) *Output*, to produce the finished good.

The second stage is tools and approaches; JTI tries to make raw material available as input resources. JTI signed contracts with farmers to provide the best quality raw material. The third stage is strategic planning vs. financial planning; this phase is related to financial strategic plan, where financial planning is an important part of strategic planning. [24] Asserted that the financial resources are the most critical and hardest for managers to determine accurately and most projects fail due to financial resource constrains. The fourth stage is strategic planning vs. strategic thinking; this stage is considered as the key element of IS strategy for JTI and held more criticism because it includes a synthesis and intuition process.



Fig.1: The JTI IS strategic process

D. Developing IS strategy in JTI

Many of methods are used in developing IS strategy. JTI used two main methods: firstly, the balance scorecard method to align business activities to its corporate strategy to achieve its goals. The second is the strategic map method for monitoring their strategy. The two methods are used according to their business needs. Other methods are used sometimes to develop their strategy; the following are a short list [20]:

- ✓ Stages of growth used to develop its marketing strategy,
- ✓ Business system planning (BSP) to recognize business mission and objectives, and functions to determine business process for its needs.
- ✓ In-house IS strategy method and In-house business strategy method are utilized by understanding all business objectives from all separated functions and departments by the center of excellence (COE) in JTI. Also, the global development center (GDC) is responsible for identifying the direction of its strategy.
- ✓ In-house application search technique method is used by implementing enterprise resource planning system (ERP) to integrate new acquisitions, such as human resource operations, and by implementing track and trace system, all of these methods are used according to business needs.

SISP in JTI is connected to other business planning processes by coordinating the planning efforts and measuring the progress on strategic objectives and goals. Strategies should be reviewed from time to time to evaluate them, develop and improve to sustain competitive advantage. JTI reviews its IS strategy by benchmarking it to competitor or by comparing prices in the market, and may be used the same way for evaluating if SISP succeeded or not.

E. Successful SISP in JTI

JTI utilized few techniques and supporting tools for their methodology and they are: PEST analysis, Porter’s five forces model, the growth share matrix, scenario planning, and SWOT analysis. PEST analysis (political, economic, social and technical) is an example of some practices conducted like: eliminating illicit trade by making an agreement with national government entities (political direction). An example is the agreements with the European Commission and EU Member States (December 2007). From the economical aspect, JTI monitors the international economic growth for the purpose of future investments. The social aspect is represented by the focus on reducing child labor in the world and contributing to establishing an international wide policy. Finally, the technical aspect is demonstrated by implementing the track and trace system and security systems for monitoring its supply chain from illicit trade [19].

JTI uses Porter five forces analysis to understand threats of new entrant by monitoring the markets, threat of substitute products or services by continuously improving their goods, the bargaining power of customers by providing loyalty to

their products, the bargaining power of suppliers by supporting the farmers of raw materials, and finally the intensity of competitive rivalry by sustaining a competitive advantage through innovation [34]. By keeping the channels of communication and discussion open for new ways and ideas, and creating opportunities for meetings to share knowledge and new ideas across the organization, JTI emphasizes knowledge and learning as a fertile ground for innovation [21].

JTI uses also the growth share matrix to evaluate its products. This matrix divides products into four categories: the stars, the cash cow, the dogs, and the question mark [8]. The first category is stars; Rolling Tobacco is one of the top rolling brands and a leader in the world and Hamlet Cigar is the leader in Greece. The second category is cash cow; Winston product has the best market share and cash revenue, where it is sold in over 100 countries. The third category is the dog; JTI offer Snus products for non smoking people, where this product has a low market share and sells only in Sweden with a low growth rate. Finally, the question mark such as the Mevius product; it's a new product and needs some time to increase its market share [22].

JTI uses scenario planning or scenario thinking to make predictions about future events and depict how the future might look like. JTI also uses SWOT analysis method to evaluate the strengths, weakness, opportunities, and threats in its environment and industry. Strengths of JTI in acquiring the leading e-cigarette brand E-Lites, the weakness of JTI is in the lack of integration between departments because of the differences in culture, decision style, communication style and leadership style [27]. Also, as government regulations try to ban JTI brands, JTI seeks to increase growth in market share as an opportunity open for it, the core revenue grew 3.3% during July-September and 2.4% during January-September in 2013. Finally, the threat to JTI is in illicit trade of its supply chain processes and industry contraction [17].

F. Conclusions

We can conclude that JTI succeeded in implementing SISP in their strategy based on Earl Model. The strategy of JTI is completed through four stages (process, tools and approaches, strategic planning vs. financial planning, and strategic planning vs. strategic thinking). IT is a critical part of the firm's strategy, and SISP is very important to achieve business needs by aligning IT with business strategy of a firm. SISP is a mechanism to become a leader in market by gaining a competitive advantage and increasing market share.

Strategic planning has been criticized for attempting to systemize strategic thinking and strategy formation, are inherently creative activities involving synthesis, and strategic planning vs. strategic thinking is the most key elements in the firm strategy. To ensure the success of SISP, the firm is implementing additional set of tools and techniques such as PEST analysis, porter five forces analysis, growth-share

matrix, scenario planning, SWOT analysis, and balance scorecards [4].

Introducing the e-cigarette brand to their products is a critical success factor which contributed to the improvement of the company's strategy to increase the competitive strength against its competitors. Based on that, we can assert that government's intervention is one of the problems that hinder company's strategy.

V. IRBID ELECTRICITY COMPANY

Irbid Electricity Company (IDECO) was founded in 1957. The vision of company is to become leader in providing electric service with high quality and distinctive specifications that are compatible with the best international standards by 2015. The mission of IDECO is to contribute to the continuity of economic and social development through providing excellent service with high quality according to international standards in all parts of company's business areas. This is done through the commitment to invest in the development of human element in order to raise efficiency and the development of capabilities to achieve better service and return that meet customer needs and exceed the expectations of employees and all stakeholders involved in the company [14].

According to a Forbes study that included 324 companies from Jordan, Saudi Arabia, Egypt, Kuwait, UAE, Bahrain, Oman, Qatar, and Lebanon, results indicated that the administrative stability in IDECO contributed to the increased profit and enhanced financial performance during the past five years. The study showed that the IDECO had the strongest executive managements based on four standards: return on shareholders in 2011, the rate of market share, the rate of asset growth, and the rate of earnings growth per share. The Forbes study stated that the general manager of IDECO is the most powerful general manager in Jordan within the energy field [15].

The data collected for this case through an interview with the manager of IT department in the company. The interview was built around a survey (questionnaire) that took one hour of time. The items included in the interview are adapted from Earl (1990), and similar to the set used for the JTI case. Results of the survey indicated that IDECO strategy is derived from the government and there is no clear strategy because the process and activities are setup and implemented based on day to day needs. The commitment of top management is very important for IDECO and respondent declared that top management commitment is the main objective for developing IS/IT strategy. Also, IT department provides a technical support rather than aligning IT in the strategy of a firm, where the respondent described the IT department involvement within the strategy of IDECO as part of a workflow system.

A. IT in IDECO

Workflow system is the first completed ERP system in Jordan that is developed in house to follow up all activities and orders

in a company. The workflow system provides different set of activates such as, manage the in/outgoing transactions, executing reports, managing and executing all types of transactions such as governmental transactions and in house transactions. This system also identifies a profile for each employee in the company under the name of employees' services that contain all the information needed related to employees and provides different services such as request of vacations.

Workflow system also is used for planning the resources of organizations and help to query about the archived files (electronic archiving). Also, it helps query about the amount of materials in warehouses and provide an overview about emergency breakdowns in any location. Workflow system has a renewable system; it's a transaction system that helps to provide queries about the bills of services, and information about the subscriptions of customers. The CIO declared that the workflow system is considered as an application that presents an opportunity to sustain a competitive advantage for IDECO.

IDECO is the first electricity distribution company in Jordan that activate the electronic bill payment "E-payment" in collaboration with the Central Bank through a set of tools and techniques such as net-banking, mobile banking, and ATM. Such step aims to facilitate the payment of bills from any place in Jordan and at any time without charging extra commission [16].

B. Developing IS strategy in IDECO

The responses collected in relation to the SISP process in IDECO declare that the methods used for developing there is strategy are the following: the first method is the stages of growth model, where it develops the workflow system in step by step process according to their business needs. The second method is business system planning for monitoring business channels. The third method is enterprise modeling for new and change management. Finally, the fourth method is information engineering which integrates data with other departments of IDECO. IDECO also used In-house IS strategy, In-house business strategy, and In-house application search technique for the development of the workflow system according to their business needs.

Due to the nature of company's work and its direct relation to citizens, the social behavior and the nature of people are the main problems that hinder the success of the company's business strategy. The company faces some difficulty in dealing with some people and convincing them to pay the bills of the services provided by IDECO.

IDECO is the only company that offers the electric services in Irbid city, this leads to the absence of a competitive environment, which have a key role for continuous improvement of company's strategy.

C. Conclusions

Compared with IDECO, JTI succeed in implementing SISP in their strategy based on Earl Model, by analyzing its strategy, and evaluating its strategy methods and tools that are considered as a cornerstone to the success of SISP. Although IT is a major driver in its routine processes, IDECO could not identify the success of SISP because of the lack of clarity in its strategy, where its strategy is derived from the government directions, in the other hand, the absence of a competitive environment, and a negative impact of social behavior. Based on such direction, IDECO failed to implement SISP based on Earl Model, which might not be a downside rather than an opportunity to future research to map other schemes and approaches to SISP. The public perspective is dominant in the case of IDECO, where the Jordanian government perspective prevails as a major stockholder in the firm.

Evaluating the success of SISP in both private and public sectors needs to take many cases into consideration which consumes more time, but this study was limited to two cases only. Through these case studies, it is visible that evaluating the success of SISP in private sector is an easier and more focus process than in public sector. Such conclusion is based on three factors: the clarity of strategy, the stakeholders influence and nature, and the competitive environment

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