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Choosing ERP system for a Vietnamese small-sized retailing company

Case ThaiLai Ltd.

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Abstract

Information sharing is very important in any organization. However, having reliable information and continuous flow of it between departments is not an easy goal to achieve, especially without help of technology.

A small-sized retailing company in Vietnam was the object of researching. The traditional way which they work and the results it delivers were studied and analyzed. After having a big picture of the company's operation, ERP systems from chosen vendors were analyzed to find out which system can fulfill the needs of the organization. In order to do that, the following questions had to be answered, "What features of an ERP system does ThaiLai Ltd. expect?", "Who will become the potential ERP vendors for ThaiLai Ltd. in Vietnam?" and "What Logistics-oriented advantages an ERP implementation will give ThaiLai Ltd.?".

Case study approach was used. Necessary data for analysis was collected by Qualitative research method. At the beginning, theoretical basis was created to elaborate the subject with clarity. Later, it served as foundation for analyzing and grading of the chosen ERP systems. Several interviews were conducted to draw perspectives of important people from the host company, to identify their needs and expectations.

As a result, three research questions were answered, including finding a suitable ERP system for ThaiLai Ltd., regarding their greatest concern about inventory validity and information sharing.

Keywords/tags (subjects)

Inventory accuracy, Information sharing, ERP system, Case study, Warehousing

Miscellaneous (Confidential information)

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1 Preface

Information management and optimization of available resources between departments are not easy-to-solve problems for all companies, from startups to Small and Medium-sized Enterprises (SMEs) to large corporations. For large corporate companies, they face main problem of having too much information to manage, whether there is any missing information and whether the data sources are consistent or not. For startups and SMEs, whose capital is not much, they also want to optimize information sharing and managing in their organizations in an economically affordable and suitable mean.

To solve all above problems, the presence of Enterprise Resource Planning (ERP) is needed. Besides, ERP has many other brilliant features. Currently, there are many large corporations in the world who use ERP systems to manage their business activities. ERP system is considered a key factor for the success of businesses (Concept, Role, and Characteristics of ERP System in Business Management 2016).

There are many different types of ERP software on the market, they are different in model, feature, and field of use. Moreover, the price difference is quite obvious. Hence the question is - How can we choose the best ERP system for ThaiLai Ltd.? In this thesis, we will analyze the company's aspects, its need and choose the most suitable ERP system for ThaiLai Ltd.

1.1 Company introduction

Thailai Ltd. officially came into operation in 2006, based in Binh Thanh district – a very central area of Saigon city, with a staff number of only 16 people. After 13 years of operation, the company has grown and is now the workplace of nearly 70 people.

Thailai Ltd. is a retailer of pipe system products. The company's business objects are diversified, from personal purposes such as household installation to large construction sites. The company's key products are copper pipes, fittings for copper pipes and insulation materials.

There are 2 types of copper pipes: *Neotube* straight pipe and *Hailiang* soft pipe – which can be coiled. Both types are used for refrigerator, water, and air conditioning

system. Moreover, Thailai Ltd. provides *Maxflex* rubber insulation sheets which is used for insulating air conditioning and refrigerators. Along with that, a number of relevant accessories are also imported for sale, such as *Maxtape EPDM* - a type of adhesive tape for connecting insulation tubes, *Maxglue* product - preventing water penetration into joints of the materials.

Thailai Ltd. has three offices, spreading the country from north to south. The Head Office (HO), where the board of management works, is located in Saigon (southern Vietnam), whereas the other two offices are in Hanoi (northern Vietnam) and Da Nang (central Vietnam), two economically important cities of the country. In those cities, Thailai Ltd. designates a warehouse for each office.

Thailai Ltd. has its core logistics activities revolved around 5 departments: Sale, Logistics, Warehousing, Purchasing and Finance. Each department has its own important role, supporting each other, and is an indispensable part of the success of ThaiLai's operation.

Table 1. Number of potential users of the new ERP system

Department	***Users***
Sale	21
Finance	10
Purchasing	9
Logistics	10
Warehousing	10

1.2 Objectives

Selecting the right ERP system for ThaiLai Ltd. is the Objective of this project. Kananen (2011, 51) indicates that ''By asking questions, we can get to the heart of the matter''.

The following Research Questions are designed to find a new and most suitable ERP system for the host company:

1. **What features of an ERP system does ThaiLai Ltd. expect?**
2. **Who will be the potential ERP vendors for ThaiLai Ltd. in Vietnam?**
3. **What Inventory-oriented improvement an ERP implementation will give ThaiLai Ltd.?**

This research will be done on several departments such as: Sale, Warehousing, Logistics and Purchasing. The opinions from Finance department and activities involving them will also be mentioned and gone through.

2 Methodology

2.1 Case study

The aim of this thesis is to study the way ThaiLai handles good flows and inventory accuracy, and from there, to suggest suitable approach for a new ERP implementation for the company. Since the object of this thesis is a single organization, of which the structure cannot be used as a representative for any of its fellow SMEs, this thesis can be viewed as a case study of ThaiLai Ltd.

A case study is not a research method like quantitative or qualitative method at all. A case study is rather a narrative investigated by researchers, who could use quantitative or qualitative to gain data and use that data to serve the purpose of that case study (The case study method n.d., 6). Knowing this is a case study helps the readers to understand why the researcher narrows his/her field of research and just focuses on the aspects that matter to the object organization.

2.2 Research methods

Choosing the right research methods plays a significant role in writing a thesis. Kananen (2011, 43) described Quantitative research as a train that goes from one station to another, steadily following the track with certain rules. Whereas, Qualitative research has much greater flexibility, even to an extent that there is no wrong interpretation, unless there is obvious mistakes in the process of analyzing and data collecting (ibid.)

In this thesis, qualitative research will be used to collect data to clarify the case company's specific needs of a new ERP system, as well as feedback from the current way of managing inventory accuracy and its relation to their work from representatives of ThaiLai Ltd.

2.3 Good interviewing skills

Listening skills in the interview process are the most important factor to have a successful interview. Murchison (2010) thinks that ''a good interviewer is a good listener''. Careful listening will prevent interviewers from repeating same questions unconsciously, causing interviewees uncomfortable. During the interview process, we must ensure coherence, fluency and clarity. Therefore, a list of interview questions must be compiled carefully. A list of good questions will cover the main topic, details, not too simple, but not too complicated, leading to the situation where the interviewees do not fully understand the questions, or they just give general answers. Moreover, it is important that the list is arranged in the correct order, which question should be asked first, which should be asked later so that the interviewee will not get confused and answer the wrong idea initially. In addition, we have to clearly define the central question of the interview, so that we can arrange a more reasonable amount of time to interview the important questions than the other ones (Murchison 2010)

After a draft question list is available, we should check it again and see if we are satisfied with that list yet. Then, we can send it to the interviewees before the interviews take place, so that they can get acquainted and prepare for the answers. Since the interviewees cannot answer those questions in detail if they did not know what kind of questions they will be asked, there is too much information about the activity related to that topic that they cannot remember everything in their head. When we send them a draft of the questions that they will be asked, they could take a look and take note of the relevant information and even show us the relevant documents. During the interview, the interviewer himself needs to have flexibility when asking interview questions and collecting answers. The interviewees can give their own opinions and experiences, we can ask more related questions which are not on the list, if we find that is a good idea and we are interested to know more about it. Nobody prevents us from asking more questions beyond the list. Additionally, we can

also omit some of the questions in the manuscript if the interviewee has already answered that question in the previous questions (Cai 2018, ibid.)

In this project, 5 representatives from 5 different aforementioned departments of ThaiLai Ltd. will be invited to an interview about the current information management method that they are using. During the interview, the interviewees will be asked to state out some issues of the current system that they have troubles with, and their feature-related expectations of a new better system.

The means used to conduct the interviews will be Skype video call function. If there were any related documents, they would be sent to the interviewer via emails. The interviewer and interviewees agreed that no recording will occur.

2.4 Types of interview

To conduct an interview, there are basically 3 types of layouts to choose from: Structured, Semi-structured, and Unstructured. Each type has different characteristics that will do well with different targets of the researcher.

The first type is Structured interview. In this case, the researcher is the one who takes control of the whole process. The researcher will play an active role of giving out prepared questions which are usually short and straightforward. The position of the interviewees is very passive since they just have to answer those questions with the same fashion, and no wobbling to other subjects. Moreover, the researcher shall not interpret the questions to the interviewees (Stuckey 2013, 056–059). Because of the strict nature of Structured interview, it is preferable to be used by researcher when gathering quantitative data (DiCicco-Bloom & Crabtree 2006, 314–321).

The second type is Semi-structured interview. The fundamental difference between this and Structured interview is the power of the interviewees in the process. According to Stuckey (2013, 056–059), although the outline for the interview is set by the researcher, the way the interview heads to, is very dependent on the responses of the interviewees. In another word, the interviewees have more space to express their opinions and interests. The responses are not necessarily short and straightforward anymore, but they can convey more ideas and experiences of the interviewees. Therefore, it is very possible that the discussion can diverge from the originally set

outline. Moreover, the order of prepared questions is not necessarily to be followed by the interviewees (Stuckey 2013, 056–059). Just like Structured interview, the interviewer should prepare the questionnaires beforehand, yet give the interview as much flexibility as possible.

The last type to be mentioned is Unstructured interview. The border between a Unstructured interview and an informal conversation is very blurry. In such interview, the direction of the discussion can have spontaneous turns, greatly depending on the interest that could arise. That is to say, there are still guiding questions at first to get to the topic that you want to exploit. This kind of interview shows its advantage when the researcher wants to explore the point of view of the participants. Due to the 'conversational' characteristic of it, the participants may barely remember that he/she is taking part in an interview (Eriksson & Kovalainen 2008).

3 Theoretical Basis

3.1 Inventory control

Inventory can be understood as current asset of a company. In any forms, varying from raw materials to WIPs to finished products. Inventory is a kind of property as it can be turned into revenue. The most important role of inventory is to support sale activities of a company (CSCMP et al. 2014).

The most basic and traditional idea to control inventory is that every transaction will be recorded to a spreadsheet. The spreadsheet will contain columns for product names and their quantity, sold/shipped quantity, incoming quantity, and even return quantity from customers. This traditional way, however, requires tremendous time and effort of employees to keep track of every activities and is prone to human mistakes. Once mistakes happen, it is very difficult to trace back. (What is Inventory Control & Why Is It So Important? | Handshake n.d.).

In order to improve ability to control inventory, the more automated the tool of choice is, the less paperwork and excessive steps the process will involve (ibid.).

3.2 Inventory accuracy

Inventory accuracy is basically the compatibility between the electronic records and the records of real physical inventory that one company holds (Inventory Accuracy Definition n.d.).

According to Inventory Management Now a Key Battleground in the Digital Transformation of Brick and Mortar Retail (n.d.), Nick Finill, Senior Analyst at ABI Research said that: “Stores which have limited intelligence on the location and quantity of stock at the individual item level cannot expect to adequately serve their customers or successfully execute a competitive omnichannel retail strategy,”.

High inventory accuracy can help retailers achieve better service level, customer satisfaction, reduce loss of sales, and improve sale speed (ibid.). It is understandable that a company who has sufficient intelligence of their inventory can afford to response more strategically to customer’s demands, as well as to their replenishment plan.

There are many factors that could drive inaccuracy in inventory record, however it is human error and lack of technology the most common ones. In every process that has anything to do with handling of goods: receiving of shipment, entering numbers to inventory record system, picking goods for orders, putting away damaged goods, placing goods to wrong location, counting issues, etc., human errors can occur anywhere (Why are Your Inventory Counts Inaccurate? | Cisco-Eagle n.d.).

3.3 ERP system

Enterprise Resource Planning (ERP) is an integrated information system that consolidate the information and data of every department of a company into one computer system that is used throughout the company (Leon 2013; Ray 2011, 4). With ERP system, each department can communicate and exchange information with the rest of the company in an easy way (What is ERP system? An overview of ERP system - ITG 2018; LaBarre 2019).

The advent of ERP software is a breakthrough in the field of information technology. In logistics perspective, ERP application helps organizations and companies manage

their own businesses effectively from the very first stage of production planning to providing products and services to end users, the whole supply chain. According to Ray (2011, 10), if there were only large corporations that could implement ERP few decades ago, nowadays SMEs are already familiar with this system. Talking about the reasons why a business should implement ERP system, first we have to mention the benefits of it. No one can deny the benefits, which are numerous and varied, of implementing an appropriate ERP system for a business. The most popular benefits are mentioned as follows:

- *Increasing the ability to handle situations*: after-sales activities is being processed immediately after receiving the order, with Real Time Analysis function, the seller can identify problems that might occur suddenly and will have timely intervention and resolution in those situations. (What is ERP? | Enterprise Resource Planning Definition n.d.; Brief introduction about ERP system 2018).

- *Risk controlling:* Due to the use of an integrated system, shared information will be ensured with high accuracy, employees have common understanding, ensuring that each department strictly complies with the general regulations of the enterprise (What is ERP? | Oracle n.d.; ibid.).

- *Increasing production efficiency*: providing standardization and modernization for production processes, besides that, ERP system also helps businesses optimize available resources and reduce inventory significantly comparing to traditional management systems (ibid.).

- *Consistency, time savings*: When we use the same database system, we will get the necessary information accurately and quickly, allowing the employees have an overview, specific about the data shared by other departments. For example, when the Accounting department needs to know a specific information from the HR department, they send an email to the HR department and present the information that they want to have, then they spend time on waiting the responses, and HR department also spend time on searching for data to provide to Accounting department, however whether that data which

found out is the exact data that the HR department expect or not. Errors in the searching process may occur (Perkins 2019).

- *Improving data and information security*: in the past, each department within a company used separately management software, information security was implemented on each individual database software, now all data and information are integrated in 1 computer system, the security of the data will be enhanced (ibid.).

After analyzing the benefits of ERP systems, the more we understand why ERP is widely used. Obviously, ERP systems have all the advantages that meet business's requirements, for instance: cost saving, time saving, inventory reducing, productivity increasing, … making it easier for a business to achieve the success.

3.4 ERP Tiers: ERP System categories

Investment on ERP system is a smart investment, but it is also a risk. It has never been easy when any project is put into real life. Success on implementing ERP system is a process of effort of a business. Haddara (2014, 394–403) shared his point of view as follows ''ERP selection is a difficult and time-consuming task. [...] a wrong ERP system selection would either fail the project or critically dwindle the system and hurdles the company performance.''

In order to select the most suitable ERP system for an enterprise, setting clear standards is a must, that consistent with the requirements and objective aspects of that company. Hence, Tier of ERP systems is the first considered factor. If businesses are classified into 3 categories include large and international scale corporations, medium size companies and small size companies. Then ERP system providers are also categorized by 3 Tiers, Tier is classified based on the size and complexity of information data that the company itself uses the ERP system owns (ibid.). There are 3 Tiers of ERP systems, known as Tier 1, Tier 2 and Tier 3 are described as follows (The Difference Between ERP Tier 1, ERP Tier 2, and ERP Tier 3 2013).

- Tier 1: is the hierarchy of ERP software with the most complex, time-consuming in installation, user training and has highest setting price in 3 classes of Tier. The most typical software is SAP, Microsoft Dynamics and Oracle. This is

the segment for billion-dollar, multinational corporations, where the number of employees can be up to 500,000, it is difficult to manage parts and data using only traditional software. ERP software in Tier 1 is supposed to be the most complete and functional version, additionally, users will get global IT support. These applications can also solve the problems that multinational companies encounter are currency conversion, language, salary calculation for employees, product value calculation according to each country which has particular rules and laws in business and market aspect (The Difference Between ERP Tier 1, ERP Tier 2, and ERP Tier 3 2013; Perkins 2019; LLC n.d.).

- Tier 2: the architecture is less complex. Compared to the function, it is also less than Tier 1, but it is the most chosen package by many businesses because it still covers the requirements that a business needs when offering lower Total cost of ownership (TCO), and shorter time in implementation cycle. This segment has the attention of medium-sized companies and companies that doing their businesses in specific areas. According to Perkins (2019), ‘’Tier II customers can be standalone entities or business units (BU) of large global enterprises’’. The most Tier 2 ERP software used is Lawson, Epicor and Sage (ibid.)

- Tier 3: suitable for small-sized companies and startups. ERP software which in Tier 3 is known as an ERP system with the simplest structure, the shortest training user time because its interface is quite simple, easy to manipulate for end users, with the least risk when installing (ibid.)

Never assume that it is always best to choose the most full-featured type, the most important thing is what your company aims and needs. For example, a large corporation, they handle all processes in supply chain, they choose one type of ERP system in Tier 1, allowing them to optimize and efficient tracking all stages in whole supply chain. But for a retail company, they outsource supplier and transportation from other companies, their company only focuses on retailing, they don't produce anything by themselves, hence the question is Does that company need, for example Production Planning module in full functional version of Tier 1 ERP system? Spending too much money on things we do not use is a big waste.

At this step, company can limit the types of ERP software to suit the size of your company in hundreds of ERP types in IT market. A preliminary list of bright, suitable ERP software can be created. The pictures below will illustrate the feature availability and geographical presence of each ERP tier.

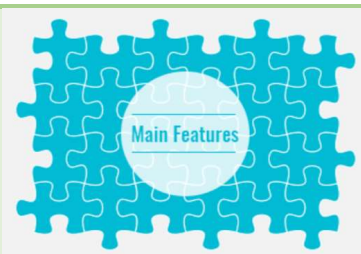
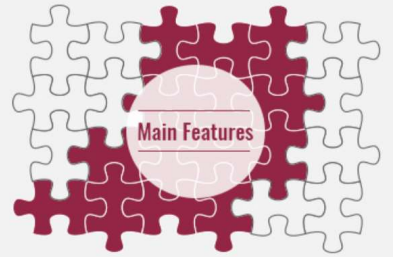
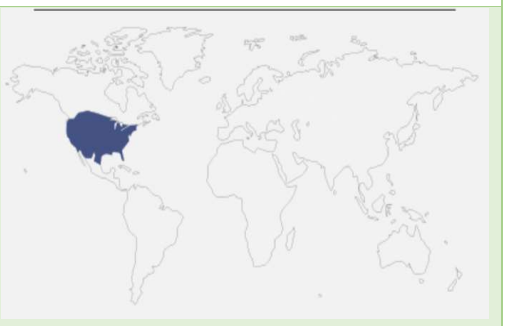
	Feature Availability	Geographical Presence
Tier 1	 (LLC n.d.)	 (ibid.)
Tier 2	 (ibid.)	 (ibid.)
Tier 3	 (ibid.)	 (ibid.)

Figure 1. Illustration of Functionality and Geographical Presence of ERP Tiers (LLC n.d.)

3.5 ERP selection criteria

The selection criteria of an ERP system must be consistent with the company's requirements and development strategic objectives. Failure in identification of selection criteria will lead to implementation failures of ERP system, which will have a major impact on the financial results and the use of human resources planning.

After zoning the popular ERP software according to the large or medium or small scale of the business – based on ERP tier, defining selection criteria is the next step.

According to Haddara (2014, 394–403), the selection criteria that need to be considered should include: Functionality, Technical aspects, Total cost of ownership (TCO) and company's budget, Support and service, and Compatibility.

First of all, *Functionality* is a prerequisite for all factors. Organization has to determine this factor before bearing in mind the next one. Organization needs to consider the functionality of each ERP system. We ask yes / no question in this element 'Whether this ERP system meets the company's requirement or not?' If the answer is yes, organization can take that ERP software into account on next step, otherwise this one should be removed from the list. (ibid.)

Secondly, speaking of *Technical aspects*, software and hardware features of ERP systems will be covered in this group. We are in the digital age, the software is improved and updated continuously, from the personal mobile application to the enterprise IT management software. Hence, the organization needs to discuss clearly with suppliers about updating the latest software as well as problems arising during use and when updating the improved versions. Besides, other aspects such as user-friendly interface, other supporting software needed, technical parameters ... should also be considered. (ibid.)

Thirdly, we talk about *Money*. The cost of installing ERP system is quite high, the more complex and features the software has, the higher the cost is. So, it is important to determine the company's budget, how much is the company willing to pay for implementation a new system? Calculating TCO in this case is necessary. TCO is the calculation used to calculate the total cost which includes fixed costs such as pur-

chase price, installation cost, maintenance cost, ... and hidden costs that the company has to pay in the process of owning the product or system within a specified period, usually 2 years, 3 years, 5 years or 10 years. (ibid., Uncover All Hidden Lifecycle Ownership Costs. Find TCO in 6 Steps 2016.) The following cost elements have been taken into consideration in the TCO calculation by Pitic L, Pitic D and Popescu (2014, 1374–1382) are ''license cost, implementation cots, development costs, training costs, costs with external consultants, maintenance for 5 years estimated costs, support for 5 years estimated costs, hardware and base software that need to be changed costs''.

The next factor to consider is *Support and service.* Enterprise needs support from suppliers before, during and after installing ERP system. Before implementation, the vendor offers helpful advices, provides organization test versions, discusses and negotiates about prices and services, during and after the implementation process is complete, ERP provider support the company on technical issues that occur, the process of upgrading and warranty…(ibid.)

Last but not least, ERP is an integrated system that is used for all departments of a company, not software for personal computer, so the number of computers used in the system can be up to 50, even 100 or more. Therefore, *compatibility of the system* must be considered. Compatibility includes hardware compatibility and software compatibility. When it comes to Hardware compatibility, we have to consider the compatibility of the chosen ERP system with motherboard, CPU architecture, ... that the company currently owns. Software includes operating software and other supporting software. The differences between operating systems will lead to different compatibility with the selected ERP system, such as the MacOS operating system of Mac computers, the Windows operating system of other computers, including 2 different version: 64-bit version and 32-bit version. (Kotiranta 2012, 64; ibid.)

3.6 Implementation cycle

Traditionally, a project to implementation an ERP system consists of 3 main steps: ERP adoption, Implementation and Post-implementation (Mahendrawathi et al. 2017, 216–223). Harwood (2003) divided these 3 main steps of ERP implementation

cycle into 5 small steps: Need, Vendor selection, Implementation, GoLive & review, Improvement which are presented in the figure 2 below.

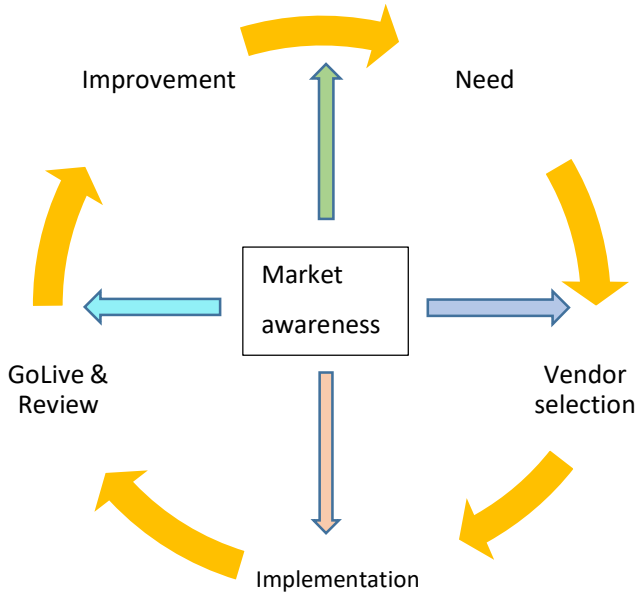


Figure 2. ERP Implementation Cycle (Harwood 2003)

According to Pitic L, Pitic D and Popescu (2014, 1374–1382), the main activities taking place in the first step of ERP implementation cycle – *ERP adoption*, include:

1. *Preliminary phase:* In this stage, company has to identify development goals, analyze available resources, investment costs for this project (find sponsors if necessary) and estimate the timeframes as well. The company leaders will make decisions on implementing the project, then select qualified people within company to form a team that is responsible for installing the system and select the leader of the team, also considered as project manager. The members of this group must be people from different departments, to make sure they have the most comprehensive and objective view of their area of expertise. (Pitic et al. 2014, 1374–1382)

2. *Analysis*: The team will evaluate, analyze the company's current size and situation, then create a list of the company's requirements and expectations for this new system, thereby zoning potential providers. (ibid.)

3. *Evaluation*: Based on the requirement list and potential providers list, the ERP selection team will contact those providers to ask for more details about the software, such as price, features, describe briefly about the scale, budget and the requirement criteria of company, even referring to the advices from the supplier's perspective and request a trial version. After the trial period end, the team will write a report on the technical specifications and features of the software. (ibid.)

4. *Negotiate*: In this step, the team with the leaders of the company will analyze the technical report of the trial versions and the detailed offers from suppliers such as price, support services during and after implementation, ... and select the most suitable ERP system for the company. After that, everyone will discuss about the transaction and sign a contract with the supplier. The company should identify the elements and tactics used in that official meeting to have a successful discussion. (ibid.)

After the company reaches the desired agreement with ERP vendor, the next stage will be the *Implementation* phase. This stage is divided into 2 small stages: Preparation for implementation and Implementation. At the *Preparation* stage, the selected ERP system will be tested in turn on each module, called ‘’Unit testing’’, then it will be run as a complete ERP system on all modules, this step is called 'Integration testing'. Next is the User training phase, which is considered an important Critical success factor (CSF) in the project. Users must have a general knowledge in the entire ERP system as well as in-depth knowledge of the module in their area of expertise, they will be guided and trained to use the system, familiarize themselves with the interface, learn how to solve common problems in the new system. In this step, the consultant is the person who responsible for training users. Consultant is an expert with many years of experience in ERP, they are highly qualified, able to solve critical issues in the ERP system, and is the only person capable of training end users. After all, finally, the Implementation phase - the transition from the current system to the new ERP system. (Somers & Nelson 2001, 10; ERP Implementation Planning n.d.)

After completing the ERP system installation, the company will step into *Post-implementation* stage. This process includes supporting from ERP vendor such as system maintenance and upgrades, monitoring information flow, assessing proficiency in using and resolving problems of end users while using ERP systems, therefore, ERP project manager, consultant and managers of each department will find ways to optimize the performance of the system as well as the end user. Talking about Post-implementation phase, Harwood (2003) presented his opinion as follows ''The number of problems that emerge at this stage are a reflection of the rigor of the process design and development activities'' and he advised that all users should ask the question ''Do the processes do what is required of them?'' (ibid., Harwood 2003.)

4 Data collection

4.1 The interview

In order to collect data for this case study, interview conduction is selected. It is crucial to know the current way of working inside target company as well as their problems, therefore, a number of staff from ThaiLai Ltd. is invited to take part in the interviews. The interviewees are from different departments and they hold important roles, which gives them an overall view of how the current process affects their team, as well as to draw a picture of inventory accuracy management inside the company.

The interviewer sent emails to invite potential participants and explain the purpose of the interview. The interviewer describes his thesis writing task, and the importance of having data to support his case study research. By doing this, the interviewees can grasp what specifications the interviewer aims at, hence, increased coherence and better motivation to support the author.

Along with gathering the necessary information from the case company for analyzing, it is also fundamental to have information from ERP suppliers. Such information to be gathered from them will serve the stage of analyzing the compatibility between ThaiLai Ltd.'s needs and what ERP vendors can provide. The means of gathering such

information is by having short consultation period with their sale personnel. However, this content about ERP vendors will go into details in the Evaluating ERP vendors part.

To conduct the interviews, 1 member of each department of Sale, Purchasing, Logistics, Warehousing and Finance is invited to be interviewed.

It has to be mentioned that the interview to be conducted will be semi-structured. Since it is the purpose of the researcher to draw information as well as opinions and reflection from the interviewees, semi-structured interview suits the best to this purpose.

The researcher had developed a number of questions in advance, and the questions were sent to the participants so that they can prepare the information they will need to retrieve from memory. Below is the question list for ThaiLai's personnel.

1. Can you describe the current way of handling inventory data in ThaiLai Ltd.?
2. What is the problem that you encounter during work?
3. Have you had any ideas to solve for the problem you have?
4. What is the common goal of your team for your current situation?
5. What kind of feature you would like the ERP system to have to support your work?

Table 2. Employee position and interview duration

Department	***Position***	***Duration of interview***
Sale	Team leader Saigon office	20 mins
Finance	Finance officer Saigon office	20 mins
Purchasing	Purchasing officer Hanoi office	20 mins
Logistics	Logistics manager ThaiLai Ltd.	25 mins
Warehousing	Team leader Saigon warehouse	25 mins

These participants from the company will be asked such questions so that a big picture of the company's current working method can be drawn. Each personnel from

each department might face different issues that might lead to some questions might be omitted.

4.2 Inventory accuracy management in ThaiLai Ltd.

ThaiLai is a retailer of imported products, therefore maintaining an efficient stock and providing good customer service are vital parts of its operation. The stock reporting activity is conducted every 2 weeks on Friday.

First of all, the employees in Hanoi warehouse will manually carry out their own real-time inventory counting. They will put the numbers into an Excel file and email it to Hanoi office. At the office, Logistics team has their own Excel file (so-called 'documented counting'). In the documented counting file, the available quantity of each item is calculated with the formula: current available stock = previous available stock + inbound stock – outbound stock. Whereas, previous available stock number is from the previous biweekly report, inbound stock number is from Purchasing team's notification, and outbound stock number is from Sale team. Hanoi Logistics team will compare the numbers from real-time counting to the documented counting. If the number matches, they will email the results to Saigon HO; if the numbers do not match, the real-time inventory counting will be used and further investigation on the difference is carried out. The same procedure is conducted by Da Nang and Saigon warehouses.

In Saigon HO, Logistics team gathers 3 reports from the warehouses and combine the information to get the finalized report. The report will then be stored in the office's computer data storage and a copy of it emailed to Purchasing team. There, decision on whether to create a PO is made, if a request of any specific product meets the minimal order amount of the suppliers.

The department who takes care of import documentations, transportation outsourcing, and goods receiving is Logistics department. Whenever a consignment from a supplier arrives in Vietnam, Saigon warehouse is always the first destination. At the inbound dock, Logistics employees perform an inbound quantity check and report it

to HO, also by mean of Excel and emails. If the quantity is correct according to the invoice sent by forwarder, the data is added to Documented Inventory Counting; if not, Logistics team will contact supplier and carrier for further action.

After that, the consignment will be broken into smaller batches and carried to two other regional warehouses. Receiving confirmations from 2 other regions would also come by emails.

In ThaiLai Ltd., Sale team has their own Inventory Balance (from now on, called 'Balance') sheet, to assess the situation on their own that whether they have enough capacity to fulfill coming demands and to discuss delivery time with customers. However, the record is Excel-based, it does not reflect any further information about the Balance except the history record from sale numbers and previous bi-weekly report. This creates a need of communication between Sale and Warehousing. There are some cases that one warehouse needs to support another warehouse with some products. That affects the correctness of the Balance greatly.

Having detailed description of how the tasks are divided to different departments, the chance of correctly pointing out the problems of the system is more likely and therefore, easier to find a suitable solution.

5 Data Analysis

5.1 Problem detection

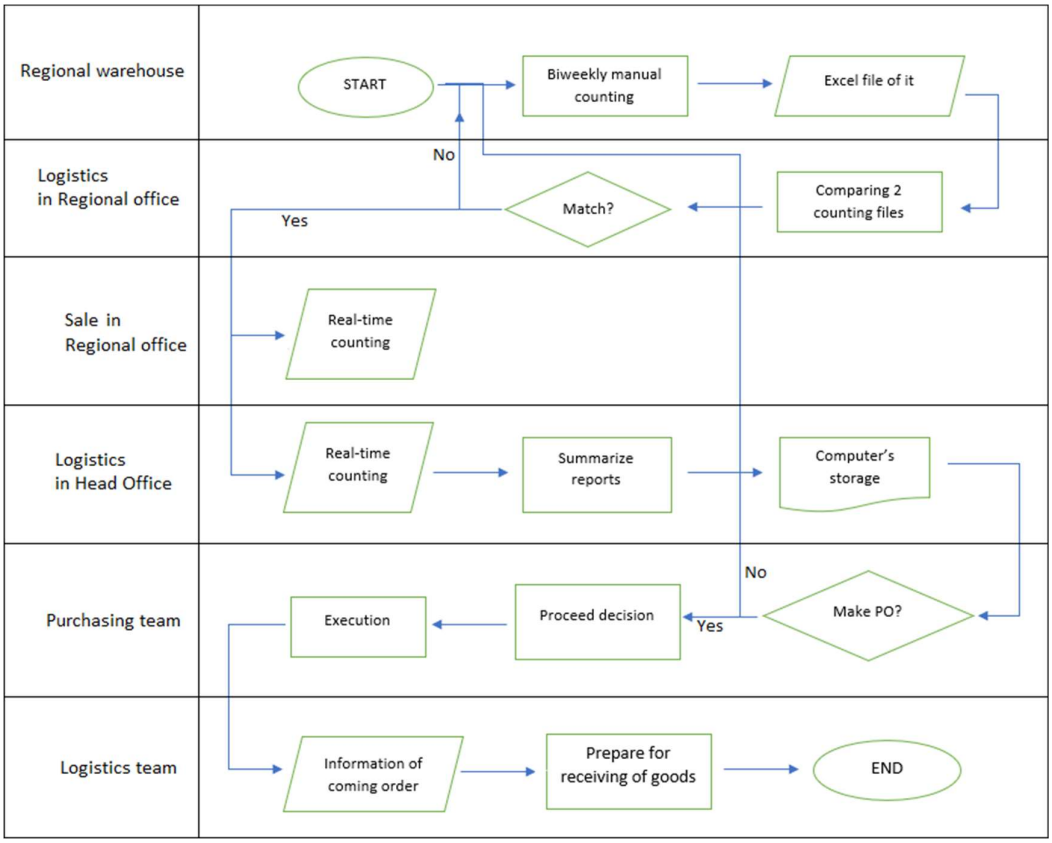


Figure 3. Process Chart Diagram (PCD) of inventory data flow in ThaiLai Ltd.

Based on the PCD that helps visualize the information flow regarding inventory in the company, it is easy to notice the lengthiness of the whole process, especially when taking account of information accuracy and internal communication.

The stage of gathering data from the regions across Vietnam is the hardest part. It contains many variables, 3 regional warehouses, 3 offices, the means by which documents being sent, the human intervention in those processes, etc. Even though this systematic way of ThaiLai's operation is working somehow for them at the beginning time of their business, it has been causing them troubles in the past 5 years starting when they decided to open regional offices and warehouses. An ERP system will help an organization with many things, however with ThaiLai, they specially expect a

whole lot for improvement of goods movement recording and stock accuracy from this desired implementation.

As there is no real common platform for all users and sufficient technology to record the flow of goods, many useless actions were required just to get some simple numbers. Here, the lack of technology causes the company uncertainty and confusion whenever the numbers from “documented counting” is different from the “real-time counting”. It usually results in plenty of times tracing back and checking all the papers. That means a hidden cost on labor utilization. Furthermore, even “documented counting” can be prone to human mistake when being conducted.

Another thing to look at is the means of exchanging information - emails. As much a wonderful and irreplaceable tool that email proves itself to be, information that flows between too many emails can potentially be mistakenly altered when it reaches the final receiver. As it can be easily understood that the more steps it takes, the more easily it is exposed to mistakes, without proper help of proper technology.

Moreover, when a deal is made between ThaiLai and its supplier (Purchasing’s perspective) or between ThaiLai and its customer (Sale’s perspective), either team has to send a notification to Logistics via email, so that they could arrange with transport companies. That will come to a point where it becomes difficult to manage all the tasks while maintaining clarity for Logistics.

5.2 Discussion on personnel perspective

After interviewing company’s personnel from different departments, some insights and opinions can be used as discussion points. By doing this, the expectation of a new ERP system can be drawn, and therefore enables the author to move on the ERP vendor selection stage.

> “Due to lack of a common network, stock visibility is very limited. In our Sale team, that possibly results in longer lead time for some received orders”

Every time ThaiLai had finalized an order from customers, Sale team would immediately deduct the sold amount into their own spreadsheet, and that is how they maintain their knowledge of the current stock availability until next biweekly report. In the past, it had happened that Logistics and Purchasing teams would inform Sale teams of each region about incoming amount of goods. However, the information sharing was irregular and the result of having their spreadsheet updated did not change their sale rate much. Hence, the informing of incoming goods stopped. But nowadays, when market competition is fiercer and demanding more of customer satisfaction, ThaiLai has realized what they can offer the customers if their stock visibility got better. Right now, limited visibility of the inventory has a major disadvantage on lead time. Each order from each different customer has a specific desired shipping date (upon customer's request). For example, there can be 2 coming orders, in which, the latter order has an earlier desired shipping date than the former one's. Knowing the coming amount of goods from internal warehouse exchange or updates from Purchasing, Sale team can know which order to prioritize, therefore enable shorter lead time for customers.

> "We tried to manage ourselves with balance updating by asking other departments. But most of the time, we barely had time and labor for that."

In a small company like ThaiLai, dividing such number of employees across the country makes each region self-dependent on what they have. They have to make the most out of the resources, hence most of the time, they encountered shortage of labor to do things that they considered "having-minor-influence" or irrelevant to their casual operation.

> "When it is time to conduct biweekly stock report, manual counting is what we do first. It is really troublesome if you look at it. We go count the stock, write the numbers down onto paper and type it into Excel afterwards."

The manual counting process can bare risks in every step. A person can make mistake when he/she counts big quantity of articles. In spite of the fact that physical stock counting is somewhat an inevitable process in any warehouse, mass counting of the whole inventory in one day, like in ThaiLai, makes the numbers more easily subjected to mistakes due to high workload and intense focus. Writing down the numbers on paper and then transferring them to Excel spreadsheet contain risk of typo if the record sheet is long.

> "When Purchasing team buys something, the coming date and quantity of the product can be available on the article details screen, and that all departments can know what is going on - I'd love to have such feature."

Such a feature seems very simple, yet it is helpful for decision making inside the company, that they can take place with more independence. Sale knows more the current, as well as incoming amount of goods, so that they can arrange the shortest lead time with customers; Purchasing wouldn't need to wait for biweekly report to make purchasing decision; Logistics know what is coming/leaving and contact transport supplier in good amount of time ahead; Warehousing could prepare space and at least organize the warehouse a bit better for coming stuff; etc. It is clear to see that reaction time decreases a lot, which is good for any organization.

> "Right now, it takes time to trace back if any errors were detected. A new system accessed by individual user IDs will hopefully give us a better chance of finding out the source of error to avoid repeating it in the future."

A general view of all the transactions done and the IDs that link to them will give the company ability to detect origin of errors. This will have long-term benefits since the managers will know the weaknesses of their employees, therefore being able to provide suitable training to improve employee's skills.

> "As much as it seems difficult for other departments just to get the correct inventory level they need, we in Finance find it more difficult to gather every information, correct information, there is in the organization to our department. Accounting is a crucial part of any Vietnamese organization, we need to calculate the numbers, and be ready for tax reports: 4 quarter and 1 annual."

From perspective of a business operating in Vietnam, even as in any other country in the world, tax report, profit and expenses calculating plays vital role for organizations. Each country has its own audit mode, and format of reporting. Finding a suitable system to put every information in one accessible place and being able to proceed following the tax rule of Vietnam is a priority of Finance department.

5.3 Company's Requirements

After conducting personnel interviews to gather necessary ideas of how a useful ERP system would look like to ThaiLai Ltd., it is the time to finalize the requirements of the company for this software. As being understood from aforementioned parts, stock accuracy-visibility, inter-department information sharing, and manual workload reduction are aspects that ThaiLai most expect.

For the reduction of manual workload and possible errors, warehouse team will be equipped with phone scanners for goods receiving. This type of phone scanner will have an app that links to the ERP system work frame (the connection is based on WIFI). Whenever goods come, the user will log in the app with their user ID and scan the barcode of the item package. Information such as product name and its quantity will be automatically added to stock balance – which everyone, who has an ID for the software, can see in real-time. However, quality and quantity are still to be checked manually. Furthermore, it should also contain 'damaged item deduction'. As when the goods receiver scans the barcode of product package, the whole quantity of the package is added to the stock balance. So that when the goods receiver noticed any damaged items when checking quantity, he/she can quickly use that function to deduct quantity of broken items out of the balance. The same goes for damaged items

found during storing in the warehouses, making sure that all real-time available stock is in sellable condition. The same goes for outbound goods movement, when it is time to prepare for outbound shipment, the ERP system can create a packing task for warehouse workers. Whenever a task is done, warehouse worker can confirm the task and the number of packed products will get deducted from the stock balance.

With less file transferring comes less possible mistakes. Hence, manual stock counting in ThaiLai's warehouses should take place less common. The warehouse workers will have more time, as well as less articles to count during the checking day. This would definitely ensure the quality of the counting.

The new software should also support the way Logistics, Finance and Purchasing team working together. Every PO made by Purchasing team, before having its product info added to article details as 'coming quantity', should be confirmed by Finance department. ThaiLai is still a small company, and it is a fact that they sometimes lack resources to purchase some expensive articles and the purchase of such articles is delayed until their customers pay them receivable. So that, having Finance approved the PO beforehand is very useful for the coming quantity to be correct and usable numbers.

Logistics teams will also need to have a module in the ERP system where they can organize the trucks, load volume and time recordings when goods come and go. Not only does it help with managing the tasks, but also with confirming the truck after unloading. If a truck is finished with unloading, the ERP user can confirm the shipment and the software will send notification to transport company. Transport service is another cost to the company; hence Finance has their way here also.

6 ERP Market in Vietnam

6.1 Choosing factors

As discussed above about ERP system categories, there are tiers of the software for businesses to choose, Tier 1, Tier 2 and Tier 3. From Tier 1 systems that correspond to having the most complex and diverse features, Tier 2 medium and less diverse, to Tier 3 with the most basic and suitable for small businesses. Considering the case of

ThaiLai Ltd., who see themselves as a small organization with roughly 70 employees, and based on the needs of their core activities, it is suitable to decide that Tier 3 will suit the best their needs and their financial capability.

When choosing an ERP vendor, selection criteria plays significant roles as grading keys. Therefore, the business can pick the best option in a pool of candidates. In the part 'ERP selection criteria' above, the author mentioned 5 key factors to choose a suitable ERP vendor in general viewpoint. Now putting that theory to ThaiLai Ltd. case, it will get clear for readers to understand their perspectives.

- Functionality: This criterion comes pretty simple for ThaiLai case. The company does not have any stores. Therefore, the system does not need to link to any cashier software, store management system, etc., its main tasks will rotate around the inventory, goods buying - selling, logistics activities and financial accounting of the company. That is to say, functionality will be at adequate level since not that many functions are expected, hence ordinary features will do.

- Technical aspects: Latest version update and bug fixing are mandatory to ThaiLai when considering any software supplier. Another thing is that the company value user-friendly interface, so that every personnel can do his/her tasks on the system sufficiently without unnecessary confusion.

- Money: The budget for the system is also limited. ThaiLai reveals that they have a range from 15000 to 20000 USD for this implementation. As well as other costs, such as buying phone scanners, buying new hardware if needed must be reasonable for the additional 2000 USD budget.

- Support and Service: Pretty much the same as Technical Aspects, the company expect help and support from ERP vendor when any issues pop up. On-time and quick-responding supplier is useful for businesses that have their first ERP software implementation.

- Compatibility of the system: ThaiLai will compare the requirements from ERP suppliers to their own hardware, identifying whether further purchase of new

CPU is needed. Moreover, ThaiLai will have to buy phone scanner since they have none of those.

6.2 Main sections of vendors

In the recent 10 years, Vietnamese companies have applied software, that are other than Microsoft Office package, into business managing. Hence, the implementation of ERP system is not any longer a strange and luxurious thing like many years before, when only big companies had a chance to have assistance from this kind of system.

In Vietnam, the ERP market is divided into 2 section: Domestic ERP suppliers and Foreign ERP suppliers. Each section has its own characteristics, that is going to be mentioned briefly after.

Some of the foreign suppliers in Vietnam are FPT, Citek, Naviworld, Odoo, TRG, CMC and so on. The advantage of these suppliers is that they are extremely experienced in building ERP system in general and implementing this system around the world from the early years of the 21st century. The system from these suppliers is designed with international standard of built-in Finance module, which is most of the times does not work according the accounting regulation of Vietnam. Besides, adaptation of ERP systems from foreign vendors costs lots of money, which can go up to few hundreds of USD. Moreover, consultation fee as well as time and effort to deploy such software are higher than from domestic suppliers (ERP vendors in Vietnam: Which is the best option? - ITG 2019).

Even though domestic ERP suppliers do not have as much experience as foreign suppliers. They, in fact, know very well the needs of domestic businesses and the rule of finance in Vietnam. Moreover, domestic suppliers provides much more affordable and SME-tailored systems (Solution 2017). There are a few popular and reputable domestic suppliers, such as Diginet, Fast, LacViet, ITG, and Asiasoft (The best ERP vendors in Vietnam 2018).

There are many other ERP vendors for SME section, but the mentioned suppliers are considered the best in market now and are the candidates for ThaiLai's selection.

6.3 Chosen candidates

In order to get to know better the products and services that ERP vendors provide; short consulting was requested to get essential information from sale person of each vendor. The author had sent consultation invitation to the sale people via emails, but only 3 vendors replied and agreed to discuss. Therefore, the candidate selection will proceed with SureERP (from LacViet Computing Corp.), 3S ERP (from IGT Solution), and Asia Enterprise (from AsiaSoft Solution).

The means of discussion was by phone call. The author described the needs of ThaiLai and discuss with vendor representatives on how their products will comply with the 5 key factors ThaiLai use to consider an ERP package as suitable. This discussion provides the author basic knowledge about the vendors so that further grading of the vendors can be accomplished. The information gained from the discuss will serve in the comparison part.

7 ERP Supplier Comparison

7.1 SureERP

The system is developed by LacViet Computing Corp., who has approximately 20 years of experience designed software used in business management.

- Functionality: SureERP can integrate business processes from all departments in one environment. The system therefore satisfies the need of ThaiLai for functionality as features of the system can be tailored according to desire of the company.
- Technical aspects: The system is developed on the base of cloud technology. SureERP can run on multiple database server: SQL, my SQL, Oracle, etc. The software has capability to have frequent updates, ability to expand and modify according to future growth of business and have a user-friendly interface.
- Money: For a business with 6 operating departments, and a need for 30 user IDs, the suggested price for the ERP package is between the range of 10000 to

15000 USD, which is in the acceptable range of ThaiLai. Training time for the system is about 1 month.

- Support and service: The offices of ERP supplier are in same cities that ThaiLai offices locate, support can be quickly obtainable. Warranty of the system lasts for 2 years.
- Compatibility of the system: SureERP does not require anything special from the computer through which it is used. A normal computer with Window 10 64-bit version running is favorable for the software to operate on.

7.2 3S ERP

- Functionality: The software is dedicated mostly to medium-sized companies. It is an all-in-one package that governs almost every activity there is in an organization. However, the segment that this system focuses on is medium-sized companies with production activities. The representative of the vendor said that it is not a usual thing that the vendor will simplify their solution to suit small companies.
- Technical aspects: The user is promised to have frequent updates and continuous bug fix for at least 7 years, ensuring that the system works at its best for several years to come and to provide the user modern competitive edge in fierce market nowadays.
- Money: Implementation cost can rise from 20000 to 30000 USD. In-depth consulting fee should also be taken into account. The software will require about 2 months training time for user.
- Support and service: ThaiLai's HQ in Saigon and office in Hanoi can easily have support whenever they need, as the supplier has their bases there. With this high cost option, ThaiLai also expect that if they choose this vendor, the service level should also be high – which IGT promises that they, with patience, always do their best to support business who had first ERP system. The package warranty lasts 2 years.

- Compatibility of the system: ES ERP does not require any special specification from client's own resources other than computers with core-i5 CPU and Window 10 for best compatibility.

7.3 Asia Enterprise

- Functionality: Asia Enterprise can be tailored according to client's needs, and the number of users can be added without paying additional fee. The target group for this system is SME, and specially small-sized retailing companies.
- Technical aspects: Persistent system updates and improvement is guaranteed to be the priority of AsiaSoft, always keeping the software running smoothly and sufficiently. In-use database is MS SQL 2008.
- Money: The cost of Asia Enterprise package for ThaiLai is estimated around 15000 to 18000 USD. Besides, the ERP vendor will not charge consultation fee. As the business grows, adding more features to the package does not cost much either, typically 4000 USD for function expanding.
- Support and service: AsiaSoft locates in Saigon, Da Nang and Hanoi, just like ThaiLai Ltd. Access to technical support or maintenance service is easy and quick to obtain. Asia Enterprise has 3-year warranty
- Compatibility of the system: Computers with normal CPU that works well for office purposes will do. Core i5 CPU and 64-bit Window 10 will make sure the software run smoothly.

8 Candidate analysis

In this section, candidate analysis will be based on a grading system. The desired result of this grading process is to select the ERP vendor with the highest score to be the potential ERP supplier of ThaiLai Ltd.

8.1 Key factor grading

To begin with, the author will weigh the key factors that are used as criteria to select the software (see 3.5). The scale used here is from 1 to 4; whereas 1 means having the least influence, and 4 means having the most influence. The values obtained will serve the final step of grading each software.

Table 3. Grading of key factors

Key factor	***Score***
Functionality	3.5
Technical aspects	3
Money	4
Support and service	3
Compatibility of the system	2

Functionality: Even though functionality is the first factor to consider when selecting a vendor, ThaiLai's basic needs easily make all the vendors eligible to fulfill them. Therefore, being important and highly possible leads to score of 3.5 for this factor.

Technical aspects: Having an up-to-date system ensures daily works can be done with the least possible technical issues. User-friendly interface is important as well. In ThaiLai, there are some middle-aged employees who are not very good at computing. Changing their familiar way of work to something new might cause necessary difficulty for them if the interface is too complicated to use. Therefore, a score of 3 is given to this factor.

Money: After short consultation with ERP suppliers, the author noticed that the ERP packages they provide have lots of similarities and they all can fulfill the requirements from ThaiLai. That is when realization about importance of the cost becomes

very clear. ThaiLai has a limit for the budget to purchase an ERP package. If other criteria can be met without difficulty, the cost of the packages will influence the final decision considerably. Therefore, the high score of 4 is given to this factor.

Support and service: For a company that has no experience in using any ERP system before, some confusion and mistakes are inevitable. Having support and service at hand is definitely important. However, since ThaiLai has their offices in the big cities of Vietnam, where the vendors also have their bases in, communication, user training, technical supporting, maintenance service, etc. is not a difficult task. Therefore, the score for this factor is 3.

Compatibility of the system: The ERP systems mentioned above do not have any special requirements for the working computers at ThaiLai. In fact, ThaiLai changed to new computers 2 years ago, so that all the machines are in good working condition. Because this factor is met easily, the score for its importance will be 2.

8.2 Candidate grading

In this section, each ERP system will be graded upon different selection criteria (5 key factors). The score given to the system will range from 1 to 5. Whereas, 1: least eligible; 2: partly eligible; 3: eligible; 4: largely eligible; 5: most eligible.

Table 4. ERP system grading

	SureERP	3S ERP	Asia Enterprise
Functionality (3.5)	4	3	5
Technical aspects (3)	4	4	4
Money (4)	4	2	4
Support and service (3)	5	4	5
Compatibility of the system (2)	4	4	4

Functionality: The reason Asia Enterprise got 5 is because it is from a vendor that has lots of experience in designing system for small retailer. 3S ERP belongs to a vendor whose majority of client is big-sized company, and the features of their ERP package

is not very flexible, score for this system will be 3. SureERP's focus is on SMEs also, however comparing to Asia Enterprise who is confident that they are specialized for small retailing companies, SureERP gets score of 4.

Technical aspects: The systems got same score of 4. As long-term software updates and bug fixing are guaranteed to be important aspect of the packages. User-friendly interface is basically the aim of every ERP system developer. However, not until real-life experience, could one say much about how 'user-friendly' a system actually is. An equal score goes for all candidates.

Money: SureERP and Asia Enterprise got score of 4 each, since the estimated cost is in the range of ThaiLai's budget. The score is not 5 because the implementation has not taken place yet, possibilities of hidden extra cost might show up. 3S ERP got 2 because the cost can be high and hidden additional cost is a possibility.

Support and service: SureERP and Asia Enterprise got score of 5 for each. The reason is that those 2 vendors have offices in 3 cities – same cities that ThaiLai locates. Training for ThaiLai employees can be easier because of geographical advantage, and technical support can be reached more easily. 3S ERP got score of 4 because they only share 2 cities, where they base, with ThaiLai.

Compatibility of the system: The 3 systems got same score of 4, as they all require pretty much the same thing, and that ThaiLai's own equipment can fulfill the requirements since ThaiLai had bought new good equipment not so long ago.

The final result of candidate selection is described by the matrix below.

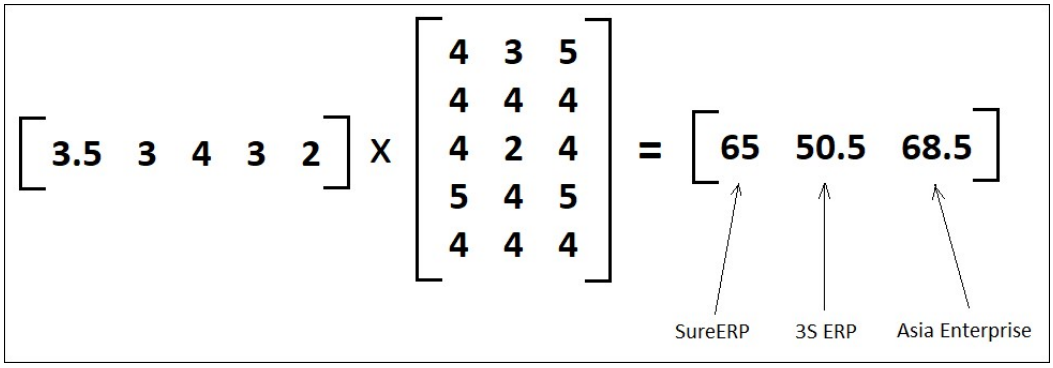


Figure 4. Final result of ERP grading

From the results, it is a clear difference between 3S ERP and the remaining candidates. Therefore, SureERP will not be recommended to ThaiLai as a potential supplier. Although Asia Enterprise has higher score, the difference isn't considerable. Hence, both SureERP and Asia Enterprise will be recommended to ThaiLai Ltd.

9 Conclusion

9.1 Answering research questions

This thesis aims to identify the problems that occur during information sharing process in ThaiLai Ltd., specially accuracy and visibility of inventory – which ThaiLai considers their biggest concern at the moment. The data about ThaiLai's way of work was collected by means of interviews. By conducting interview, a picture of how data of inventory balance flows between departments, and insights of what could have gone wrong can be drawn out. Also, by the interviews, the author know the expectations of ThaiLai's employees of the ERP software that could facilitate their daily work and enhance proficiency. An ERP vendor analysis was made to find out the candidates with best capability to fulfill ThaiLai's needs. During research and progressing in this study, the research questions have got their answers.

What features of an ERP system does ThaiLai Ltd. expect?

ThaiLai Ltd. has been having lots of issues regarding their inventory accuracy and visibility. Information sharing inside the company has been very limited and can easily convey errors. The company, therefore, expect the ERP system to provide a common environment where multiple parties can modify the inventory balance, and other parties can see that data in real time. The system will serve 5 departments Finance, Warehousing, Purchasing, Sale, and Logistics. Each department will have their own module and each module has a connect to the others. The system is also expected to help Finance to get their tax report and expenses calculation done more easily. Sale-Purchasing-Logistics-Warehousing will have better influence on each other, and manual workload is decreased as much as possible.

Who will be the potential ERP vendors for ThaiLai Ltd. in Vietnam?

After choosing the selection criteria for ERP system, a grading of their importance has been made to determine which criterion has the most and least influence on decision making. On the same token, each ERP system was evaluated based on each selection criterion and was given score. After finalizing the results, Asia Enterprise is the most suitable system for ThaiLai; and SureERP came as second place. 3S ERP is not recommended to be a potential choice.

What Inventory-oriented improvement an ERP implementation will give ThaiLai Ltd.?

Inventory visibility was never something ThaiLai is confident about, even though they have been surviving on this way of working for quite a while. By implementing ERP system, the departments will be more proactive in their own tasks. Knowing up-to-date data will give each department more independence on decision making. For example, Purchasing will know better of stock level, to order and making purchase plan in advance, preventing from loss of sale. The coordination of the departments will be smoother, facilitating and improve processes. Not only this will help the business itself, but the employees will experience a much better working method and get motivated to perform better.

9.2 Research critique

This research was done focused mainly on the flow of inventory data, logistics activities around it, and the influence of it inside the organization. Its effect on HR and Finance has not yet been deepened. Therefore, a separate research on the ERP system and implementation influence on other aspects of the company needs to be done, so that ThaiLai can have better decision on the chosen candidates, and on the implementation in general.

Due to the nature of Vietnam ERP companies which does not usually talk about prices, and giving free discussion on their products if the person who contacts them does not belong to any native companies where they see potentiality of using their

products, it has been very difficult to obtain information about the systems. Therefore, with best attempt and effort, data was collected and with major limit that can be seen easily.

The research serves as a steppingstone on seeing the big picture of ERP implementation having its impact on inventory management and logistics activities rotating around it.

9.3 Reflection

As a person who had studied about ERP system in JAMK UAS, and as a working person who is using ERP system every day at work, I fully understand the importance and its major impacts on how an organization can make the most out of transparency and readiness of real time data. This study was done with very limited resources and support from parties involved, yet the final results according to my opinion is the best that I could have done.

During making the thesis, I have learnt so many new things that I do not even think I might need to know or to use. This serves as a course in my bachelor program, yet at the same time teaching me to see facts in a more analytical way that I had never done. With this thesis, I hope the host company can save some time researching and thanks to this thesis, they can imagine a big picture behind this system called ERP and the implementation that they want. In order to accomplish something, you have to have an image of the results, of how it will look like. I hope with the study, along with another individual research on the system's influence on Finance and Human Resources to done in the near future, ThaiLai Ltd. will have their answer of what they need.

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