

ERP Readiness for SMEs in Thailand Metropolitan

Nachayapat Rodprayoon¹

¹Information Systems Department
Rajamangala University of Technology Thanyaburi
Pathumthani, Thailand
nachayapat_r@rmutt.ac.th

บทคัดย่อ – การวิจัยเกี่ยวกับการเตรียมความพร้อมสำหรับการนำระบบการวางแผนทรัพยากรในองค์กรมาใช้ในธุรกิจขนาดกลางและขนาดย่อม เพื่อเป็นแนวทางในการตรวจสอบถึงศักยภาพและปัจจัยต่าง ๆ ที่เกี่ยวข้องก่อนการลงทุนทางด้านเทคโนโลยีสารสนเทศเพื่อในดำเนินธุรกิจ ซึ่งถือว่าเป็นการลงทุนที่มีความเสี่ยงต่อความล้มเหลวและไม่ประสบความสำเร็จตามวัตถุประสงค์ที่ตั้งไว้ การวิจัยครั้งนี้ใช้วิธีการเก็บข้อมูลผ่านแบบสอบถามจากกลุ่มตัวอย่างที่ดำเนินธุรกิจขนาดกลางและขนาดย่อมในเขตกรุงเทพมหานคร จำนวนทั้งสิ้น 450 แห่ง เนื่องจากเป็นแหล่งเศรษฐกิจที่สำคัญของประเทศไทย การวิจัยมีวัตถุประสงค์เพื่อเป็นการศึกษาด้านสภาพแวดล้อมทั่วไปสำหรับการใช้งานระบบการวางแผนทรัพยากรในองค์กร เพื่อศึกษาถึงความเหมาะสมและการเตรียมความพร้อมทั้งทางด้านทักษะ การบริหารจัดการของผู้บริหารหรือเจ้าของธุรกิจและทักษะของผู้ใช้งานระบบ เพื่อเป็นการตรวจสอบและประเมินตนเองก่อนการตัดสินใจนำระบบการวางแผนทรัพยากรในองค์กรมาใช้ในธุรกิจขนาดกลางและขนาดย่อม โดยใช้สถิติในการวิเคราะห์ ได้แก่ ค่าร้อยละ ค่าเฉลี่ย ค่าเบี่ยงเบนมาตรฐาน และการวิเคราะห์ความแปรปรวนทางเดียว จากการศึกษาพบว่าผู้ตอบแบบสอบถามดำเนินธุรกิจด้านการผลิต ส่วนใหญ่มีระบบการวางแผนทรัพยากรในองค์กรมาใช้ในธุรกิจ โดยการพัฒนาระบบขึ้นเอง ในทางกลับกันผู้ใช้งานระบบไม่มีประสบการณ์ด้านการใช้งานและไม่มีความรู้ด้านระบบการวางแผนทรัพยากรในองค์กร ทั้งนี้ด้านความสามารถในการบริหารจัดการและความพร้อมสำหรับการใช้งานระบบของผู้บริหารหรือเจ้าของธุรกิจ

ถือว่าเป็นส่วนสำคัญที่สุดที่สามารถประเมินความพร้อมก่อนการตัดสินใจในการนำระบบการวางแผนทรัพยากรในองค์กรมาใช้ในธุรกิจได้

คำหลัก – ระบบการวางแผนทรัพยากรในองค์กร; ธุรกิจขนาดกลางและขนาดย่อม; การเตรียมความพร้อมระบบการวางแผนทรัพยากรในองค์กร;

Abstract— Research on preparation for implementing enterprise resource planning systems in small and medium businesses. This is a guideline to examine the potential and related factors before investing in information technology to business operations. This is an investment that is vulnerable to the failure of the objectives. This research uses data collected from questionnaires from small and medium enterprises in Bangkok total of 450 sample as a major economy of the country. The research aims to study the general environment for the use of resource planning systems in organizations, to study the appropriateness and preparation of skills, management of executives or business owners, and the user's system skills. And to review and evaluate themselves before deciding to deploy enterprise resource planning systems in small and medium businesses. The statistics used in the analysis were percentage, mean, standard deviation and one-way ANOVA. The research found that: respondents engaged in manufacturing business most of the resources in the organization are used in business by developing our own system. On the other hand, system users do not have the experience and have no knowledge of enterprise resource planning. The ability to manage and readiness for use of the system administrator or business owner. It is the most important part that can assess the readiness of decision making in implementing enterprise resource planning systems.

Keywords- Enterprise Resource Planning system; Small and Medium Enterprise; ERP Readiness;

I. INTRODUCTION

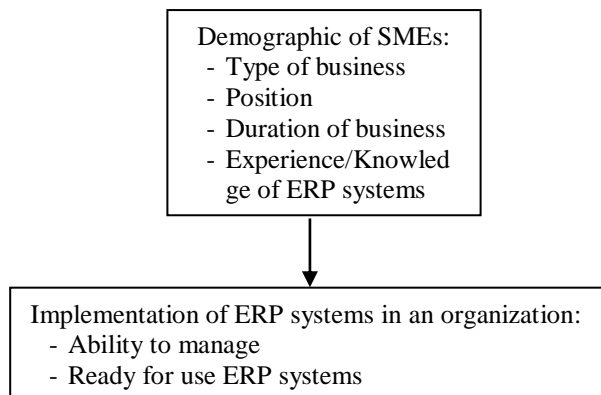
Technological advancement, with emphasis on information. This is considered to be of great value and is very important in today's organizations. It can be beneficial to many organizations, such as reducing the number of people in the work process. Employees have plenty of time to think, analyze, review work, communicate, and keep track of tasks.

Small and Medium Enterprises (SMEs), a private business operated by a single owner or entrepreneur. And the money to invest in business is not very high. Information technology is also used in the organization to speed up the work process. And effective. It is important. This will lead to a large business while the business environment is relatively competitive, the number of SMEs in Thailand continues to increase, as well as the benefits of using information technology to support operations. To plan the resources in the organization to maximize the benefits.

At present, there is a development of resource planning system in the organization. Enterprise Resource Planning (ERP) is one of the most popular information systems in the business world. Because the ERP system is designed to integrate business processes into a business. From the accounting and financial systems. Human Resources Production management system including the distribution system. The database is stored for sharing. Prevent data duplication. ERP systems are one of the tools that help businesses plan their investment and manage their resources in the most efficient and cost-effective way. [1] Needs to study the various factors to ensure that the ERP system is used in the organization to achieve the desired results and minimal risk.

II. CONCEPTUAL FRAMEWORK

The research hypothesis is that small and medium enterprise is the appropriate and ready to use resource planning system in the organization.



III. LITERATURE REVIEW AND RELATED STUDIES

The definition of decision-making by Gibson and Ivan Sawyer [2] states that decision-making is a critical process for an organization's management to take on the basis of information and information relevant to decision-making. It is derived from the organizational structure. Personal behavior and groups in the organization.

In addition, the decision. It also means using information to help decide. The principle and the reason. By the process, the steps and methods of choosing the best choice for the most obvious goals [3], [4] are of two types: 1. Theoretical Theory: Objectives of Theory Normative is the expression that people should behave when faced with risky decisions. Therefore, the behavioral pattern emphasizes the reason for decision. 2. Descriptive Theory: From a descriptive point of view, we are concerned that the public will decide how they will behave in real life or empirically. In real life, the beginnings of these theories have been empirical experiments which show that people's behavior is not consistent with normative theories [5].

The advancement of technology and the importance of data collection for the era of social, economic, knowledge base. Organizations need to have basic knowledge about the use of information technology. Because of information technology, there is no communication. Facilitates Encourage better quality of life. And it keeps the overall business process smooth. Efficiency in the operation. And can gain advantage from the competition. At present, the application of information technology in many jobs.

ERP is an enterprise resource planning: Enterprise Resource Planning (ERP) software enables businesses to manage and connect data across all core business segments, with the goal of improving decision making. ERP software solutions enhance visibility throughout the organization, enabling decision makers to streamline business processes such as human resources management, supply chain lifecycle management, customer relationship management (CRM), etc. ERP software should be the focal point for management. [6] ERP is a tool for forecasting business operations, investment and management. The important role of ERP systems for large businesses continues to grow. The cause of the related activities is to create value for the customers of the relevant departments. ERP is a tool used to manage the business to solve management problems and help managers or supervisors to plan and invest resources efficiently.

Small and medium enterprises have the criteria for determining the size of small and medium businesses. Business size, personal quality, quality and performance standards, and business success. Countries have set guidelines for the size of the business, such as the type of business, number of employees, size, size, fixed

assets sold, profits generated by the organization and number of customers, etc. Meaning or meaning of the media and Small Business Small business sharing. However, SMEs are not as complex as large enterprises. Business owners of SMEs and their employees are closely related. The process of SMEs is a process model in which business owners tend to manage almost all aspects of business [7] as well as the organization and operations that result in planning. Bad and high risk for business, the results of the ERP system in the organization are as follows.

Achmad Nizar Hidayanto, Aziz Hasibuan, Putu Wuri Handayani and Yudho Giri Suchyo. [8] The research: Research Framework for Measuring ERP Applications Availability in Small and Medium Enterprises: A Case Study of Software Developers This research was designed to create a self-assessment framework for the availability of open source ERP systems that focus on pre-ERP systems. The research found that the preparation factors were divided into three aspects: And preparation for change management. The research found that the company is not ready to use the open source ERP system, although the company has a strong human resources. However, it is still weak in other respects, so there must be a strategy to improve the readiness level before using the open source ERP.

Majid Aarabi and Mahboobeh Mohammadkaz [9]. They have researched A Review of Readiness Assessment of ERP Implementation in Iranian Small and Medium Enterprises. This is a study of the current business process model in assessing the readiness of SMEs with specific characteristics. And the ability to improve the ERP system to be successful. Using the model to assess the readiness of SMEs: INQA (Iran national quality Award model) model for ERP Systems. A structure that is developed on the basis of experience and can be used to assessing readiness as well. The key critical success factors for ERP in SMEs. Such as: Cost, Technology, Technical, Strategy, Re-engineering: BPR, Change Management, Project Management, Human Resource, and Chang Culture Organization.

Soheila Shiri, Alireza Anvari and Hassan Soltani [10]. Research on Mckinsey 7s Modeling of Availability Factor-Based ERP (Extensions). This research has many businesses with high failure rates. In order to use the ERP system, the main goal of the study is to identify and prioritize enterprise readiness factors in the use of ERP, based on the agility of the organization. Using the McKinsey 7S model (strategy, structure, skill system, employee expertise) using self-assessment and support factors. For the use of agile ERP systems. "Focus on managing change and prioritizing your strategic development.

R.Dhinakaran Samuel, Dr. Santhosh Kumar [11]. Research into the framework for assessing delays in the use of enterprise resource planning systems suggests that

investing in ERP is subject to risk assessment. Most investors realize that the decision to enter the ERP system is inappropriate, which is difficult and risky. The key factor is the adoption of the user's system. It is important to make the decision to use the ERP system in the organization.

IV. ANALYSIS OF DATA

Analysis of data according to each category using descriptive statistics display in table 1-8.

TABLE 1. DISPLAY FREQUENCY AND PERCENTAGE FOR THE DEMOGRAPHIC OF SMALL AND MEDIUM ENTERPRISE CATEGORY

Demographic of SMEs Category	Number of frequency	Percentage (%)
Types of business		
Manufacturing	197	43.8
Services	181	40.2
Wholesale and retail	72	16.0
Position		
Business owner	287	63.8
Employee	145	32.2
Duration of business		
< 14 years	198	44.0
15 – 29 years	180	40.0
30 – 44 years	36	8.0
45 – 59 years	18	4.0
> 60 years	18	4.0
Experience/Knowledge of ERP Systems		
Have	162	36.0
No have	288	64.0

The survey for businesses, the majority of respondents are business owners. Manufacturing Business They have been doing business for less than 14 years and have decided to adopt an enterprise resource planning system in their business processes. Most of them have no experience or knowledge about ERP systems.

TABLE 2. DISPLAY MEAN AND STANDARD DEVIATION OF THE ABILITY TO MANAGE AND READY FOR USE ERP SYSTEMS (MANAGEMENT)

Type of ability	Level of ability		
	\bar{x}	S.D.	Meaning
Management			
1. Business management by owner	4.24	0.65	Most
2. Planning and modifying the business plan to comport for changing circumstances	4.16	0.61	More

Type of ability	Level of ability		
	\bar{x}	S.D.	Meaning
3. Risk management for anything happen.	3.92	0.90	More

The ability to manage most respondents. Think about what the most important thing is. The ability of business owners to manage the business first. The second is the ability to plan and modify flexible business plans. And the third is the ability to manage risk as well.

TABLE 3. DISPLAY MEAN AND STANDARD DEVIATION OF THE ABILITY TO MANAGE AND READY FOR USE ERP SYSTEMS (READY FOR USE ERP SYSTEMS)

Type of ability	Level of ability		
	\bar{x}	S.D.	Meaning
ERP readiness			
1. Network system	4.20	0.57	More
2. Hardware	3.96	0.82	More
3. Investment and IT skills	3.68	0.97	More

Preparing for use in enterprise resource planning systems found that most respondents felt that Network availability is the first factor that affects the introduction of an enterprise-class ERP system. This includes hardware availability. This is an important part of measuring performance, and the last one is the investment and IT skills. It requires capital to venture into and risk the use of information technology in the business process.

TABLE 4. DISPLAY MEAN AND STANDARD DEVIATION OF THE OPINIONS OF USERS TO ERP SYSTEMS (ATTITUDE)

Category of opinions	Level of opinions		
	\bar{x}	S.D.	Meaning
Attitude for ERP Systems implement in organization			
1. Business owner has good planning and vision	4.28	1.19	Most
2. Business owner support	4.12	1.18	More
3. Financial resources	4.12	1.21	More

A survey to review attitudes towards using enterprise resource planning systems found that business owners have good business planning and vision. This will result in the adoption of ERP systems in the organization. It

must be supported by business owners and must be ready for financial resources.

TABLE 5. DISPLAY MEAN AND STANDARD DEVIATION OF THE OPINIONS OF USERS TO ERP SYSTEMS (BENEFITS)

Category of opinions	Level of opinions		
	\bar{x}	S.D.	Meaning
Benefits of ERP Systems implement in organization			
1. The perspective of ERP implementation policy	3.76	1.14	More
2. ERP systems improve company's business performance	3.64	1.20	More
3. The need to use ERP with your position.	3.64	1.20	More

The attitude of the benefits of implementing an enterprise resource planning system in the organization to find that the majority of respondents have a positive attitude. Using the system to maximize benefits depends on the policy perspective of the management. In addition, think that the ERP system helps improve the company's business efficiency. And the last one is. The need for ERP implementation with your position.

Next section, the research hypothesis will be tested.

TABLE 6. THE RESULTS OF COMPARISON BETWEEN DEMOGRAPHIC AND ABILITY TO MANAGE ERP IMPLEMENTATION IN SME (MANAGEMENT)

Category of demographic and ability	F	Sig.	Comparison
Type of business	33.132	0.252	NSD
Duration of business	53.291	0.000	Difference
Experience/Knowledge of ERP Systems	10.575	0.041	Difference

* Significant at the statistical level 0.05

The analysis shows that the type of business does not affect management capabilities. In turn, business time management and system experience. Including knowledge of resource planning systems in the organization, resulting in the ability to manage before the introduction of ERP systems in the organization.

TABLE 7. THE RESULTS OF COMPARISON BETWEEN DEMOGRAPHIC AND ABILITY TO MANAGE ERP IMPLEMENTATION IN SME (READY FOR USE ERP SYSTEMS)

Category of demographic and ability	F	Sig.	Comparison
Type of business	45.910	0.000	Difference
Duration of business	20.340	0.000	Difference
Experience/Knowledge of ERP Systems	35.427	0.000	Difference

* Significant at the statistical level 0.05

The findings about the availability of the Enterprise Resource Planning systems. The one-way analysis of variance (One-way ANOVA statistic) at the 0.05 level found that the type of business, duration of business and Experience/knowledge of Enterprise Resource Planning systems. Affect the readiness of the system significantly.

TABLE 8. THE CORRELATION BETWEEN THE ABILITY TO MANAGE AND READY FOR USE ERP SYSTEMS THAT INFLUENCE OPINIONS RELATED TO ERP SYSTEMS IN SME

Comparison variables	Correlation	Sig.
Management & Ready for use ERP systems	1.000	0.000
Attitude for ERP Systems & Benefits of ERP Systems	0.669	

From Table 8, data analysis shows that the ability to manage and operate an ERP system is relatively easy to correlate with the attitude of adopting ERP and the benefits of using the ERP system as a positive direction (0.669).

The ability to manage and maintain the availability of ERP systems enhances attitudes toward ERP systems and the benefits of using ERP systems at a confidence level of 0.05 or 95%

The study of the suitability of ERP systems for SMEs in Bangkok. Most business owners are almost all executives. Decision-making technology. Information is used in organizations as a relatively large investment. The suitability is measured by the skill level. Availability and attitudes towards ERP systems. Assessing the readiness of implementing ERP systems in organizations. Structured management preparation is required. Change management like research. The company is not yet ready for the Open Source ERP system, even though the company is well-equipped. On the other hand, the company remains weak in other areas, which require some strategy to improve the level of readiness before implementing the ERP system.

V. CONCLUSION

ERP system is the system to support the efficiency of business processes for SMEs. The preparation of policy and related advocacy, as well as advocacy for vision and technology. Enterprise Resource Planning (ERP) needs to be explored and evaluated before being deployed to an organization. It reduces the risk of failure and optimizes business processes. It is important for business owners to be aware of the success factors that will lead to the successful use of the ERP system.

From the data collection to the questionnaire and data analysis to understand the context or general environment of implementing the ERP system for SMEs to find the appropriate ERP system, it is well known that most SMEs have low investment. Not much staff and the business owner are usually the one who manages and manages almost all tasks. The decision to use information technology in the organization, which may be a business risk. Due to the high investment in technology. The benefits of both tangible and intangible investment are that there is no less risk. Therefore, the suitability is measured by the level of capability, readiness and attitude of the ERP system. For ERP systems in this organization, strategies need to be used to improve the level of readiness before using the ERP system in SMEs. Technology Business owners should have an understanding of the decision-making process and appropriate decision-making. It must be planned in terms of the environment in which the organization operates.

In addition, the summary of the findings of the relevant recommendations. Respondents in the same direction that the implementation of ERP system in the organization. This will ensure that the data is processed correctly. Which is a good investment.

VI. LIMITATION AND FURTHER STUDY

System usage does not cover every department in the organization. As a result, some employees have no experience and no knowledge of the ERP system. Therefore, the organization should adopt a policy of introducing new technologies into the organization. In order to prepare the user for the training system. Introduce knowledge, understanding and development of employees. In order to be the driving force behind the adoption of the system in the organization. And reduce the risk of failure to implement ERP system in the enterprise.

It is proposed to study in the future. The researcher must collect the sample data. Specific types of business are identified, such as business specific information. Service Business The wholesale and retail business is to be more explicit in terms of modules used in the

main applications. Types of software used Include software estimates.

In addition, there should be additional factors which may affect the decision. Management level System Availability because the business environment is changing rapidly. There are many factors. Both the existing factors and the new factors.

REFERENCES

- [1] Banek, S. (2015). Recruitment Consultant specializing in the placement of designated accountants, supply chain and IT professionals. Part II - I Survived an ERP Implementation. Survey Results. Retrieved from <https://www.linkedin.com/pulse/part-ii-i-survived-erp-implementation-survey-results-sally-banek>
- [2] James, Jr. Donnes. Gibson L. & John M. Ivancevich. (1971). *Fundamentals of Management*. Dallas. Texas: Publication. Inc.
- [3] Simon, H.A. (1974). *Administrative Behavior*. 1st. ed. New York: Macmillan. 133.
- [4] Parmigiani, G., Inoue, L. Y. T., & Lopes, H. F. (2009). *Decision Theory Principles and Approaches*. UK: TJ International, Padstow, Cornwall.
- [5] Luergam, P. (2009). Grade 7 Students' normative decision making in science learning about global warming through science, technology and society (STS) approach. Thesis Master's Degree, Faculty of Education, Khonkaen Univerisity.
- [6] Evans, James R. and Olson, David L. (2003), *Statistics, Data Analysis, and Decision Modeling*. 2nd ed. New Jersey: Prentice Hall.
- [7] Aisyah, M. N. (2011). Using Enterprise Resource Planning (ERP) for Enhancing Business Processes in Small and Medium Enterprises (SMEs). *Journal Pendidikan Akuntansi Indonesia*, Vol. IX No. 2. 40 – 52.
- [8] Hidayanto, N. A., Hasibuan, A., Handayani, P. W., & Sucahyo, Y. G. (2013). Framework for Measuring ERP Implementation Readiness in Small and Medium Enterprise (SME): A Case Study in Software Developer Company. *Journal of computers*, Vol. 8 No. 7. 1777 – 1782.
- [9] Aarabi, M. & Mohammadkazem, M. (2014). A Review of Readiness Assessment of ERP Implementation in Iranian Small and Medium Enterprises. *International Journal of Information System and Enginassing (online)*, Vol. 2 Issue 1. 17 – 22.
- [10] Shiri, S., Anvari, A., & Soltani, H. (2014). An Assessment of Readiness Factors for Implementing ERP Based on Agility (Extension of Mckinsey 7s Model). *International Journal of Management, Accounting and Economics*, Vol. 1 No. 3, 229 – 241.
- [11] Samuel, R. D., & Kumar, N. S. (2015). Framework for the Estimation of Delays in Enterprise Resource Planning System Implementation. *Research Journal of Applied Sciences* 10 (4). 136 – 146.