



## The Research of ERP Implications in Mongolian Companies Market Analysis

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### Abstract

ERP is obviously large business in the global market. However ERP is pretty new in Mongolia, it already has high demand in the market. Therefore, this study aims to determine ERP market environment in Mongolia. The study uses qualitative analysis methodology to identify market demand and determine ERP knowledge. Data was collected by hardcopy of survey questionnaires from 100 Mongolian enterprises and involved higher position of employees. Total 100 copies of questionnaires were dispatched and all of them were collected. The study finds that 27% of total companies are planning to change their current software and 48% of them planning to buy global ERP systems. Moreover, 56% of total companies heard about ERP before but only 30% of total companies have well knowledge about ERP. It shows that ERP is not popular through the Mongolian market. Even market has less information about this solution; companies need ERP system to strengthen their competitiveness and to improve the company's process flow.

**Keywords:** Enterprise resource planning (ERP), ERP market, Market demand, Market knowledge

### 1. Introduction

Enterprise resource planning (ERP) is a management solution for every type of businesses. Basically, ERP supports business operation and decision making within its integrated functions such as financial management, marketing and sales, supply chain, information system management, manufacturing, service delivery, product planning, human resource and payroll.

ERP software is focused on enterprise application and it can be customizing for every individual business industry (O'Leary 2000). Recently, Mongolian business sector is changing and rapidly growing - becoming more and more expanding. The decision makers start understanding that they need to shift and change business behaviors if they are to succeed in the open market. In this case, management of companies needs effective information systems to improve their competitiveness by decreasing cost and improved logistics (Klaus et al 2000). From this aspect, those large and mid-small sized enterprises (SME) that the capability of providing the right information at the right time brings

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remarkable rewards to businesses to become more competitive in the market. Presently, most of the Mongolian enterprises are using domestic company's products. But those domestic systems can't provide clients requirement sufficiently. Accordingly, in the market have strong demands to replace old customized systems with global ERP in Mongolia since domestic systems have complicated procedures.

In addition, Enterprise resource planning (ERP) is not recognized widely in Mongolian market but few companies who invested by international group are already implemented ERP. Management knows they need aggregate business solution to manage their whole information in advance to become a more competitive in the market. This paper focuses on determining Mongolian market. The study also aimed to demonstrate what kind of systems Mongolian companies currently using, their knowledge about ERP system and market demands. Market is increasingly demanded complex software. Studies indicate that Mongolian companies have high expectations for ERP but also fairly less information.

Furthermore, we aim to express software supplier's competition and market share in this study. Since market have demand, it is necessary to characterize competition and define market situation. The main objective of the empirical part of this study is to survey the current software market situation in Mongolia from the 100 companies. From point of view of this study is exploring how Mongolian software market demand changed in recent. Naturally, the empirical evidence gathered from 100 companies cannot be generalized to pay great extent, but findings from the research could provide useful information to ERP vendors.

## **2. Literature Review**

### **2.1 Enterprise Resource Planning**

Davenport (1998) indicates that ERP system seem to complete entrepreneurs dream. These business software bundles guarantee the consistent integration from claiming every of information streaming through an organization such as financial, human resource, supply chain and customer information. To supervisors who need struggled, at great cost within extraordinary frustration, incompatible information systems, conflicting working practices and those guarantee for standard solution to the issue of business integration is tempting. Obviously, organization need have been open door to enterprise-system.

According to understand enterprise system, we also must to learn their possibility of risk. But first we need to realize the design of ERP to solve problem as the crumbling of information in large scales business industry (Davenport 1998). Kumar & Van Hilsberg (2000) defines about ERP systems that are integrating information and information based systems within functional areas in the business. Moreover, Tadjer (1998) said ERP is one database and one application with combined interface. ERP is computer-based system to handle an organization's connections and simplify integrated and real-time planning, production, and client response (O'Leary 2001).

Klaus et al (2000) recorded different perspectives of ERP concept. First, the most understandably, ERP is a product structure of computer software. Second, ERP can be gotten as improvement objective of planning all processes and data of organization into a wide-ranging integrative configuration. In the end, ERP is the main element of an infrastructure that provides a solution to business".

## **2.2 ERP market**

ERP business began in the sixties as a computer-based tool to automate repetitive manufacturing programs (Adam & O'Doherty, 2000). Traditionally, the ERP market has been targeted by the supplier's size such large ERP vendors, mid-sized ERP vendors and small business vendors. It was assumed that the same ERP vendor couldn't serve a product to various segments. But that view has been disproved recently. We can see global ERP vendors competing successfully in all segments (Gartner 1990). The Fortune (2000) largely selected and positioned their ERP strengths, but many of them still depend on transmission of MRP and MES reserves within confident geographies, divisions, or individual services. For the concentrate on standardizing IT architectures all over the organization, integrated ERP systems that are extended to the entire organization and changing many of the mid-sized market plant applications. The modern large ERP vendors have begun to attack the market observation that their products are large and complex. They are creating inroads into the mid-size market through speedily developing reseller channels (APTEAN 2001). The mid-size market is one of the main areas where the larger ERP vendors trust they have a prospect to sustain or speed-up growth, even as ERP opportunities at the higher end of the market failure (Drew Robb 2011).

APTEAN (2012) The ERP market is constant and growing after a bit of a slow-down during the recent collapse. Enterprises postponed investing in ERP during the difficult time is now starting to invest again to grow their business with the improving economy. ERP market space, exciting as it is. It isn't really of much significant to anyone except ERP software suppliers. Moreover, there are number of suppliers who are enjoying a common of the ERP market share. SAP and Oracle were top ERP suppliers in 2011 and market also includes Microsoft and Infor as a top suppliers. Between the four companies, they earn more than half of all ERP revenue from global market over the last several years.

## **2.3 ERP vendors**

Drew Robb (2011) The ERP business market classified into 3 main types of vendors basically to choose enterprise resource planning software depends on company's size and needs as following as:

1. Large Enterprise ERP

In this category include most popular global ERP systems for large scaled organizations such as SAP, Oracle and Microsoft. In general, those vendors sell their ERP expensively to market which they have complexity solution with high cost for their implementation and support. These vendors are regularly international business with a presence in many different geographic regions.

2. Mid-market ERP

For the mid-size market QAD, Lawson, Epicor, Sage and IFS are included. Naturally, their solutions are easier to manage and support with less correspondingly as well. Vendors are specifically built to handle this market and supply to a single or multiple locations of deployment.

3. Small business ERP

The ERP vendors offering have changed to reflect market condition. They are currently offering ERP systems particularly designed for small sized business such as Exact Globe, Syspro, Netsuite, Visibility, Consona, CDC Software and Activant

Solutions. They provide ERP systems which are easy to implement and support within lower price. Most ERP systems in this group are single location installations and built for a single vertical.

Mongolian ERP market is different compared to global that domestic software commonly used in Mongolia. However it is difficult to define market shares in Mongolia, we have found a study which was carried out by Dataquest, an analysis firm owned by Gartner Group (2012) below.

**Table 2- 1 ERP vendors by revenue**

S/No	Vendor	Revenue (billion \$)	Market share (%)
1	SAP	6.1	24
2	Oracle Applications	3.117	12
3	Sage Group	1.5	6
4	Infor	1.5	6
5	Microsoft Dynamics	1.169	5

According to Gartner Dataquest that when compare ERP vendors, SAP is totally dominating world market. The other vendors are fighting for second one. The SAP occupies approximately 24% of the world market and Oracle 12% as second. According to Gartner reports, work day, workforce software, cornerstone on demand and NetSuite are the five fastest-growing vendors worldwide from 2012 to 2013. Their profit grew 86.1%, workforce Software, 57.6%; Cornerstone on demand, 57%; and NetSuite, 39.6% which has shown in above figure.

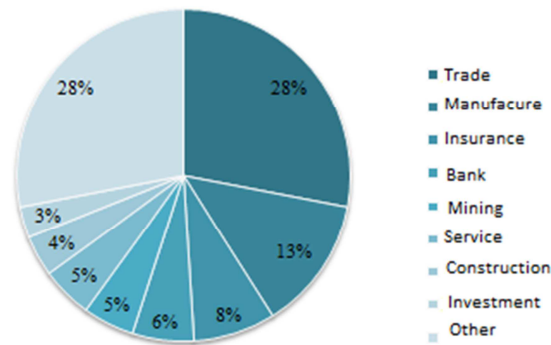
### 3. Method

The main purpose of this research is defining certain things as well as current market situation, ERP knowledge and their need. Additionally, we also aim to determine market opportunity and competition for ERP vendors. The questionnaire used in this study was originally composed in English. Afterward, it is translated into Mongolian language. Each item of survey is discussed respectively with a business consultant. According to their suggestion, some questions are modified.

Moreover, 12 Mongolian students who study in Nanhua University discussed to make sure translation validity as well as they give response to the questions.

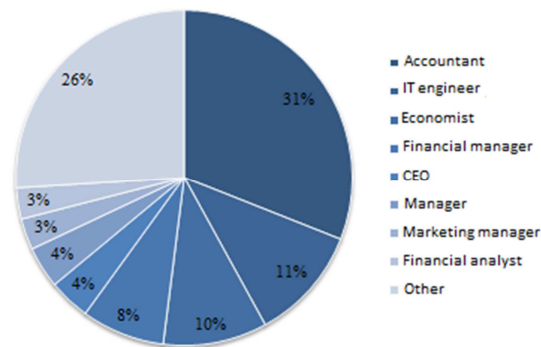
#### 3.1 Sample collection

The empirical data collection is aimed to mainly cover eight major business areas. In recently, the fields of mining, trade, construction, manufacture, insurance, bank, investment and service industries. These industries are growing in Mongolia and most people of population work in those areas. Hence, those fields are considered as represents in Mongolian organizations. Survey is handled through 100 hardcopy to respondents. In addition, participants were informed of the purpose of the study as well as treated anonymously and remain completely confidential.



**Figure 3- 1 Percentage of companies by industry**

This survey covered employees who have higher positions such as CEO, accountant, IT engineer, marketing manager, manager, financial analyst, economist, financial managers and total 100 returned.



**Figure 3- 2 Percentage of respondents by position**

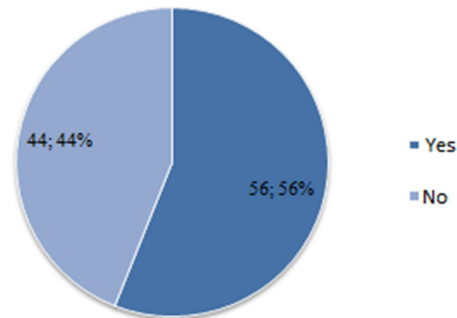
### 3.2 Measurement

This study has 2 major frames are operationalized: (1) ERP knowledge and needs (2) Customer needs of ERP. ERP knowledge and needs include 6 items to measure Mongolian market and 5 of them have multiple choices, one item is open question to fill. Customer needs of ERP contain 11 items and 10 items are measured on 3 point Likert scale. One item measured 5 point Likert scale to evaluate their most important needs.

## 4. Result

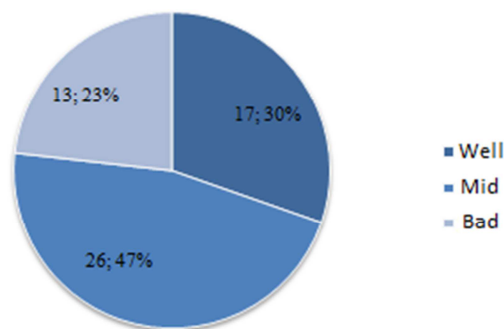
### 4.1 Market knowledge

From total of the 100 respondents, 56% of them hear about ERP system and 44% haven't heard about ERP system. This result shows the ERP system is not well known in Mongolia yet. Respondents might be confusing ERP system as a financial system.



**Figure 4- 1 Percentage of companies ERP knowledge**

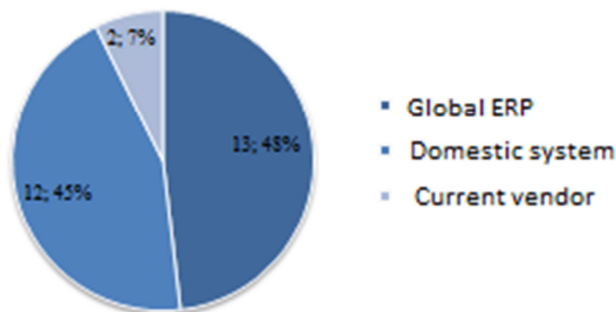
About 70 % of companies, who heard ERP before, they don't know about ERP well. It shows that ERP system is not recognized well in Mongolian market or not having a popular usage.



**Figure 4- 2 Level of company's ERP knowledge**

#### 4.2 Market demand

48% of total companies are planning to buy global ERP system and 45% are choosing domestic software vendors who are developing software based on company's requirement. Only 7% answered they will choose recent company with upgraded version of software

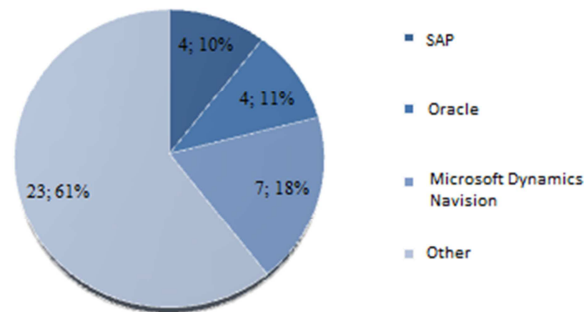


**Figure 4 -3 Companies planning software to buy**

56% of respondents have ERP knowledge that is planning to implement ERP to their businesses. Survey includes open question to answer what is the reasons for implementing ERP and responses are following:

- ERP is complex software
- To reach the perfect method of company’s information system
- Save time and monitoring all data
- Need to use global but friendly system
- Have need of ERP

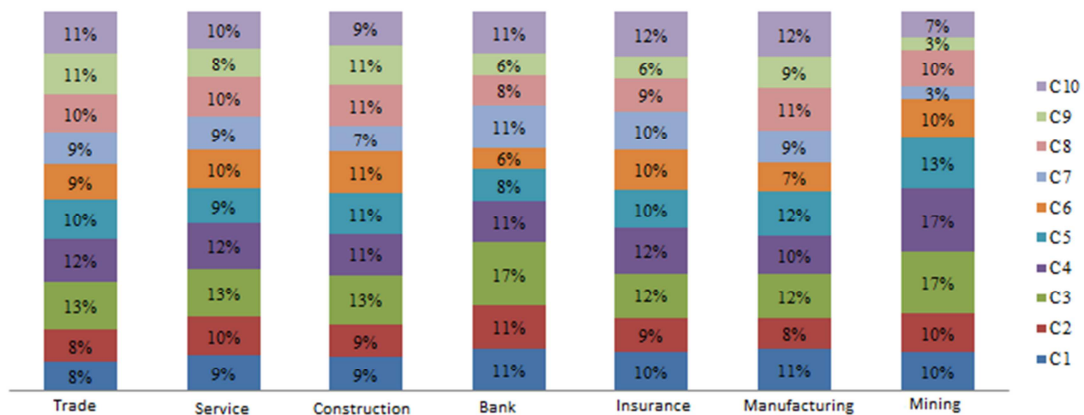
Companies who interested to implement ERP system wants to buy such ERP systems as 10% SAP, 11% Oracle, 18% Microsoft Dynamics Navision, 61% interested in other ERP systems.



**Figure 4-4 Popular ERP vendors in Mongolia**

### 4.3 Client need

Every industries top need is to control their whole internal operation and then departments exchanging information. For the Service and Mining industries, it is important to exchange information in each department. For the Bank and insurance industries, it is more important to see their reports by graphic. For the Manufacturing industry, they need Cost management.



**Figure 4- 3 Highest ERP needs by industry**

The survey includes questions which evaluate customer need of importance such as: (C1)Do you need online report and information (C2)Is it important to you to see your information by graphic (C3)Is it important to control whole company’s operations (C4)Is it important to exchange information immediately and cooperation between each department (C5)Do you need automated inventory management (C6)Does your company need budget management system (C7)Do your client need online purchasing system (C8)Does your company need cost management system (C9)Does your company need to reduce warehousing cost (C10)Is it important to know about changing price and profit information immediately.

For the Construction and Manufacturing industries, online purchasing and reducing warehouse cost is less important. For the Trade, Service, Insurance, Banking industries, there is no need to reduce warehousing cost.

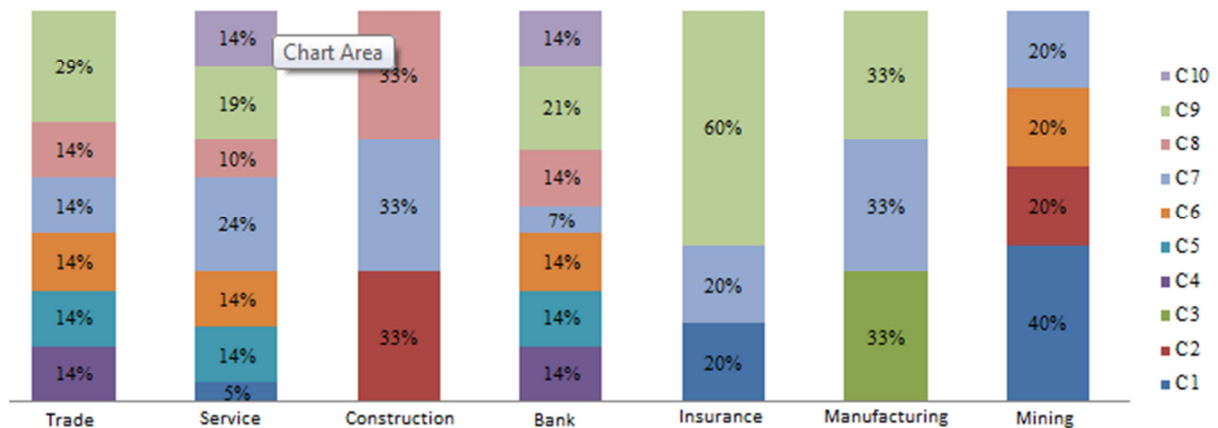


Figure 4- 6 Lowest ERP needs by industry

## 5. Conclusion

### 5.1 The ERP market in Mongolia

Mongolia has moved into a democracy with a booming economy over the past 20 years. Since Mongolian economy is growing, the businesses are following to expand. We are noticed that many large scaled companies are interested in implementing ERP systems. The aim of study was to explore Mongolian ERP market. In addition, this research also aimed to determine ERP needs and opportunity.

According to survey result, every 1 of the 3 companies are planning to change their current software. It shows that (1) they have financial ability to buy ERP (2) they understand that software’s role and importance. However they don’t know about ERP well, they still have strong demand of ERP to manage their business operation. Even entrepreneurs understand that they need ERP system, only 3 respondent companies implemented ERP. It expresses that ERP system is not well known and recognized in Mongolian market. We also found that ERP have never been big marketing campaign to introduce in the Mongolian market. Though, in the market has not enough information about ERP, 68% of respondents /who knows ERP/ answered that they want to implement ERP especially big group companies. It shows market has high demand of this product. ERP is new and has big potential prospects in Mongolian



market. The prospect we surveyed saw the strategic potential which they expecting from systems, but they don't have full information about ERP. We have faith in potential ERP clients as a result have more strategic point that implementing ERP system will help them to see it as a strategic opportunity to strengthen their competitiveness and to improve the company's process flow.

## **5.2 Market Implication**

Since, large scaled group companies already have ERP knowledge, the growth of new sales to them will be increase. According to our survey result, 1 of every 3 companies is interested in ERP. In order to reach them, ERP vendors should offer their solution and give more focus on recognizing ERP into Mongolian market. Recently, In Mongolian market SAP, Microsoft Dynamics Navision, AX and Oracle are more recognized than other global ERP systems.

Currently, it looks like ERP has little potential market, but business environment will be changed a lot for one year. We found that market competition is not so heavy in Mongolia.

## **5.3 Discussion**

The main research question of this study was "Have you ever hear about ERP?" This study aims to determine ERP market in Mongolia. Accordingly, it is important to define ERP knowledge of Mongolian enterprises.

However, few organizations have knowledge about ERP, most of them confused as ERP as a financial system. On the other hand, International and large scaled enterprises are already knowing and become familiar with ERP. Recently, Mongolian economy is growing fast because of mining and agricultural industries. Foreign investors are seeking to invest and entering to Mongolian market. In this case, Market is having a high demand of ERP while companies are expanding.

## **5.4 Limitation and Recommendation**

There are some limitations in this research design that could be addressed in the future research. First, our research would be generalizing to other countries ERP market. For example, level of Mongolian ERP market may have different from other countries market. Thus future research can address to test and compare with other countries sample.

Next, this study did not measure a concept (Consulting business in ERP) that can consummate the research. Since consultant firms have effective playground in the ERP market, it could be more efficient research in the future study.

Furthermore, we found that ERP has not well recognized in the Mongolian market yet and they interested in global ERP system. The global ERP vendors need to give more focus on marketing campaign and advertisement to attract prospects. On the other hand, there is not strong competition in the market besides domestic vendors. It shows that market have great opportunity for global ERP suppliers to win.

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