Middle managers attitudes on business performance generated through Enterprise Resource Planning

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Introduction

Enterprise resource planning (ERP) system is a business management system that comprises integrated sets of comprehensive software, which can be used, when successfully implemented, to manage and integrate all the business functions within an organization. These sets usually include a set of mature business applications and tools for financial and cost accounting, sales and distribution, materials management, human resource, production planning and computer integrated manufacturing, supply chain, and customer information (Shehab et al, 2004). These packages have the ability to facilitate the flow of information between all supply chain processes (internal and external) in an organization (Al-Mashari and Zairi, 2000a). Furthermore, an ERP system can be used as a tool to help improve the performance level of a supply chain network by helping to reduce cycle times (Gardiner et al., 2002). However, it has traditionally been applied in capital-intensive industries such as manufacturing, construction, aerospace and defense. Recently, ERP systems have been expanded beyond manufacturing and introduced to the finance, health care, hotel chains, and education, insurance, retail and telecommunications sectors.

In Sri Lanka which is a developing country in Asia and some large organizations in Sri Lanka have successfully implemented core financial ERP modules such as financials, assets, and planning and budgeting (usually without integrating the main business functions, such as purchasing, inventory and sales) but organizations that have adopted more than the core financial modules have experienced problems (Rajapakse and Seddon, 2005). Most organizations in Sri Lanka are considering turning into some sort of ERP package as a solution to their information management problems. ERP packages if chosen correctly, implemented judiciously and used efficiently have the ability to raise productivity and profits of companies dramatically.

This is mainly meant for managers and executives who are entrusted with the job of implementing an ERP system in their organization. This study will target any specific package and it will come handy for anybody who wants to know about an ERP, its future, how a company can benefit from ERP and for the people who want to make a career switch to ERP segment. But many companies fail in this because of incorrect selection of a package, incompetent and haphazard implementation an inefficient or ineffective usage. Not only that it is not widespread due to number of reasons such as huge investments, low return of investment, resistance change and etc.

This study discuss about importance of ERP product for present Sri Lankan companies to be efficient by integrating the functions and middle managers attitudes about generated performance by existing ERP systems.
This paper first explains the background of the ERP system, by that it will discuss more about importance of ERP for present world businesses, how the ERP is used by different company in order to be efficient, ERP market competition, and through second part of the paper will examine the role of middle management who had worked with old legacy systems before implementation of new system attitudes in ERP performance. Became this attitudes directly effect to the future enhancement of the system. Finally it will give insight about current and future ERP market in Sri Lanka.

**Literature review**

The ERP, Enterprise Resource planning, market is relatively new and has grown very quickly lately. The three main reasons for the growth have been globalization, Year 2000, and the need for better information integration. There is also a trend to replace older customized systems with standard applications such as an ERP system. Thus this chapter will illustrate importance of ERP system & its potential influence on business performance.

Enterprise resource planning (ERP) Converse the techniques & concepts employed for the integrated management of business as a whole, from the viewpoint of the effective use of management resources, to improve the efficiency of an enterprise. ERP Packages are integrated (covering all business functions) software packages that support the above ERP concepts (Alexis, 2000).

An ERP system has a service-oriented architecture with modular hardware and software units or "services" that communicate on a local area network. The modular design allows a business to add or reconfigure modules (perhaps from different vendors) while preserving data integrity in one shared database that may be centralized or distributed

Originally, ERP packages were targeted at the manufacturing industry, & consisted mainly of functions for planning & managing core business such as sales management, production management, Accounting & financial affairs, etc. However, in recent years, an adoption not only to the manufacturing industry, but also to diverse types of industry has become possible & the expansion of implementation & use has been progressing on a global level.

ERP software is designed to model & automate many of the basic processes of a company, from finance to shop floor, with the goal of integrating information across the company & eliminating complex, expensive links between computer systems that were never meant to talk to each other. ERP software is mirror image of the major business processes of an organization, such as customer order fulfillment & manufacturing. Its success depends upon reach-a circumscribed ERP system isn’t much better than the legacy system it replaces. In many cases, it is worse, because the old code at least was written specifically for the company & the task. ERP systems’ set of generic processes, produce the dramatic improvements that they are capable of only, when used to connect parts of an organization & integrate its various processes seamlessly. When a warehouse in Noida enters a customer order, for example, the data flows automatically to others in the company who need to see it to the finance department at the company headquarters in Mumbai & to the manufacturing plant in Chennai. The lure of information integration struck a chord with CEOs & CFOs-ERP vendors’ primary targets-& sales of ERP took off in the early 1990s (Alexis, 2000).
Methodology

In this research is going to measure whether middle management attitudes towards ERP contribution to the performance of the organization.

Objectives of the research

The objectives of the research are

- To evaluate managers attitudes towards ERP contribution to enhance organizational performance.
- To evaluate managers attitudes towards impact of integrity of the business performance
- To evaluate managers attitudes towards generating management information on time and greater usage of ERP
- To evaluate managers attitudes on the impact of ERP - Technological advancement on Business Performance
- To evaluate managers attitudes on user friendliness in ERP services.
- To evaluate managers attitudes on cost saving features in ERP system

Use of ERP system is the independent variable of the study and dependant variable is Operational Performance of the organization. Integrity, technology, sophistication and user friendliness has been used to measure use of the ERP system.

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Dependent variables</th>
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<tbody>
<tr>
<td>Features of the ERP System</td>
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<tr>
<td>Integrity</td>
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<tr>
<td>Technology</td>
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<td>Sophistication</td>
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<td>User friendliness</td>
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<td>Cost saving features</td>
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<td>Operational Performance</td>
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<td>Time saving</td>
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<td>Improved decision making</td>
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<td>Reduction of lead time</td>
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<td>Employee satisfaction</td>
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<td>Reduction in quality improving cost</td>
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<td>Improved resource utility</td>
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Hypothesis of the research

Under the identified research purpose there was six hypotheses has developed to test. Those are as follows.

**Hypothesis no 1:** Integrity of the ERP System assists for the faster & accurate of decision making in the organization.

**Hypothesis no 2:** Technological advancement of the ERP brings higher level of performance

**Hypothesis no 3:** There is a positive relationship between generating management information on time and greater usage of ERP.

**Hypothesis no 4 ;** User friendliness of the ERP positively affect on business performance
Hypothesis no 5; ERP system helps to reduce operating cost of the organization.

Hypothesis no 6; There is positive relationship between ERP system and increased performance and efficiency

Operational definitions of the variables

Integrity
One of unique feature of an ERP system is the integration of different modules. Thus a company no need of maintaining different system in different department because of ERP system consists of all sub system in a single system. This will provide huge benefit to the company such as remove duplication of work, time saving; improve resource utilization and support to maintain good internal track records in between department etc.

Technology
The technological advancement would always nourish ERP system time to time with new versions. Therefore ERP system could support to carry out business functionalities with the latest technology. Thus the advancement of technology would result in number of outcomes to a company so as to improve the level of overall business performance.

Sophistication (Easy to use)
When a complex and advanced system becomes use to easy for any user, it can be called as sophistication. A lot of ERP System consists of sophistication thus it can handle bulk of transaction with better accuracy and efficiency.

User friendliness
The user friendliness is very important to be included in any system because it will improve employees’ motivation to work, time saving and thus eventually result in increasing organizational performance.

Cost Saving Features
Sophistication of ERP can reduce the operational cost of an organization though the initial cost is higher. However it is believed that long run cost can be better reduced with use of proper ERP system.

Sample profile
Researchers selected four companies which use ERP systems in Colombo, and two executives from each department such as Finance department, Marketing department, Production department, Inventory and HR department of each company were interviewed with structured questionnaire. Therefore 10 executives from 5 departments had been interviewed from each company. Altogether 40 respondents were considered for the study. The profiles of selected companies had been stated below.

● Orient Electrical Company (Pvt) Ltd.
A Company which manufactures and supplies electrical appliances such as switches, tip switches, bulbs etc. The company issues their products to the market with a brand name ‘Orange’. The head office is situated at Maharagama and there are Branches of the company in three places namely Pettah, Ganagaramaya and Barns Place. The factories of the company are situated at Maharagama, Boralessgamuwa and Meegoda. The business processes going on in those factories and branches are monitored and executed by the ERP software called Infor
ERP LN. Infor ERP LN is an advanced, easy-to-use ERP solution that brings together a wide range of business functions to serve the needs of leading discrete and project-based manufacturers in industries such as industrial equipment and machinery, high-tech and electronics, component manufacturing, commercial aerospace, and shipbuilding. A fully integrated solution, Infor ERP LN provides flexible global business operations support across all departments including finance, warehousing, freight management, and aftermarket service. Companies using Infor ERP LN are able to improve their agility and lower their total cost of ownership.

- **ADAM Group of companies**
The ADAM Group of companies first commenced operations in 1976 as Adamexpo, a sole proprietorship owned by Dr. S.A. Gulamhusein. It has since expanded to include Spice of Life (Pvt) Ltd, Adam Apparels Ltd, Giorgio Morandi, Netcom and Ceylon. Its main lines of business include the export of tea, spices and coconut products, the manufacture and export of garments, the extraction of edible oil and the import and distribution of foodstuffs, paper, petrochemicals, FMCGs and computer hardware and accessories. The ADAM Group is headquartered in the commercial heart of Colombo, three kilometers from the port. Its facilities include over 12,000 square meters of warehouse space. It has a workforce of nearly 500 people and exports to markets all over the world, including Chile, Egypt, India, Iran, Iraq, Jordan, Kuwait, Latvia, Oman, Pakistan, Russia, Syria, the Ukraine, the United Arab Emirates, the United Kingdom and the United States of America. LeoBizSoft ERP software developed and implemented by Designsoft Technologies (Pvt) Ltd is operating in the group from year 2007.

- **Printcare (Ceylon) Ltd.**
Printcare is high end printing solution provider, with a passion for quality. Companies meets the needs of Sri Lanka’s largest export industries – Tea and Apparel, and are a supplier of quality packing for many of the world’s biggest brands. Diversification has led us into other niche markets such as variable printing for security products, greeting cards etc. The company is located at Kelaniya. The company uses very sophisticated ERP software called SAP which was implemented in 2006. The SAP is the world best ERP product and its origin is from Germany.

- **Norfolk Foods (Pvt) limited**
Norfolk Foods (Pvt) limited is a food manufacturing company in Sri Lanka and marketing products under a brand called CRESCENT. The company name NORFOLK has a British origin, where a British qualified food technologist & economist employed then as a director of Bernard Mathews of UK returned home after a stint of 25 years. With a wealth of experience he setup his own factory in an Industrial Estate in Homagama, Sri Lanka. Today it is respected as the most innovative food manufacturing company in the region. Some customers are star class hotels, International franchises, Supermarket, Grocery store, Fast foods out lets, Maldives and Bangladesh etc. The currently running ERP product is LeoBizSoft which was developed and implemented two years ago by Design soft Technological (Pvt) Ltd.

- **Data collection techniques**
Both primary & secondary data were collected, and primary data were collected through structured questionnaires. It has used 5 scaled “Likert” to quantify the responses given by sample units. Secondary data were collected from industry publications and literature sources.
It was found difficulty to penetrate exact information about ERP and HR productivity in Sri Lankan context.

**Results**

As per the conceptualization of dependent and independent variables, there are six hypotheses and six null hypotheses have been formulated to test on statistical analysis.

<table>
<thead>
<tr>
<th>Table 1 : Correlations</th>
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<tbody>
<tr>
<td>Int. (X1)</td>
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<td>Integrity</td>
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<tr>
<td>Technological Advancement (X2)</td>
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<tr>
<td>User friendliness (X3)</td>
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<tr>
<td>Sophistication (X4)</td>
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<tr>
<td>Cost (X5)</td>
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<tr>
<td>Overall performance</td>
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<tr>
<td>ERP performance</td>
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</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Source: Survey Data

<table>
<thead>
<tr>
<th>Table 2 : Descriptive statistics</th>
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<tr>
<td>Mean</td>
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<tr>
<td>-----------------</td>
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Source: Survey Data
To evaluate managers attitudes towards impact of integrity of the business performance

**Hypothesis no 1**: Integrity of the ERP System assists for the faster & accurate of decision making in the organization.

There was a positive correlation between integrity \([M = 3.74, SD = .70]\) [table 2] and performance of ERP \([M = 3.61, SD = .70]\), \(r = .045\), \(n = 40\) [Table no 1]. It is situated less than .5, therefore, it can be identified that there is a weak relationship between Integrity & Business performance. So, Null hypothesis can be rejected.

To evaluate managers attitudes on the impact of ERP - Technological advancement on Business Performance

**Hypothesis no 2**: Technological advancement of the ERP brings higher level of performance.
There was a positive correlation between technological advancement \([M = 3.42, SD = .89]\) [table 2] and performance of ERP \([M = 3.61, SD = .70]\), \(r = .253, p < .001\) \(n = 40\) [Table no 1]. It is situated more 0.5. Therefore, it can be identified that there is a strong positive relationship between Technological advancement & Business performance. So, Null hypothesis can be rejected.

To evaluate managers attitudes towards generating management information on time and greater usage of ERP

**Hypothesis no 3:** There is a positive relationship between generating management information on time and greater usage of ERP.

There was a positive correlation between sophistication \([M = 3.48, SD = .89]\) [table 2] and performance of ERP \([M = 3.61, SD = .70]\), \(r = .164, p < .001\) \(n = 40\) [Table no 1]. It is
situated less than 0.5. Therefore, it can be identified that there is a weak relationship between ERP Sophistication & Business performance. So, Null hypothesis can be rejected.

To evaluate managers attitudes on user friendliness in ERP services

**Hypothesis no 4:** User friendliness of the ERP positively affect on business performance

![Graph showing the relationship between user friendliness and ERP performance. The equation is $y = 0.0826x + 3.8941$ with $R^2 = 0.0112$.]

There was a weak positive correlation between user friendliness [$M = 3.45$ SD = .55] and performance of ERP [$M = 3.61$, SD = .70], $r = .026$, $p = < .005$, $n = 40$ [Table no 1]. It is situated less than 0.5. Therefore, it can be identified that there is a weak relationship between User friendliness & Business performance. So, Null hypothesis (H0) can be rejected.

To evaluate managers attitudes on cost saving features in ERP system

**Hypothesis no 5:** ERP system helps to reduce operating cost of the organization.

![Graph showing the relationship between cost savings and ERP performance. The equation is $y = 0.2059x + 2.9048$ with $R^2 = 0.0267$.]

There was a weak positive correlation between user friendliness [$M = 3.18$ SD = .88] and performance of ERP [$M = 3.61$, SD = .70], $r = .106$, $p = < .001$, $n = 40$ [Table no 1]. It is situated less than 0.5. Therefore, it can be identified that there is a weak relationship between ERP Cost Saving & Business performances. So, Null hypothesis can be rejected.
To evaluate managers attitudes towards ERP contribution to enhance organizational performance

**Hypothesis no 6:** There is positive relationship between ERP system and increased performance and efficiency

There was a weak positive correlation between Attitude towards ERP \([M = 3.65 \ SD = .70]\) [Table 2] and performance of ERP \([M = 3.61, \ SD = .70]\), \(r = .114, \ p = < .001, \ n = 40\) [Table no 1]. Therefore, it can be identified that there is a Positive Strongly weak relationship between ERP features & Business performance. So, Null hypothesis (H0) can be rejected.

**Discussion and Conclusion**

The findings of the study revealed that there is a relationship between ERP features and its impact on business performance. However the relation was identified as positive weak. In other words selected companies ERP systems have been influenced to the performances of their business to small degree.

ERP Integrity, Technological Advancement and User friendliness, Sophistication, cost savings (all the variables) represent positive weak relationship with business performance. The best relation was between ERP Sophistication and performance.

Open ended questions revealed that almost 60 % of employees expressed that time taken for ERP implementation was too long and thus disturbed company operation during implementation. 64% of employees mentioned that their ERP system is too complex and it took a lot of time to get used and thus during that period they could not finish work in time. When ERP is newly implemented to a company a lot of employees are not happy with the change because of they had a fear for change, new learning and system advancement. It was further revealed that 37% of executives rejected to recommend their current ERP system to another company specially due to not achieving what they expected.

**References**


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Abstract

This study discuss about middle management attitudes towards ERP contribution to the performance of the organization. Researchers selected four companies which use ERP systems in Colombo, and two executives from each department such as Finance, Marketing, Production, Inventory and HR of each company were interviewed with structured questionnaire and altogether 40 respondents were considered for the study. The findings of the study revealed that there is a relationship between ERP features and its impact on business performance. However the relation was identified as positive weak. In other words selected companies ERP systems have been influenced to the performances of their business to small degree. When ERP is newly implemented to a company a lot of employees are not happy with the change because of they had a fear for change, new learning and system advancement. It was further revealed that current ERP system to another company specially due to not achieving what they expected.

Keywords: Enterprise Resource Planning, Attitude, Performances
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