



*The Effect of Strategic Enterprise Management (SEM)
and Information System (IS) on Organizational
Performance*

A Case Study of Royal Jordanian Company

*تأثير إستراتيجية إدارة المشاريع ونظام المعلومات على الأداء التنظيمي
دراسة حالة الملكية الاردنية*

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AUTHORIZATION

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Date: 2/6/2012

DISCUSSION COMMITTEE DECISION

This dissertation was discussed under the title:

"The Effect of Strategic Enterprise Management (SEM) and Information System (IS) on Organizational Performance: *A Study Case of Royal Jordanian Company*"

It was approved in 2 / 6 / 2012

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SIGNATURE



DEDICATION

*To my father's soul and mother for their endless love,
support and encouragement*

No words can make me express my gratitude and love

To my brothers

To my best friends

To my dream and hope

To the souls of martyrs of freedom everywhere

ACKNOWLEDGEMENT

*All the praises and thanks be to Allah, the Lord of all the worlds
and existence, the most Gracious and the most Merciful.*

To my parents for their love and support throughout my life.

Thank you both for giving me strength to reach my dreams. To

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thanks as well.*

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The Effect of Strategic Enterprise Management (SEM) and Information System (IS) on Organizational Performance

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ABSTRACT

The main objective of this study is to identify The effect of strategic enterprise management (SEM) characteristics and information system (IS) characteristics and their effect on organizational performance of Royal Jordanian Company in Amman.

The sample of study consists of the employees of Royal Jordanian Company in Amman including heads of department, directors and managers (200),that apply SEM and IS .

In order to achieve the objectives of the study, the researcher designed a questionnaire consisting of 43 statements to gather primary information from the sample intentionality. The statistical package for the social science (SPSS) program was used to analyze and examine the hypothesis.

After executing the analysis on the study hypothesis, the study concluded that:

- The level of important of SEM characteristics and IS characteristics on organizational Performance of Royal Jordanian company was medium.

- There is a significant effect of **SEM** characteristics on organizational performance on Royal Jordanian Company at level (0.05)
- There is a significant effect of **IS** characteristics on organizational performance on Royal Jordanian Company at level (0.05).
- There is a significant effect of **SEM** characteristics and **IS** Characteristics together on organizational performance on Royal Jordanian Company at level (0.05).

Finally the study set the following recommendations:

- 1- Management in Royal Jordanian Company needs to clarify the Strategies to achieve the company's objectives that are derived from its vision, Rather it is recommended for the management to walk with the direction team (Board) while creating the goals and strategies. The best way to lead people into the future is to connect them deeply to the present.
- 2- Managers in Royal Jordanian Company should consider increasing efficient processes and team work by training and developing programs. Opening the cross functional lines for better productive involvement and brain storming.
- 3- Focusing on the business processes that produce unique elements in terms of high level of business metrics provide the firm with techniques for building enterprise data and models to distinguish the position in the market place.

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Chapter One

General Framework

- 1.1 Introduction**
- 1.2 Study Problem and Questions**
- 1.3 Objective of Study**
- 1.4 The Significance of the Study**
- 1.5 Study Hypotheses**
- 1.6 Study Model**
- 1.7 Study Delimitations**
- 1.8 Study Limitations**
- 1.9 Terminologies of the Study**

(1-1): Introduction

The airline industry is a strategic sector that plays a fundamental role in the globalization of other industries since it promotes tourism, trade, foreign investment and, therefore, leads to economic growth.

Today, the airline business strategies are affected through differentiated operational and organizational structures. They influence business processes and procedures in attaining the important Strategic Enterprise Management (SEM) that is used to manage enterprises of every size, from simplest bands to the largest and most complex organizations. This SEM is a potential to help them examine assumptions of management techniques and employee involvement. All this affect the overall management style which influence the competitiveness of the business in the aviation industry. SEM typically applies a particular set of performance-enhancement techniques (such as Business Process Redesign, Value-Based Management, Activity-Based Management. But even if these techniques are appropriate for all organizations, knowing what sets of changes need simultaneously to happen (the change content) is only half the performance- improvement battle. From a policy point of view we also need the answers to a set of questions about the process and context of changing **(Pettigrew, 1985)**. These questions imply that SEM may not only suggest remedies that are irrelevant to the problems faced by an individual organization (i.e. wrong content), but that they ignore important issues of context and process as well. For these reasons, we will argue, SEMs can only be regarded as partial solutions to organizational performance improvement.(**Brignall & Ballantine 2004 P226**) In addition, several internal-management applications facilitate the strategic and operational management and marketing of the travel organization .Information system (IS) support all business

functions and are critical for operating the travel industry as a whole. IS supports the strategic management of travel organizations by empowering long-term decision making and by providing a platform for collaboration and transactions among various air carrier.

This research deals with the role of SEM and IS in generating strategic and operational management of airline that will affect the future competitiveness of airline carrier. Unfortunately very little is known about the factors of successful SEM implementations in conjunction with the role of information system in this context. **(Buhalis 2004 p 4)**. Many companies have integrated (SEM) technology into their processes to empower long-term decision making and to provide a platform for collaboration and transactions between partners. **(Buhalis 2004)**.

The above highlighted the importance of SEM especially in these days, but when combined with IS, it will have a higher level of importance; the impunity of SEM and (IS) is quite high in airline Industry.

As this researcher is working for airline organization, she has chosen the Royal Jordanian in Amman for conducting this research. This study has investigated the effect of SEM and IS on the organizational performance.

(1-2): Study Problem and Questions

The intense competition among the airlines today makes it imperative for the airline carrier to use the most advanced technologies, in order for an organization to exist, and to maintain a sustainable advantage in the air careering industry. In the introduction, the importance of SEM and IS was emphasized, but that is not enough SEM and (IS) have to deliver tangible performance for the organization, and both are extremely important for such travel sector as discussed before.

This research aims to measure the effect of SEM and IS on the organizational performance through answering the following questions:

Question One: How important is the effect of SEM characteristics on Royal Jordanian performance?

Question two: How important is the effect of IS characteristics on Royal Jordanian performance?

Question three: How important is IS and SEM combined on improving the organizational performance of Royal Jordanian?

This study includes eight demographics variables (gender, current position, and number of years in the company, number of years in the position and educational level to describe the result of the distribution of responses.

(1-3): Objectives of the Study

The main objective of this study is to determine the aspects that are related to SEM and IS and their effect on Royal Jordanian performance. It is the aim of this study, therefore:

- To identify the SEM characteristics and their influence on the RJ performance.
- To identify the IS characteristics and their influence on the RJ performance.
- To explore the impact of IS characteristics and SEM characteristics together on RJ performance.

(1-4): Significance of the Study

The previous sections showed the importance of SEM and IS , and highlighted the need to investigate the effect on Performance, and also answered why the airline industry was chosen for this investigation. From that viewpoint the significance of this study can be listed as follows:

- 1- It is the first study, to the knowledge of the researcher, to explore the effect of SEM and IS together on the performance of airline carriers, particularly RJ airlines.
- 2- This study will open the door for other researchers to extend the scope of this research to other areas in aviation industry.
- 3- To explore other related areas of air transport systems for the improvement of human life.
- 4- To help the decision making personnel find the best alternative or to determine the relative total priority of each alternative.

(1-5): Study Hypotheses

Based upon the study problems and literature review, the following research hypotheses will be examined:

HO1: There is no statistically significant effect of SEM characteristics (Business Process, Management function) on organizational Performance of Royal Jordanian company at level ($\alpha \leq 0.05$).

This hypothesis is divided in to following sub- hypotheses:

H_{01-1} : There is no significant effect of business processes on performance effectiveness of RJ at level ($\alpha \leq 0.05$).

H_{01-2} : There is no significant effect of business processes on performance efficiency of RJ at level ($\alpha \leq 0.05$).

H_{01-3} : There is no significant effect of management functions on performance effectiveness of RJ at level ($\alpha \leq 0.05$).

H_{01-4} : There is no significant effect of management functions on performance efficiency of RJ at level ($\alpha \leq 0.05$).

HO2: There is no statistically significant effect of IS characteristics (System Quality and System Use) on organizational Performance of Royal Jordanian company at level ($\alpha \leq 0.05$).

This hypothesis is divided in to following sub- hypotheses:

H_{02-1} : There is no significant effect of system quality on performance effectiveness of RJ at level ($\alpha \leq 0.05$).

H₀₂₋₂: There is no significant effect of system quality on performance efficiency of RJ at level ($\alpha \leq 0.05$).

H₀₂₋₃: There is no significant effect of system use on performance effectiveness of RJ at level ($\alpha \leq 0.05$).

H₀₂₋₄: There is no significant effect of system use on performance efficiency of RJ at level ($\alpha \leq 0.05$).

HO3: There is no statistically significant effect of IS characteristics and SEM characteristics together on organizational performance of Royal Jordanian company at level ($\alpha \leq 0.05$).

This hypothesis is divided in to following sub- hypotheses:

H₀₃₋₁: There is no significant effect of SEM characteristics and IS characteristics on performance effectiveness of RJ at level ($\alpha \leq 0.05$).

H₀₃₋₂: There is no significant effect of SEM characteristics and IS characteristics on performance efficiency of RJ at level ($\alpha \leq 0.05$).

(1-7): Study limitations

The study scope deals with the following:

Human Limitations: the managers working in the Royal Jordanian Company (Amman) who occupy positions of (Manger, Director and Head of Department).

Place Limitations: Royal Jordanian Company in Amman.

Time Limitations: the time expected to accomplish this study is two academic semesters.

Scientific Limitations: The researcher depends on the Information System that has been suggested by **Vital,atel (1986) & Zachman. (1987)** and on the Strategic Enterprise Management that was suggested by **Porter (1980-1985)** ,and on Airline Performance as suggested by **Kou (1995)** .

(1-8): Study delimitation:

1. Implementing the study of questionnaire's distribution and collection from the airline personal sector, of Royal Jordanian Company.
2. Previous studies related to SEM characteristics and IS characteristics were few.

(1-9): Study Terminologies

Strategic Enterprise Management (SEM)

SEM is integrated tools to unify function to all business units, the way that enterprise can align its activities with the value expectation of its shareholders. Strategy has to move out of the office and needs to be integrated into the day to day work of each employee, who can contribute their talents to make strategy happen, and who can provide feedback for further optimization, growth and development of the company.(Kramer et al 2009, p21).

Characteristics of SEM:

A significant advantage of SEM solution is providing integrated support for business process and management function (Daum 1998, p18).

- 1- **Business Processes:** A series or network of value added activities performed by their relevant roles or collaborators to purposefully achieve the common business goal. (ko 2009, p12).
- 2- **Management Functions:** are the fundamental aspects of management that include planning, leading, organizing and controlling. These functions are essential to accomplish business enterprise goal.(Bjornson 2008, p2).

Information System

Information system is a set of interrelated elements or components that collect, manipulate, store , disseminate data and information and provide feedback to meet the objectives.(Stair &Reynolds 2009, p9).

Characteristics of IS:

In order to achieve information system benefits (IS) is the ability to demonstrate system quality to use the scarce resources available with maximum returns and in terms of system use and benefit. (Greet & Cherfi 2006, p328).

1- System Quality:

System quality is a habit of continuous process improvement of two kinds of processes first, development processes that define data and develop application; second business processes that create, update, delete data and retrieve information through integration of methods into the culture of the enterprise to become more central to the accomplishment of organization missions.. It is measured in terms of ease of use, functionality, flexibility, and integration. (Delone & Mclean 2003, p13).

2-System Use:

The actual use of a computer can be affected by the degree to which system characteristics match user task needs .The nature of system use addressed by determining the full functionality of a system being used for the intended purpose, with regard to the extent of use of various states of system utilization and the determinants of the users acceptance. (Ramezan 2006, p7).

Organizational Performance

Performance is an analysis of how both **effectiveness** and **efficiency** in accomplishing a given task. All evaluations are in relation to how well a goal is met. **Effectiveness** is defined as the extent to which goals are accomplished. **Efficiency** is

the measure of how well the resources expended are utilized.(Mentzer & Konrad 1991 ,p34). Organizational performance includes the actual outcomes of the strategic management process. The practice of strategic management in terms of its ability to improve the organization performance, it comprises the actual output of an organization as measured against its intended output (or goals and objectives). (Wheelen &Hunger 2010, p18).

Chapter 2

Theoretical Framework and Previous Studies

2.1 Strategic Enterprise Management

2.2 Information System

2.3 Organizational Performance

2.4 Previous Studies

(2-1): Strategic Enterprise Management

Strategic management is concerned with the company's initiatives taken by the management, to create, enhance and sustain its capabilities regarding its environment, and to reach the company's objectives (**Ansoff 1987**). Conceptions on what is strategy and strategic management have evolved and fragmented over the years (**Whittington 2001, Drejer 2004, Bigler 2009**).

According to Nag et al. (2007), amongst strategic management scholars, the implicit consensus definition for strategic management is: "The field of strategic management deals with the major intended and emergent initiatives taken by general managers, on behalf of owners involving utilization of resources, to enhance the performance of firms in their external environments". The definition covers explicitly aspects of environment, society, enterprise; organization, management, people; knowledge, outcomes, and value creation, which all have reflection to the context of the framework for strategic enterprise management.

In 1980, Michael E. Porter published his influential work "Competitive Strategy: Techniques for analyzing industries and competitors" Porter, building on Andrews' 'Design School' model, which focused on an examination of the structure of the industry or market in which an organization competes. His model of five competitive forces (rivalry among competitors, threat of new entrants, bargaining power of suppliers, bargaining power of customers, and the threat of substitute products) allowed managers to assess the attractiveness of the market and establish the most competitive position within that market (**Browne 1994; Feurer& Chaharbaghi 1995; Robbins et al. 2000**). **Porter's (1985)** concept of the 'value chain' was another development that allowed managers to determine potential sources of competitive advantage by

examining the activities that their organization undertook and the links between them **(Nonaka 1991)**.

The purpose of an enterprise is to create value throughout the value chain for customers, owners, personnel and society **(Ansoff 1979)**. In macro-economic scope technology and innovations within the value creation systems, are majors source for productivity, economic growth and increasing wealth in socioeconomic environment **(Solow 1957, Denison 1962, Nelson & Winter 1982, NRC Council 1987)**. Furthermore, companies are affected by continuous technological developments and innovations that are changing the value creation systems and lead to the evolution of the entire industries.

For value creation, a company has to define and execute the strategy, in order to develop the required capabilities regarding customer, financial, business processes and learning perspectives **(Kaplan & Norton 2004)**. Through creation and execution of a certain strategy, the company is actually structuring its position in the market and in the value chain **(Porter 1985)**. This position is fundamentally defined by the business models that a company pursues for achieving its mission **(Chesbrough 2006)**. In simple terms, a business model consists of offering value creation system and revenue model, although contemporary conceptualization of business models is often inadequate when applied in practice **(Suikki et al. 2006, Mäkinen & Seppänen 2007)**.

Integrated management concept of **Bleicher (2004)** attempts to provide a systematic method into management thinking and decision-making. In the integrated approach to enterprise management, the main objectives are to secure survival and development capabilities for an enterprise to avoid partial solutions to the problems, and to see dependencies of an organizational entity. The concept is non-prescriptive as the

actual contents depend on the context that it is applied in. An integrated Strategic management focuses on building, and exploiting the competitive potential of an enterprise, for which resources need to be assigned.

Normative and strategic management dimensions are transformed into operative execution of the activities according to the goals and objectives of a company. The function of the operative management is to direct the execution that impacts the capabilities and resources of the company. **(Bleicher 2004.)**

The task of the strategic management dimension is to influence the behavior in the operative management dimension. At the operative dimension, behavior is represented as work performance and co-operation capability of people when activities are performed. Through these mechanisms, horizontal and vertical integration of normative, strategic and operative dimensions, and the aspects of structures, objectives and behavior, are realized. **(Bleicher 2004.)**

SEM supports the trend away from key figures that focus on the past such as those provided by quarterly and annual accounts. The trend is towards performance management that allows future focused enterprise management and active management of stakeholder expectations. The SEM component, therefore, is designed to enable you to carry out comprehensive simulations and scenario analyses without investing much of excessive time and effort.

For strategic planning and specific operational problems, SEM provides facilities for dynamic simulations based on special tools and functions. Thus it is possible for example, to model and simulate the complex, nonlinear relationships between markets, competitors, and your own enterprise **(juergen 1998).**

SEM can translate a company strategy into understandable terms for each employee, by standardizing information and using a common integrated platform to support the management through automating performance monitoring and decision making processes. **(Tobola 2009)**.

Based on SAP's Business Framework and technology, which facilitate the speedy implementation of new solutions, SAP SEM comprises five application components:

1. Business Planning and Simulation.
2. Business Information Collection.
3. Business Consolidation.
4. Corporate Performance Monitor.
5. Stakeholder Relationship Management.

Underpinning all these components is the Business Information warehouse, which makes it possible to analyze, manage, and query complex questions. **(SAP White Paper.1999)**. Therefore SEM support the entire life cycle of the performance management, delivering real time and matrices to improve business insights and analytics **(Tobola 2009)**.

This SEM enables continuous improvement of business processes while supports evolving business conditions **(Hill, 2008)**.

Business Processes (BP):

Although BP has focused on automation and technology in the past, the concept is gradually becoming more and more a management-oriented concept.

As the technology becomes more mature, the management aspects of BP become of major importance. According to **Gartner**: “BP refers to a set of management disciplines that accelerate effective business process improvement by blending incremental and transformative methods.

BP’s management practices provide governance of a business process environment toward the goal of improving agility and operational performance. BP is a structured approach that employs methods, policies, matrices, and management practices and software tools to manage and continuously optimize an organization activities and processes” (**Gartner:Cantara & Hill, 2008**).

The SEM approach is intended for designing new high performance processes. The basic methodology consists of the following five steps:

1. Define the goals of the design activity that are consistent with customer demands and the enterprise strategy.
2. Measure and identify critical total qualities (CTQs), product capabilities, production process capability, and risk assessments.
3. Analyze to develop and design alternatives, create a high-level design, and evaluate design capability to select the best design.
4. Design details, optimize the design, and plan for design verification. This phase may require simulations.
5. Verify the design, set up pilot runs, and implement the production process, and hand over to process owners.. (**Smith and Fingar, 2003**).

Management functions

To accomplish business enterprise goals the SEM carries out the managerial functions of planning, organizing, staffing, leading, and controlling. Furthermore, management applies to any kind of organization (**Koontz and Weihrich 1990, p. 4**).

Henri Fayol's administrative theory mainly focuses on the personal duties of management at a much more granular level. In other words, his work is more directed at the management layer.

Fayol believed that management had five principle roles: to forecast and plan, to organize, to command, to coordinate, and to control. Forecasting and planning was the act of anticipating the future and acting accordingly.

Organization was viewed as the development of the institution's resources, both material and human.

Commanding was keeping the institution's actions and processes running. Coordination was the alignment and harmonization of the group's efforts. Finally, control meant that the above activities were performed in accordance with appropriate rules and procedures. **Fayol** developed fourteen principles of administration to go along with management's five primary roles. (**Koontz 1961**). These principles are: specialization/division of labor, authority with responsibility, discipline, unity of command, unity of direction, subordination of individual interest to the general interest, remuneration of staff, centralization, and scalar chain/line of authority, order, and equity, stability of tenure, initiative, and esprit de corps. **Fayol** clearly believed that personal effort and team dynamics were part of an "ideal" organization.

Fayol's five principle roles (Plan, Organize, Command, Co-ordinate, and Control) of management are still actively practiced today. The concept of giving appropriate authority with responsibility is also widely commented on and is well practiced. **(Olum 2004)**.

(2-2): Information System (IS)

For the past twenty years there has been a continual increase in the complexity of IS applications found in the business world (As a point of reference IS is defined as both the technological and human sides of computer technology). Specifically, **(Turban, McLean, and Wetherbe 1999)** define IS as a system represented by a collection of components such as databases, networks, procedures, objectives, and people operating within the context of a set of cultural norms and values (e.g., managerial skills, corporate culture, and organizational structure). The uses of the complete set of IS components have not always been recognized as important in the adoption of IT in organizations. That was supported by **(Benjamin, Rockart, and Wyman 1984)** who suggested that many of the original IS application initiatives were primarily the design of rank and file organizational members. These IS initiatives were often the result of applying available organizational IT technology, with minimal attention paid to broader issues of the non technological components of IS.

This “bubble-up” method of identifying and applying IS solutions was frequently focused on the sub-optimization of internal processes such as accounting or inventory control, opposed to being focused on achieving an organizational wide goal **(Cash and Konsynski 1985); Kettinger, Grover, and Segars, 1994)**.

(Chandler 1982) did suggest that as IS applications evolved over time they would require the use of the broader set of IS components. Chandler's ascertains that changes in IS applications seem to have been correct as many organizations began utilizing all of the IS components, both the technological and human sides, as IS applications evolved from an internal focus to strategic focus for a competitive advantage (CA) (Ang and Pavri, 1994; Cash and Konsynski, 1985; McFarlan, 1984; Sethi and King, 1994; Venkatraman, 1994).

However the quality of system has been recognized by many researchers into organization as key ingredients in developing new scales and measures along with research into organization performance (Delone and Mclean 2003).

System quality:

The growth in the quantity of information, however, has brought problem with the quantity of system, further many organizations struggle to improve their system for organizational memory. Measures of system quality focus on the output produced by a system and the value by user (Wang 2005). Measure of system quality typically focused on performance characteristics of the system, some other researchers have looked at resources utilization and investment (Kribebel and Ravive 1980) while others focused on accuracy, processing, speed, easy access and easy use. (Panigyrakis and chatzipanag 2006).

(Hamilton and Chervany 1981) list the most well known system quality measures response time, data accuracy, reliability, completeness and flexibility.

Some researcher's framework considers "system quality" and "information quality" to be antecedent to effectiveness constructs, whereas the D&M IS Success

Model considers them to be important dimensions of success itself. In summary, the **(Grover et al 1996)** pointed that IS effectiveness framework serves to validate the D&M IS Success Model from a theoretical perspective and suggested an area for extension, namely, market impacts. **(Smithson and Hirschheim 1969)**, proposed a conceptual framework for IS evaluation and demonstrated its usefulness in practice by applying the framework to the evaluation of an outsourcing situation. Their framework presented various theoretical bases for IS evaluation organized into three “zones” of evaluation: efficiency, effectiveness, and understanding.

Appropriate constructs or matrices could be drawn from the literature stream associated with each conceptual base; for example, software matrix, organizational behavior, sociology, cognitive psychology, and so on. This framework includes evaluation areas that overlap the D&M success dimensions, including hardware and software matrix (“system quality”), system usage, user satisfaction, cost benefit analysis, and so on, but also suggests many other theoretical sources of IS evaluation measures. The authors provide a framework that is a source for identifying and developing IS evaluation measures rather than a single framework of success dimensions and their interrelationships (i.e., the D&M IS Success Model). Their framework does not specify actual success constructs and related measures. This makes the framework difficult to apply in practice. However, it does offer the researcher an alternative theoretical framework for developing IS evaluation scheme.

System use:

The system use as an effectiveness variable when system usage is mandatory is flawed even when the required variability in the quality and intensity of this use is likely

to have a significant impact on the realization of the system benefit.(**Delone and Mclean 2003**).

Goodhue suggests that better outcomes i.e. performance, will result when there is a match between the task and the technology that include items to accesses to quality ,currency ,ease of use and response time .(**Goodhue and Thompson 1995**).

(**Seddon 1997**) further argued for the removal of “system use” as a success variable in the causal success model, claiming that use is a behavior, appropriate for inclusion in a process model but not in a causal model. He argued that use must precede impacts and benefits, but it does not cause them. The researcher disagree and believe that system usage is an appropriate measure of success in most cases.

The problem to date has been a too simplistic definition of this complex variable. Simply saying that more use will yield more benefits, without considering the nature of use itself, is clearly insufficient. Researchers must also consider the nature, extent, quality, and appropriateness of the system use. The nature of system use could be addressed by determining whether the full functionality of a system is being used for the intended purposes.(**Young and Benamati 2000**), for example, suggest that full functional use of an e-commerce system should include informational use, transactional use, and customer service use. With regard to the extent of use, (**Lassila and Brancheau 1999**) identify various states of systems utilization based on the use or nonuse of basic and advanced system capabilities. Simply measuring the amount of time a system is used does not properly capture the relationship between usage and the realization of expected results. On the other hand, it can be argued that declining usage may be an important indication that the anticipated benefits are not being realized.

The rejection of system use as a success variable when system usage is mandatory is also flawed for the reasons cited above. Even when use is required, variability in the quality and intensity of this use is likely to have a significant impact on the realization of the system benefits.

Furthermore, no system use is totally mandatory. At some level of the organization, an executive or management committee has chosen THE DELONE AND MCLEAN MODEL OF INFORMATION SYSTEM SUCCESS (**Igbaria et al 1999**). Implemented a system and required employees to use it. Thus, whereas usage of a system may be mandatory at one level, the continued adoption and use of the system itself may be wholly voluntary, based upon management judgment, at a higher level. Management always has the option of discontinuing a system that is not providing the desired results and benefits.

System usage continues to be used as a dependent variable in a number of empirical studies and continues to be developed and tested by IS researchers as (**Glederman 1998, Guimaraes and Igbaria 1997**).

System use has taken on new importance in e-commerce success measurements where customer use is voluntary and essential to desired outcomes (**Ambra and Rice 2001**).

“While most studies that follow D&M replace the Use box with Usefulness . . . , we prefer to maintain use as in the original work. In e-commerce systems Use is largely voluntary” (**Molla and Liker 2001, p.6**).

Several researchers have commented on the difficulty of applying the D&M IS Success Model in order to define and operationalize IS success in specific research

contexts. This was not unexpected: “This success model clearly needs further development and validation before it could serve as a basis for the selection of appropriate IS measures”. (Delone and Mclean 1992, p. 88. Jiang and Klein 1999) found that users prefer different success measures, depending on the type of system being evaluated. Whyte et al. found that “there are important differences deriving from organizational, user, and systems variations which can modify the view as to which attributes (success measures) are important” (Whyte et al 1997, p. 65. Seddon et al. 1999) make an important contribution by proposing a two-dimensional matrix for classifying IS effectiveness measures based on the type of system studied and on the stakeholder in whose interest the IS is being evaluated

(2-3): Organizational performance

Organizational performance is probably the most widely used dependent variable in organizational research today, yet at the same time, it remains one of the most vague and loosely defined constructs. The struggle to establish a meaning for performance has been ongoing for many years, Over thirty years ago, Katz and Kahn dryly commented that, "The existence of the problem of developing satisfactory criteria of organizational performance is clear enough; its solution is much less obvious"(katz and kahn 1966 p150).Within the strategy field, the focus of attention on the performance construct has been almost entirely on financial measures of performance (Rowe et, al 1995).

Conceptually, it has been viewed as the comparison of the value created by a firm with the value owners expected to receive from the firm (Barney, 1995).(Venkatraman and Ramanujam 1986) noted that a narrow definition of performance “...centers on the use of simple outcome-based financial indicators that are

assumed to reflect the fulfillment of the economic goals of the firm,” (1986: 803). They argued that the narrow performance construct of “financial performance” had dominated the strategic management literature, and proposed a broader performance construct of “business performance” that would include both financial and operational (new products, product quality, market share) indicators. In addition, they proposed a construct of “organizational effectiveness” which would consist of business performance plus account for the accomplishment of the super ordinate goals held by multiple stakeholders.

By revising a group of specialized references for authors in the Strategy, Strategic Management, and Organization Theory, the researcher noticed that most authors have focused on the following dimensions of Organizational Performance shown in Table (2-1).

Table (2-1): The dimensions of Organizational Performance as reflected by number of researchers

Dimensions	Researchers	Year
Sales Growth; Profitability; Market share	Nwokah	2008
Sales Growth; Profitability; Market share	O’Sullivan, et al	2007
Growth of sales and revenues; Growth of net income; Return on assets; Return on sales; Growth in productivity	Acquaah	2007
Revenue growth; asset growth; Net income growth; Market share growth	Allen & Helms	2002
Market share; Customer satisfaction; Competitive position; Customer retention; Sales growth; Return on investment	Morgan & Strong	2003

Effectiveness means the achievement of objectives. It is clearly a goal oriented measure (as opposed to a natural systems measure) (Perrow, 1968). Efficiency refers to rates of resource usage in achieving objectives. To balance these two dimensions requires an

examination of assumptions regarding the objectives of the organization in order to make a meaningful assessment of achievement. For example, (**Ostroff & Schmitt 1993**) demonstrated that organizations have different views of performance in part because they view the relative importance of effectiveness and efficiency differently. (**Ostroff & Schmitt 1993 and Steers 1975**) demonstrated that organizations have different goals relating to effectiveness and efficiency measures.

This means that one simple indicator may not be sufficient to measure a broad array of organizations. It would therefore seem reasonable that since different organizations have different goals and objectives with regard to what effective or efficient means. There should be a dynamic mechanism of measurement that is able to account for these differences, managers can look beyond the daily operational details of managing their organization for their corporate productivity to engage in various strategic platform methods and to gain a better understanding of how to link an aspect of SEM with organizational performance(**Reilly 2007**).

Related to the issue of efficiency/effectiveness is the issue of purpose. To clarify organizational performance, it is necessary to consider notions of organizational purpose since outcome evaluation dictates an articulation of purpose. Steers, for example, analyzed 17 models of organizational effectiveness and found that the field was not very effective at measuring effectiveness because researchers for the most part ignored organizational goals. He concluded that "...attempts to measure effectiveness should be made with reference to the operative goals that an organization is pursuing; that is, criterion specification should be flexible enough to account for diversity in goal preferences." (**Steers, 1975,pp 555**).

Purpose is necessary for performance measurement because it is not the simple possession of an attribute (say a high sales volume or low turnover) but the utilization of that attribute toward some end that reflects on performance. A specific utilization implies a purpose or goal toward which the resource can either be used efficiently (and achieve the goal) or used poorly, not used or used for alternatives). For example, a high sales volume could be used to pay high wages or it could be used to increase stockholder returns. Thus having a high sales volume in itself does not necessarily indicate organizational performance.(Huselid & Becker, 1997).

(2-4): Previous Studies

(Oleson ,et al, (1994) under the title “**Operational Information System , an example from the airline industry** ”, describe the commercial opportunities presented by the information system in Delta Airline by examining the system model in order to create additional system on which new business applications can be developed, without jeopardizing already existing system and operation. Results of the research presented the efficient process of capturing transport, and delivery operational data in the wide area environment and creating highly available OIS components, that can offer availability and reliability.

(Martinsons, et al, (1999) under the title “*A foundation for the Strategic Management Of Information System*”. provide an analysis of the framework of IS that measures and evaluates IS activities from the perspectives of business value and internal process, in order to represent a foundation for the strategic management .The authors have observed the implementation of IS in three large companies in Hong Kong .The

evidence from these cases suggested objectives to goals , review performance data and to adjust the strategy as appropriate.

(Markus & Tanis (2000) under the title “*The enterprise System Experience from Adaption To Success*”, provide a theoretical framework for analyzing the business value of the enterprise system ;first, describe the historical context in what enterprise emerged ,then analyzing enterprise system in terms of the concept of success through framework carried out in Quantum organization U.S The framework outlined that enterprise system affect nearly all aspects of organizational life not only at the point of startup but also throughout their operational lives. And this system provides the organization with a common management framework and information repository where the program objectives are stored and can be accessed from a number of different management points.

(Croteau & bergeron (2001) under the title “*An information technology trilogy business, strategy, technological and organizational performance*”, seek to identify various profiles of technological deployment specific to various types of business strategy that best support organizational performance, Using data collected from 223 top managers who completed questionnaire in Canadian firms analyzes using a Miles and Snows typology to characterize business strategy. The results indicated that an outward technology profile contributes directly to organization performance for the analyzers strategic activities. While an inward profile of technological deployment contributes indirectly to organization performance for the prospectors strategic activities.

(Finkelstien (2004) Under the title “*Using enterprise architecture for IS*” attempted to develop and implement enterprise architecture in U.S Bureau of Census ,it included and defined relationship between the Census Bureau operational plan and IS services. The study showed that enterprise architecture serves the management function by providing recourse for strategic planning, and support the decision by documenting reports. At the end continuous improvement is sought.

(Brignall &Ballantine (2004) under the title “*Strategic Enterprise Management system*” described the interrelationships between SEM and organizational performance within Pettigrew model, by using several theories like Institutional theory. The researchers found, by exploring the problems of SEM design ,implementation and use this lead to a richer understanding of management practice and improve interaction between performance measurement and management.

(Frost (2004) under the title “*Trends In Performance Measure*”, analyzed the relation between performance measurement and successful implementation of an organization's strategy in U.K. The questionnaire was devised and addressed the managers sample of 200 company from all manufacturing sectors .The results obtained showed that the improving performance through strategy approach was faster and better decision making at various levels of the organization.

(Buhalis (2004) under the title “*Strategic And Tactical Use Of ICTs in The Airline Industry* ”, examined the role of IT in the U.S airline industry and analyzed the impact on the performance . The study results showed that IT increase the generic strategic and operation management of airline, that will affect the future of the carrier by providing a platform for collaboration that will empower long-term decision.

(Prevas (2005) under the title “*Strategic Management And Business Performance*”, attempted to establish a relationship between planning effort and business performance .The study was based on research conducted by Miller& Cardinal 1994 and Rogers et al 1999. Prevas analyzed different viewpoints and proposed integrated strategic planning .The outcomes of the study indicate that a strategic planning has a positive impact on company performance, and the organizations which practice some of strategic planning will survive, The strategy will only improve performance if its formulation involving organizational factors and external environment.

(Lo (2005) under the title “*Information System In The Enterprise Strategic*”, was to stimulate theoretical and empirical research in the U.S. marketing offices, this research proposed that there is a different kind of information system to support decisions-making. This system includes a focus on how strategies are made at different levels of organization including planning and managing recourses .The study confirms that the systems are critical to firms because the better information gives the corporation a competitive advantage in the market place by maximizing its strengths. These firms can use system to create a unique service that can easily distinguish it from other competitors.

(Merier (2006) under the title “*Strategic Management And Performance Of Public Organization*”, this study applied to public organization in United Kingdom, divided the strategic actors into four general types: prospectors, defender, analyzers, reactors .This study shows that strategy content is a subset of generally accepted management functions in a large, multitier sample of public organizations. The results indicated that the defender strategy was the most effective for the primary mission of

the organization while the prospector and reactor strategies work best regarding the goals of the more politically powerful elements of the organization's environment.

(Ramezan.(2006) under the title "*Measuring The Effectiveness Of Human Recourse Information System In National Iranian Company* ", attempted to empirically assess the effectiveness of integrated information system in four Iranian oil industries. Ramezan examined IS effectiveness through assessing user satisfaction about system quality and system use by Delone and Mclean model, in order to explore end user satisfaction. The results of survey showed that the user satisfaction from information quality and system use have high IS effectiveness measurement.

(Sharma,et al,(2009) under the title "*Strategic Management of The Family Business*", described the strategic management process by reviewing 204 family businesses in Canada, and presented the framework of strategic management as focused on improving performance .The main conclusion recommended that goals must be selected, strategies be formulated to achieve those goals, and implement the strategy. Furthermore, at all stages it was necessary to select and evaluate alternatives, make decisions, and ensure that effective control processes were in place in order to make adjustments where needed.

(Crowston & Treacy (2010) under the title "*The Impact Of Information System On Enterprise Level Performance*", reviewed researches that had been conducted on IS impact on enterprise level performance with a particular emphasis on the research that had attempted to measure level of impact, and on surveys of articles published within the last ten years. Finding of this paper focused on IS as strategic tools, and IS can have impact on industry structure by altering the production efficiencies and transaction cost of market.

(Parast (2010) under the title “*The Effect Of Strategic Management In U.S Airline Industry, An Empirical Investigation*”, aims to investigate the effect of strategic management on performance in the U.S airline industry. The survey showed that management process is the most significant predictor of performance, and employee satisfaction was the main source of performance in the U.S airline industry.

Chapter 3

Method and Procedures

- 3.1** *Introduction*
- 3.2** *Study Methodology*
- 3.3** *Study Population and Sample*
- 3.4** *Study Tools and Data Collection*
- 3.5** *Statistical Treatment*
- 3.6** *Reliability and Validity*

(3-1): Introduction

This chapter is divided into the following Six sections: Study Methodology; Study Population and Sample; Study Tools and Data Collection; Statistical Treatment; Reliability and Validity

(3-2): Study Methodology

This is an analytical and descriptive study of RJ airline; a descriptive research which involves collecting data in order to test hypotheses or to answer questions concerning the current status of the subjects of a study.

Typical analytical studies are concerned with the assessment of attitudes, opinions, demographic information, conditions, and procedures. The research chosen instrument for the study is a questionnaire which attempts to collect data from members of a population in order to determine the current status of that population with respect to each variable.

(3-3): Study Population and Sample

The population of this study consists of all employees of Royal Jordanian in Amman offices. The focus was on 200 managers, directors and heads of departments employed by the Royal Jordanian (**Royal Jordanian Documents**).

Table (3 – 1)

Numbers of target employee

Title	NO.
Manager	140
Director	48
Head of Department	12
Total	200

(200) questionnaires were distributed as a sample of the study, only (182) questionnaires were collected, also (10) of the returned questionnaires removed because it was not comfortable with statistical analysis. So the number of questionnaires took in analysis equal to (172), this means that approximately (85%) from total distributed questionnaires enter in the analysis.

(3-4): Study Tools and Data Collection

The current study consists of three Variables, theoretical and practical. In the theoretical dimensions the researcher depended on the scientific studies thoughts that are related to the current study. Whereas, in the practical side the researcher depend on descriptive and analytical methods using the practical manner to collect, analyze data and test hypothesis.

The data collection, manners of analysis and programs used in the current study are based on two sources:

1. Primary source: the questionnaire that was designed to reflect the study objectives and questions.
2. Secondary sources: books, journals, articles thesis to write the theoretical framework of the study.

In this study, both primary and secondary data were used. Data for the model collected via questionnaire .After conducting a thorough review of the literature pertaining to Bottlenecks in Operations Management, the researcher formulated the questionnaire instrument for this study.

The questionnaire instrument sections are as follows:

Demographic Variables: The demographic information was collected with closed-ended questions, through (5) variables.

Cause & Effect Factors: This section measured the Cause and effect factors of three variables such as; Strategic Enterprise Management (SEM) thorough (21) items, Information System (IS) through (16) items and Organizational Performance through (6) measures and all items measured on a Likert-type scale, as shown belows:

Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1	2	3	4	5

(3-5): Statistical Treatment

Data from the returned responses were collected for the analysis and conclusions of the study questions. The researcher used the Statistical Package for the Social Sciences SPSS and AMOS Package. Finally, the researcher used the suitable Statistical methods that consist of:

- Cronbach Alpha (α) to test Reliability.
- Percentage and Frequency.
- Arithmetic Mean and Standard Deviation to answer the study questions.
- Simple Liner Regression analysis to test first three hypotheses, with (F) test statistic from ANOVA table.
- Multiple regression and variance inflection factor as the assumption to apply path analysis to identify direct and indirect effect between study variables.
- Relative importance, that assigning due to:

$$\text{Class Interval} = \frac{\text{Maximum Class} - \text{Minimum Class}}{\text{Number of Levels}}$$

$$\text{Class Interval} = \frac{5 - 1}{3} = \frac{4}{3} = 1.33$$

The following Table (3 – 2) shows how the range of number of levels was computed

Table (3 – 2)

Range of Level of Importance Scale

Mean Range	level
Less than 2.33	Low
2.33-3.66	Mid
3,67 and above	High

(3-6): Reliability and Validity

A) Validation

To test the questionnaire for clarity and to provide a coherent research questionnaire, a macro review covers all the research constructs was accurately performed by academic reviewers-from Jordanian universities- specialized in management information systems, Total Quality Management; Production and Operation Management, and Statistical science. Some items were added based on their valuable recommendations .Some others were reformulated to become more accurate to enhance the research instrument. The academic reviewer's amount (3), (see appendix "89").

B) Study Tool of Reliability

The reliability analysis applied the level of Cronbach Alpha (α) as the criteria of internal consistency, which were at a minimum acceptable level (**Alpha \geq 0.60**) suggested by (**Sekaran, 2003**). The coefficients were computed after removing some items from each construct as in Table (3 - 3).

Table (3 - 3)

Cronbach Alpha Coefficients for Main Dimensions and Constructs

No.	Dimension	Variables	Coefficient
	Strategic Enterprise Management	Business process	0.80
		Management function	0.93
	Information System	System Quality	0.82
		System Use	0.91
	Organizational Performance	Effectiveness	0.80
		Efficiency	0.89

Chapter 4

Results and Hypothesis Testing

- 4.1 Introduction**
- 4.2 Study Questions Answers**
- 4.3 Study Hypothesis Testing**

(4-1): Introduction

According to the research purpose and research framework presented in previous chapters, this chapter describes the results of the distribution of responses for each demographic variable , statistical analysis of the data collected for the research question and research hypothesis.

The data analysis included a description of the means and standard deviations, ranking and level of importance for study questions .Simple and multiple regression analysis is used to test the first three hypotheses.

(4-2): Study Questions Answers

A. Demographic Variables of Sample

Eight demographic variables are included in this study (Gender , Current position , Number of years in the company , Number of years in the position and Education level .The results in Table (4 – 1) represent distribution of sample individuals according to demographic variables:

Table (4 -1)

Distribution of Sample individuals according to demographic Variables

Variable	Frequency	Percent %
Gender		
Male	117	68,0
Female	55	32,0
Current Position		
Head of Department	10	5,8
Director	42	24,4
Manager	120	69,8
Number of years in the company		
5-10	60	34,9
11-15	21	12,2
16-20	46	26,7
21 and above	45	26,2
Number of years in the Position		
5-10	84	48,8
11-15	58	33,7
16-20	23	13,4
21 and above	7	4,1
Education Level		
BS .C	91	52,9
High diploma	35	20,3
Master	34	18,8
PhD	12	7,0
Total	172	100%

Result in Table (4 - 1) indicated that there were (117) of respondents (68 %) of sample were "Male" while the reminders were "Female ". The largest number of responses had "from 5 – 10 years in the company "with (34,9%) as a percentage ,while (21) of them had years " from 11 – 15 years".Also (48,8%) of responses, were their position from 5-10 years ,while (7) response (4.14) of them serve 21 years and above.

The other variable is " Current Position ", divided into (3) class as in above table results, more than half of responses are Managers , exactly (120)responses made a percentage (68,8%) , while only two of sample responses are Heads and Directors .

The last demographic (52,9 %) of sample have an "Educational Level" of " BS.c", this percentage made this class the highest in educational level demographic variable and the smallest one was the class where the sample response have " PHD " with percentage equal to (7,0 %).

B. Descriptive Variables

This section illustrates the descriptive statistics for each variable and its item as Mean and standard deviation, beside the rank and the level of importance.

1. Strategic Enterprise Management:

Main dimension Strategic Enterprise Management (SEM) .The descriptive statistics of this dimension and the items belong to it in the Table (4-2).

Table (4 - 2): Descriptive statistics of Strategic Enterprise Management in Royal Jordanian in Descending Order

Rank	Strategic Enterprise Management	Mean	Std. Deviation	Degree
1	Business Process	3.18	1.32	Medium
2	Management Function	3.16	1.40	Medium
	Total	3.17	1.36	Medium

As shown in (4-2) Table above that the Strategic Enterprise Management on the average arithmetic total amount of (3.17), a mid-level, and recognize the importance of the dimensions of the axis, in the first place Business Processes where the arithmetic average (3.18), and a standard deviation (1.32) a Medium -Level, and in second place came Management Function arithmetic average was (3.16) and a standard deviation (1.40), also from the Medium Level.

This explains that the Strategic Enterprise Management is in the Medium level in the Royal Jordanian Airlines. And to identify the members of the study sample responses from the axis (Business Process) Means and standard deviations have been extracted to identify the importance of the levels, as shown in Table (4-3).

Table (4 - 3):

Means and standard deviations to identify the importance of Business Processes in Royal Jordanian Airline in Descending Order

Rank	Business Processes	Mean	Std. Deviation	Degree
2	RJ Business Process leads to progress report that draws ideas to support leader's decision.	3.39	2.62	High
6	RJ is using many processes that are inefficiently costly.	3.35	0.96	High
9	Business process generally involves a large amount of manual filling tasks.	3.31	1.07	Medium
8	I take time to deliver desired output.	3.27	1.06	Medium
5	I use effective business process to cascading initiatives throughout the entire workforce.	3.23	1.19	Medium
7	Inefficient processes generally lead to increasing cost concerning RJ.	3.18	1.39	Medium
1	Rj business Process results in progress reports that help leaders to evaluate performance.	3.17	1.30	Medium
10	A large number of people involved at various activities of business process	3.16	1.05	Medium
3	I develop business process to ensure that we have the knowledge and skills to take action.	3.04	1.54	Medium
4	I don't communicate quickly and transparently to accurately track the business metrics	2.73	1.05	Medium
	Total	3.18	1.32	Medium

Table no. (4-3) clarifies the level of importance of (Business Processes), ranges between (3.39 – 2.73), compared with total amount of (3.18) level medium; which is observed that the high mean to item (RJ Business Process leads to progress report that draw ideas to support leaders decision), with mean of (3.39), and a standard deviation (2.62) from the researcher point view this because of the leaders added opportunities for significant step change improvement, and in the second place came paragraph (6) with a mean of (3.35) and a standard deviation (0.96), which is high due to corporate retention policies.

While the lowest mean was to item (I don't communicate quickly and transparently to accurately track the business metrics), with average (2.73), and a standard deviation (1.05), which is medium level.

In general the Business process in Royal Jordanian Airline is with a medium level. And to identify the members of the study sample responses from the axis (Management Function) has been extracted Means and standard deviations to identify the importance of the levels, and the Table (4-4) shows that.

Table (4-4)
Means and standard deviations to identify the importance of Management function in
Royal Jordanian Airline in Descending Order

Rank	Management Function	Mean	Std. Deviation	Degree
19	I decide to beef up my staff by training and developing program.	3.31	1.42	Medium
17	I decide which steps are necessary to accomplish the goal of improving company performance.	3.27	1.43	Medium
12	I generally identify the new ideas to my fellow employees' creativity.	3.26	1.35	Medium
21	I always review work assignments before their announcement.	3.20	1.47	Medium
11	Frequently i initiate improvement projects to increase performance effectiveness.	3.19	1.24	Medium
14	I make certain to set schedules and determine priorities of business processes.	3.19	1.29	Medium
15	I always transmit information to others via reports, memos and speeches.	3.19	1.38	Medium
16	I act effectively to take corrective action in case of disputes or crises and conflicts.	3.13	1.61	Medium
20	I make sure that my plans remain on track by follow them up.	3.11	1.61	Medium
18	I organize teams and material according to operative plan.	3.05	1.53	Medium
13	I don't delegate authorities to my followers to increase effectiveness.	2.85	1.07	Medium
	Total	3.16	1.40	Medium

It is clear from Table (4-4) that weight means to this axis (Management function), range between (3.31 – 2.85), compared with total amount of (3.16), which is a medium level ; it is observed that the highest mean to item(I decide to beef up my staff by training and developing program), with a mean of (3.31), and with a standard deviation of (1.42), which is a medium level, where the item(I decide which steps are necessary to accomplish the goal of improving company performance). with mean (3.27) and a standard deviation (1.43).

Similar to the item (I don't delegate authorities to my followers to increase effectiveness),which takes the lowest mean with average (2.85), and a standard deviation (1.07), which is medium level.This explains that Management function in Royal Jordanian Airline with a medium level.

2. Information System

The second main dimension is Information System (IS) .The descriptive statistics of this dimension and the items belonging to it are shown in Table (4-5).

Table (4 - 5): Descriptive statistics of Information System in Royal Jordanian in
Descending Order

Rank	Information System	Mean	Std. Deviation	Degree
1	System quality	3.21	1.05	Medium
2	System use	3.21	1.16	Medium
	Total	3.21	1.11	Medium

It is clear from Table (4-5) that the Information System has a mean of (3.21), Medium-level, and to identify the importance of the dimensions of the axis, the researcher uses the mean and standard deviation. Table (4-5) clarifies the same mean of System Quality and System use with (3.21), compared with standard deviation (1.05) to System quality and (1.16) to System use.

This shows that the Information System is with medium level in Royal Jordanian Airlines. Table (4-6) identifies the members of the study sample responses from the axis (System quality) using arithmetic Means and standard deviations to show the levels of importance.

Table (4-6)

Means and standard deviations to identify the importance of System quality in Royal

Jordanian Airline in Descending Order

Rank	System Quality	Mean	Std. Deviation	Degree
23	RJ use changeability in system condition to influence performance effectiveness.	3.47	0.85	High
24	Integrated reports are considered important for performance effectiveness at RJ.	3.47	1.06	High
29	I have accomplished high productivity improvement when using system.	3.34	1.08	Medium
22	RJ has limitation of unauthorized access.	3.22	0.99	Medium
28	I have an easy task in using quality system.	3.17	1.18	Medium
27	I have clear and understandable interaction with system.	3.16	1.14	Medium
26	RJ employees assume flexible interaction with quality system.	3.08	0.96	Medium
25	RJ doesn't have precautionary methods to prevent program interruption.	2.75	1.17	Medium
	Total	3.22	0.99	Medium

It's clear from Table (4-6) that weight mean of (System quality), range between

(3.47 – 2.75), with total of (3.22), where item (RJ use changeability in system condition to influence performance effectiveness, Integrated reports are considered important for performance effectiveness at RJ.) got the highest mean of (3.47), due to rapidly responding to changing in system condition, where the item(I have accomplished high productivity improvement when using system) which ranked second place with a mean of (3.34) and a standard deviation of (1.08).

While the lowest mean was to (RJ doesn't have precautionary methods to prevent program interruption) with average (2.75), standard deviation (1.17) .This shows that System quality in Royal Jordanian Airline with a medium level.

And to identify the members of the study sample that response the researcher used means and standard deviations. Table (4-7) shows the level of importance:

Table (4-7)

Means and standard deviations to identify the importance of System use in Royal
Jordanian Airline in Descending Order

Rank	System use	Mean	Std. Deviation	Degree
32	I evaluate general information system to encounter any possible problems.	3.47	1.03	High
35	I always use the information system to achieve company goals.	3.41	1.08	High
36	I use the information system to deliver the service in accordance with given promises.	3.30	1.01	Medium
34	I generally use the information system to improve job performance.	3.25	1.20	Medium
31	I consult information system auditors for more detailed analyses.	3.22	1.16	Medium
30	I participate in the evaluation of information system from the point of management needs.	3.16	1.25	Medium
33	I always try to keep the integration of information system under control.	3.03	1.43	Medium
37	I don't use the information system to do things quickly in response to demands.	2.81	1.12	Medium
	Total	3.21	1.16	Medium

It's clear from Table (4-7) that weight mean of (System Use), ranges between (3.47 – 2.81), compared with total amount of (3.21), which is medium level, where the highest mean was to (I evaluate general information system to encounter any possible problems), with mean (3.47), and standard deviation (1.03), which a level of high due

to automate the tasks and providing a centralized system for all this content.

While the lowest was to (I don't use the information system to do things quickly in response to demands) with average (2.81), and standard deviation (1.12), which is medium level. This explains that System use in Royal Jordanian Airline is of medium level.

2. Organizational performance

The third main dimension Organizational Performance (OP) .The descriptive statistics of this dimension and its items are shown in Table (4-8).

Table (4 - 8):

Descriptive statistics of Organizational Performance in Royal Jordanian in Descending Order

Rank	Organizational Performance	Mean	Std. Deviation	Degree
1	Effectiveness	3.23	1.09	Medium
2	Efficiency	3.15	1.22	Medium
	Total	3.19	1.16	Medium

It is clear from Table (4-8) that the organizational Performance has a mean (3.19), and to identify the importance of the dimensions, it is reported in the first place Effectiveness with arithmetic Mean (3.23), and standard deviation (1.09) with degree of medium level. While in second place came Efficiency with a mean of (3.15) and a standard deviation (1.22), also a medium –level.

This explains that the performance in Royal Jordanian Airlines is of a medium

degree. And to identify the members of the study sample responses from the axis (Effectiveness) the researcher has used Means and standard deviations to clarify the importance of the levels, as shown in Table (4-9) .

Table (4-9)

Means and standard deviations to identify the importance of Effectiveness in Royal Jordanian Airline in Descending Order

Rank	Effectiveness	Mean	Std. Deviation	Degree
39	My company regularly gathers different information from operating management for planning and feedback.	3.26	1.07	Medium
40	We are planning the information based enterprises in an integrated way whereby all stages of the life cycle are engaged to bring out agility, quality and productivity.	3.23	1.03	Medium
38	IS facilitates decision making among management units to support company objectives.	3.19	1.18	Medium
	Total	3.23	1.09	Medium

It is clear from Table (4-9) that weight mean of (Effectiveness), ranges between (3.26 – 3.19), compared with total amount of (3.23), that also observed the medium level .the highest was to item (My company regularly gathers different information from

operating management for planning and feedback)with a mean (3.26), and a standard deviation of (1.07).

While the lowest mean was to(IS facilitates decision making among management units to support company objectives), with average (3.19), and standard deviation (1.18), which is medium level. And to identify the members of the study sample responses from the axis (Efficiency) researcher has used Means and standard deviations to show the levels of importance, and the Table (4-10) Shows that:

Table (4-10)

Means and standard deviations to identify the importance of Efficiency in Royal
Jordanian Airline in Descending Order

Rank	Efficiency	Mean	Std. Deviation	Degree
41	In order to improve quality and reduce cost, my company has established an information system for management function.	3.29	1.06	Medium
42	In order to promote service quality, my company prepares the necessary budget to purchase appropriate software and hardware annually.	3.09	1.32	Medium
43	We study business and competitive environment to define strategic information needs to provide techniques for building enterprise data and process models.	3.08	1.29	Medium
	Total	3.15	1.22	Medium

It is clear from Table (4-10) that weight mean to this axis (Efficiency), ranges between (3.29 – 3.08), compared with total amount of (3.15), which is a medium level, the highest mean was to(In order to improve quality and reduce cost, my company has established an information system for management function),with (3.29) mean, and with standard deviation (1.06), which is also of Medium level, while the lowest mean (3.08) to item(We study business and competitive environment to define strategic information needs to provide techniques for building enterprise data and process models), and a

standard deviation (1.09). This explains that Efficiency in Royal Jordanian Airline is of medium level.

(4-3): Study Hypotheses Testing

Study Hypotheses

Based on the study problems and the literature review, four hypotheses were tested in this study. The researcher used Statistical Package for Social Sciences (SPSS) to test the first three hypotheses and Analysis of Moment Structures (AMOS) to test the three hypothesis. Many statistical criteria have been taken into analysis as simple and multiple regression , F – test for estimated equations significance , t – test for effect significance of independent variable (ID) on dependent variable (DV) and coefficient of determination (R^2) to know how the ID explains the variation in DV.

The following are the main research hypotheses examined:

H₀₁: "There is no statistically significant effect of SEM characteristics on Airline Performance on Royal Jordanian Company at level (0.05)"

To analyze the first hypothesis , the researcher used multiple regressions to identify the effect of the Strategic Enterprise Management and Airline Performance in the Royal Jordanian Airline and Table (4-11) shows that

Table (4-11)

Stepwise Multiple Regression test to identify the effect of the Strategic Enterprise Management and Airline Performance in the Royal Jordanian Airline

<i>Order of entry of independent elements in the equation to predict</i>	<i>R²</i>	<i>(F) Value</i>	<i>T Calculated*as testing for parameter</i>	<i>Sig</i>
Management Function	0.695	385.152	6.515	0.000
Business process	0.715	210.755	3.433	0.001

*significant if sig \leq 0.05

When the study made a Stepwise Multiple Regression to determine the importance of each independent variable separately in contributing to the mathematical model that represents the impact of Strategic Enterprise Management Axis's (Business Process and Management function) on Airline Performance, as shown in table No. (4-11), which shows the order of entry independent variables in the regression equation, the variable Management Function has occupied the first place with amount (69.5%) of the variance dependent variable, while the Management function was (71.5%) of the variance in the dependent variable.

H01: There is no significant effect of business process on performance effectiveness of RJ at level (0.05)

To analyze the first sub-hypothesis, the researcher used simple regression to identify the effect of business process on performance effectiveness and the Table (4-12) shows that:

Table (4-12)

Simple regression to identify the effect of business process on performance effectiveness

R	R²	Beta	(F) value	DF	Sign
0.770	0.593	0.770	247.570	171	0.000

Table (4-12) shows that the (F) value was (247.570) at the level of significance (0.000) which is less than (0.05). The result rejects null hypothesis, and accepted alternative hypothesis: **There is significant effect of business process on performance effectiveness of RJ at level (0.05)**, and seen from the table (4-12) which is the Business Process effect on Performance Effectiveness rate (59.3%)

H02: There is no significant effect of business process on performance efficiency of RJ at level (0.05)

To analyze the second sub-hypothesis the researcher used simple regression to identify the effect of business process on performance efficiency and Table (4-13) shows that:

Table (4-13)

Simple regression to identify the effect of business process on performance efficiency

R	R²	Beta	(F) value	DF	Sign
0.703	0.494	0.703	165.275	171	0.000

It is clear from Table (4-13) that the (F) value was (165.275) at the level of significance (0.000) which is less than (0.05); the result rejects null hypothesis, and

accepted alternative hypothesis: **There is significant effect of business process on performance efficiency of RJ at level (0.05)**, and seen from Table (4-13) which is the Business Process effect on Performance efficiency rate (49.4%).

H03: There is no significant effect of Management function on performance effectiveness of RJ at level (0.05)

To analyze the third sub-hypothesis, the researcher used simple regression to identify the effect of Management function on performance effectiveness and the table (4-14) showing that?

Table (4-14)

Simple regression to identify the effect of Management function on performance effectiveness

R	R²	Beta	(F) value	DF	Sign
0.810	0.656	0.810	324.089	171	0.000

It is clear from Table (4-14) that the (F) value was (324.089) at the level of significance (0.000) which is less than (0.05), the result rejects null hypothesis, and accepted alternative hypothesis: **There is significant effect of Management function on performance effectiveness of RJ at level (0.05)**, and seen from Table (4-14) which is the Management function effect on Performance Effectiveness rate (65.6%).

H04: There is no significant effect of Management function on performance efficiency of RJ at level (0.05)

To analysis the fourth sub-hypothesis was tested using simple regression to identify the effect of Management function on performance efficiency and Table (4-15) shows that.

Table (4-15)

Simple regression to identify the effect of Management function on performance efficiency

R	R²	Beta	(F) value	DF	Sign
0.780	0.608	0.780	262.042	171	0.000

It is clear from Table (4-15) that the (F) value was (262.042) at the level of significance (0.000) which is less than (0.05), the result rejects null hypothesis, and accepts alternative hypothesis: **There is no significant effect of Management function on performance efficiency of RJ at level (0.05)**, and seen from the table (4-15) which is the Management function effect on Performance Efficiency rate (60.8%).

HO2: There is no statistically significant effect of IS characteristics on Airline Performance on Royal Jordanian Company at level (0.05)

To analyze the second hypothesis, the researcher used multiple regressions to identify the effect of the Information System and Airline Performance in the Royal Jordanian Airline and Table (4-16) shows that

Table (4-16)

Stepwise Multiple Regression Test to identify the effect of the Information System on
Airline Performance in the Royal Jordanian Airline

<i>Order of entry of independent elements in the equation to predict</i>	<i>R²</i>	<i>(F) Value</i>	<i>T Calculated* As testing for parameter</i>	<i>Sig</i>
System Quality	0.675	350.510	7.798	0.000
System Use	0.729	225.954	5.802	0.000

*significant if sig \leq 0.05

When the study made a Stepwise Multiple Regression to determine the importance of each independent variable separately in contributing to the mathematical model that represents the impact of Information System Axis's (system quality and system use) on Airline Performance, as shown in table No. (4-16), which shows the order of entry independent variables in the regression equation, the variable System quality has occupied the first place with amount of (67.5%), while the system use was (72.9%) of the variance in the dependent variable.

H01: There is no significant effect of system quality on performance effectiveness of RJ at level (0.05)

To analyze the first sub-hypothesis, the researcher used simple regression to identify the effect of system quality on performance effectiveness and Table (4-17) shows that:

Table (4-17)

Simple regression to identify the effect of system quality on performance effectiveness

R	R²	Beta	(F) value	DF	Sign
0.648	0.420	0.648	122.81	171	0.000

It is clear from Table (4-17) that the (F) value was (122.81) the level of significance (0.000) which is less than (0.05), the result rejects null hypothesis, and accepts alternative hypothesis: **There is significant effect of system quality on performance effectiveness of RJ at level (0.05)**, and seen from the table (4-17) which is the System quality effect on Performance Effectiveness rate (42%).

H02: There is no significant effect of system quality on performance Efficiency of RJ at level (0.05)

To analyze the second sub-hypothesis, the researcher used simple regression to identify the effect of system quality on performance efficiency and Table (4-18) shows that:

Table (4-18)

Simple regression to identify the effect of system quality on performance efficiency

R	R²	Beta	(F) value	DF	Sign
0.777	0.604	0.777	258.164	171	0.000

It is clear from Table (4-18) that the (F) value was (258.164) the level of significance (0.000) which is less than (0.05), the result rejects null hypothesis, and accepts alternative hypothesis: **There is significant effect of system quality on performance efficiency of RJ at level (0.05)**, and seen from Table (4-18) which is the System quality effect on Performance efficiency rate (60.4%).

H03: There is no significant effect of system use on performance effectiveness of RJ at level (0.05)

To analyze of the third sub-hypothesis, the researcher used simple regression to identify the effect of system use on performance effectiveness and Table (4-19) shows that:

Table (4-19)

Simple regression to identify the effect of system use on performance effectiveness

R	R²	Beta	(F) value	DF	Sign
0.727	0.528	0.727	190.205	171	0.000

It is clear from Table (4-19) that the (F) value was (190.205) the level of significance (0.000) which is less than (0.05), the result rejects null hypothesis, and accepts alternative hypothesis: **There is significant effect of system use on performance effectiveness of RJ at level (0.05)**, and seen from Table (4-19) which is the System use effect on Performance Effectiveness rate (52.8%).

H04: There is no significant effect of system use on performance Efficiency of RJ at level (0.05)

To analyze the fourth sub-hypothesis researcher used simple regression to identify the effect of system use on performance efficiency and Table (4-20) shows that:

Table (4-20)

Simple regression to identify the effect of system use on performance efficiency

R	R²	Beta	(F) value	DF	Sign
0.588	0.346	0.588	89.310	171	0.000

It is clear from Table (4-20) that the (F) value was (89.310) the level of significance (0.000) which is less than (0.05), the result rejects null hypothesis, and accepts alternative hypothesis: **There is significant effect of system use on**

performance efficiency of RJ at level (0.05), as seen from Table (4-20) which is the System use effect on Performance efficiency rate (34.6%).

HO3: There is no statistically significant effect of IS characteristics and SEM Characteristics together on organizational performance on Royal Jordanian company at level (0.05).

H01: There is no significant effect of IS characteristics and SEM characteristics on performance effectiveness of RJ at level (0.05)

To analyze the first sub hypothesis, the researcher used multiple regressions to identify the effect of the Information System and Strategic Enterprise Management on Performance Effectiveness in the Royal Jordanian Airline and Table (4-21) shows that

Table (4-21)

Stepwise Multiple Regression Test to identify the effect of the Information System and Strategic Enterprise Management on Performance Effectiveness in the Royal Jordanian Airline

<i>Order of entry of independent elements in the equation to predict</i>	<i>R²</i>	<i>(F) Value</i>	<i>T Calculated* As testing for parameter</i>	<i>Sig</i>
Management function	0.656	324.089	3.183	0.002
Business Process	0.685	184.039	3.918	0.000
System quality	0.705	133.761	3.137	0.002
System use	0.714	104.468	2.366	0.019

*significant if sig \leq 0.05

When the study made Stepwise Multiple Regression to determine the importance of each independent variable separately in contributing to the mathematical model that represents the effect of Information System and Strategic Enterprise Management Axis's (Business process and Management function and System quality and System use) on the Performance Effectiveness, as evidenced from table (4-22), shows the order of entry of independent variables in the regression equation. The variable Management function has occupied the first place and explained with amount (65.6%) of the variance in the dependent variable, and entered the variable Business process in the equation as explained with Management function (68.5%) of the

variance in the dependent variable. The income variable in the equation System quality as interpreted with the former two variables accounted for (70.5%), and the income variable to explain the system use with the three variables were (71.4%) in the dependent variable.

H02: There is no significant effect of IS characteristics and SEM characteristics on performance efficiency of RJ at level (0.05)

To analyze the second sub hypothesis, the researcher used multiple regressions to identify the effect of the Information System and Strategic Enterprise Management on Performance Efficiency in the Royal Jordanian Airline and Table (4-22) shows that

Table (4-22)

Stepwise Multiple Regression Test to identify the effect of the Information System and Strategic Enterprise Management on Performance Efficiency in the Royal Jordanian Airline

<i>Order of entry of independent elements in the equation to predict</i>	<i>R²</i>	<i>(F) Value</i>	<i>T Calculated* As testing for parameter</i>	<i>Sig</i>
Management function	0.608	262.042	4.065	0.000
System quality	0.671	170.989	5.022	0.000
System use	0.680	118.504	2.265	0.025

*significant if sig ≤ 0.05

when the study made a Stepwise Multiple Regression to determine the importance of each independent variable separately in contributing to the mathematical model that represents the effect of Information System and Strategic Enterprise Management dimensions (Business process and Management function and System quality and System use) on the Performance Effectiveness, as evidenced from table (4-23), which shows the order of entry of independent variables in the regression equation, the variable Management function has occupied the first place and explained what amount (60.8%) of the variance in the dependent variable, and entered the variable system quality in the equation as explained with Management function (67.1%) of the variance in the dependent variable. The income variable in the System use the equation with two variables interpreted as representing the former (68%), in the dependent variable, And came out of the equation Business Process variable due to the lack of statistically significant differences between it and the dependent variable.

Chapter 5

Results Analysis & Recommendation

5.1 *Results Analysis*

5.2 *Recommendations*

(5-1): Results and Conclusions

The current study raised set of a questions, and construct hypotheses related to the positive effects between study variables. The study reached to many results that can contribute to solve the study problem, answering the study questions and its hypotheses. The main results are:

- 1- The importance level of **Strategic Enterprise Management** in Royal Jordanian Company was medium.
- 2- The importance level of **Information System** in Royal Jordanian Company was medium.
- 3- The importance level of **Organizational Performance** in Royal Jordanian Company was medium.
- 4- The importance level of **Business Process** in Royal Jordanian Company was medium (3.18).
- 5- The importance level of **Management Function** in Royal Jordanian Company was medium (3.16).
- 6- The importance level of **System Quality** in Royal Jordanian Company was medium (3.22).
- 7- The importance level of **System Use** in Royal Jordanian Company was medium (3.21).
- 8- The importance level of **Effectiveness** in Royal Jordanian Company was medium (3.23).

- 9- The importance level of **Efficiency** in Royal Jordanian Company was medium (3.15).
- 10- There is a significant effect of **SEM** characteristics on Organizational Performance on Royal Jordanian Company at level (0.05)
- 11- There is a significant effect of **IS** characteristics on Organizational Performance on Royal Jordanian Company at level (0.05).
- 12- There is a significant effect of **IS** characteristics and **SEM** Characteristics together on organizational performance on Royal Jordanian company at level (0.05).

From above results, the important conclusions are:

- 1- Information System got the highest effect on performance, and this improves the important level of system quality and system use ,which in turn affects organizational performance either effectiveness or efficiency.
- 2- As management function got the lowest scores, it is concluded that it needs more attention from management and tools need to be suggested.
- 3- Although the system quality and system use occupy a significant level in Royal Jordanian, clarity about what to be really performed is not totally satisfactory.
- 4- Business process that supports leader's decision is the most important factor for Royal Jordanian, however they need more attention in terms of career path and progression plans.
- 5- The role of SEM and IS in Efficiency and in turns its influence on performance in RJ needs More attention in terms of how to provide techniques for building enterprise data and process models.
- 6- Evaluating information appeared as high important information system for RJ; however results showed that managers still lack integrated enterprise whereby all stages of life cycle are engaged to bring out agility , quality and productivity.

(5-2): Recommendation

Due to the results, the researcher advice some of recommendation as:

- 4- Management in Royal Jordanian Company needs to clarify the strategies to achieve company's objectives that are derived from its vision, Rather it is recommended for the management to work with the direction team (Board) while creating the goals and strategies. The best way to lead people into the future is to connect them deeply with the present.
- 5- Managers in Royal Jordanian Company should consider increasing efficient processes and team work by training and developing programs, opening the cross functional lines for better productive involvement and brain storming.
- 6- It is highly emphasized that the ability of the operation system of Royal Jordanian Company to rapidly respond to changing in system condition is the most important tool in creating a flexible interaction. This can be achieved by two main strategies: evaluate the information system from the point of management needs and to use the information system to achieve company goals.
- 7- Focusing on the business processes that produce unique elements in terms of high level of business metrics provide the firm with techniques for building enterprise data and models to distinguish the position in the market place.
- 8- Information System has significant impact on Organizational Performance in order to facilitate decision making among management units that will enhance energy in a company to work one hand-one team toward achieving its objectives.

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Appendix (1)

Names of jury

No	NAME	Specialization	Work Place
1	Dr.Mahmood Bader Alobidi	Business Administration	Al-Zaytoonah University
2	Dr.Najim A.Alazzawi	Business Administration	Al-Petra University
3	Dr.Sabah H.Agha	Business Administration	Al-Petra University

Appendix (2)

Questionnaire of the Study



Greetings, and yet ...

I hope that you will kindly fill- questionnaire, which aims to study by the researcher Muna Hawa;

"The Effect of Strategic Enterprise management (SEM) and Information System (IS) on Organizational Performance"

And I appreciate your cooperation, and I would like to confirm that any data or information that you provide will be kept strictly confidential and will be used for research purposes only. You were selected to answer the attached Questionnaire. Please read it thoroughly, and then answer it precisely, bearing in mind that the results of this study will be used for scientific research only.

Accept my sincere respect and appreciation...

Prepared by

Dr. Kamel Moghrabi

Supervised by

Muna hawa

Part (1): Demography Information

(1) _ Gender

Male *Female*

(2) _ Current position

Head of Department *Director*

Manager

(3) _ Number of years in the company

5-10 *11-15*

16-20 *21 and above*

(4) _ Number of years in the position

1-5 *6-10*

11-15 *16 and above*

(5) _ Education level

BSc *High Diploma*

Master *PhD*

Part (2): Strategic Enterprise Management

First characteristic: Business Processes

1. Rj business process results in progress reports that help leaders to evaluate performance.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

2. Rj Business process leads to progress report that draw ideas to support leaders decision.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

3. I develop business process to ensure that we have the knowledge and skills to take action.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

4. I don't communicate quickly and transparently to accurately track the business metrics.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

5. I use effective business process to cascading initiatives throughout the entire workforce.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

6. Rj is using many processes that are inefficiently costly.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

7. Inefficient processes generally lead to increasing cost concerning R.J.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

8. I take time to deliver desired output.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

9. Business process generally involves a large amount of manual filling tasks.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

10. A large number of people involved at various activities of business process.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

Second characteristic: Management functions

11. Frequently i initiate improvement projects to increase performance effectiveness.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

12.I generally identify the new ideas to my fellow employees creativity.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

13.I don't delegate authorities to my followers to increase effectiveness.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

14. I make certain to set schedules and determine priorities of business processes.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

15. I always transmit information to others via reports, memos and speeches.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

16. I act effectively to take corrective action in case of disputes or crises and conflicts.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

17. I decide which steps are necessary to accomplish the goal of improving company performance.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

18. I organize teams and materials according to operative plan.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

19. I decide to beef up my staff by training and developing program.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

20. I make sure that my plans remain on track by follow them up.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

21. I always review work assignments before their announcement.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

Part (3): Information System

First characteristic: System quality

22. RJ has limitation of unauthorized access.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

23. RJ use changeability in system condition to influence performance effectiveness.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

24. Integrated reports are considered important for performance effectiveness at RJ.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

25. RJ doesn't have precautionary methods to prevent program interruption.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

26. RJ employees assume flexible interaction with quality system.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

27. I have clear and understandable interaction with system.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

28. I have an easy task in using quality system.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

29. I have accomplished high productivity improvement when using system.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

Second characteristic: System use

30. I participate in the evaluation of information system from the point of management needs.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

31. I consult information system auditors for more detailed analyses .

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

32. I evaluate general information system to encounter any possible problems.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

33. I always try to keep the integration of information system under control.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

34. I generally use the information system to improve job performance.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

35. I always use the information system to achieve company goals.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

36. I use the information system to deliver the service in accordance with given promises.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

37. I don't use the information system to do things quickly in response to demands.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

Part (4): Organizational Performance

First characteristic: Effectiveness

38. IS facilitates decision making among management units to support company objectives.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

39. My company regularly gathers different information from operating management for planning and feedback.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

40. We are planning the information based enterprises in an integrated way whereby all stages of the life cycle are engaged to bring out agility, quality and productivity.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

Second characteristic: Efficiency

41. In order to improve quality and reduce cost, my company has established an Information system for management function.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

42. In order to promote service quality, my company prepares the necessary budget to purchase appropriate software and hardware annually.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*

43. We study business and competitive environment to define strategic information needs to provide techniques for building enterprise data and process models.

Strongly Agree *Agree* *Neutral* *Disagree* *Strongly Disagree*