ORDERING PROCESS IMPROVEMENT
BY DIGITIZING DOCUMENTS

By
SATITA PONGRIYAWATTANA

Submitted in Partial Fulfillment of the Requirements for the Degree of
MASTER OF SCIENCE IN SUPPLY CHAIN MANAGEMENT

Martin de Tours School of Management
Assumption University
Bangkok, Thailand

August 2016
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Declaration of Authorship Form

I, Satita Ponriyawattana, declare that this graduate project and the works presented in it are my own and had been generated by me as the result of my own original research.

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I confirm that:

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3. Where I have consulted the published work of others, these are always clearly attributed;
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5. I have acknowledged all main sources of help;
6. Where the project is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
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Assumption University  
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Master of Science Program in Supply Chain Management

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I confirm that this project has been carried out under my supervision and it represents the original work of the candidate.

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(Dr. Srobol Smutkupt)

Date ________________________________  
Dr. Tony 20
ACKNOWLEDGEMENT

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Satita Pongriyawattana
Assumption University
August 2016
ABSTRACT

This research study is about the improvement of approval lead time of ABC Company which focuses on Contracted Partners. The ordering process is currently approved by hard signatures on the documents which causes the long approval and delayed deliveries to customers.

The office automation concept is used to improve the approval process. In this study, data between October 2014 and March 2015 were used. It was found that the approval lead time took 13 days on average to process the customer order. This long period would create customer dissatisfaction and lost sales opportunities to ABC Company.

The trial process was implemented during January 2016 to June 2016, by replacing paper based communication with PDF Exchange application and digital signature. Electronic mail is the means of communication and response for this process by differentiating the customer order e-mail from daily inbox e-mails to create the awareness of the approver. The result showed reduction of approval lead time from 13 days to 8.6 days. Office automation and digital signature can help improve the order processing at ABC Company.

At the end of the research, the researcher aims to improve the ordering process of the Contracted Partners of ABC Company to increase customer satisfaction and reduce the operational process.
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Master of Science in Supply Chain Management

Form signed by Proofreader of the Project

I, Joseph Philip Chan II, have proofread this master project entitled

ORDERING PROCESS IMPROVEMENT BY DIGITIZING DOCUMENT

and hereby certify that the verbiage, spelling, and format is commensurate with the quality of internationally acceptable writing standards for a Master Degree in Supply Chain Management.

Signature

Date
CHAPTER I

GENERALITIES OF THE STUDY

1.1 Background of the Research

ABC Company is a subsidiary of a company with headquarters in Germany. In Thailand, ABC Company only imports finished products from factories located around the globe and sells in Thailand via Contracted Partners / Distributors, Global Accounts and End Customers. Two thousand eight million baht was achieved last fiscal year, and sixty percent of total volume contribution comes from distributors, also called “Contracted Partner” or “Distributors”.

In order to maximize customer satisfaction and minimize the cost of the operation, the company division faces some challenges in terms of order processing. In the current situation it takes some time to process the documents, to print out, and get the signatures of authorized persons, compared to other international competitors who are perhaps using paperless technology.

The process and the study of Digital Signature approval is selected to help and of course maximize customer satisfaction in terms of delivery and also reduce the cost of operation. Also it provides more flexibility for the approver to work outside the company.

1.2 Statement of the Problems

ABC Company faces a long approval lead time in the ordering process of the Contracted Partners. Therefore, this study aims to reduce the processing of orders from the Contracted Partner. This could help to improve the delayed delivery and maximize customer satisfaction. To see the root causes and the problems of this long approval lead time, As-Is ordering process work flow needs to be addressed.
Figure 1.1 AS-IS Order Processing Flow and Approval Document Flow

AS-IS ordering process and approval document flow

Customer
- Enquiry

Sale Engineer
- Review
- SAP Quotation
- Technical support?
  - Yes
  - No
- Quotation Package
- Approve 1
  - Approve 2
  - Product Clarification
  - Approve 3
- SAP SD no.
- PO to Factory
- Approve 4

Source: ABC Company (2015)
Figure 1.1 shows the As-Is ordering process and approval document flow of ABC Company. At least four approvers are required in order to process the order and approve the documents. The lead time shows the number of days that personnel receive, review, and approve or process the documents to the next person.

Table 1.1 Process Lead Time

<table>
<thead>
<tr>
<th>Process</th>
<th>Function</th>
<th>Lead Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review Customer Quotation</td>
<td>Sales Engineer</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Prepare Quotation Package</td>
<td>Sales Engineer</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Technical Clarification</td>
<td>Product Manager</td>
<td>1-2 days</td>
</tr>
<tr>
<td>Document Review and Approval</td>
<td>Sales Engineer, Sales Manager, Product Manager, Commercial Control</td>
<td>3-4 days</td>
</tr>
<tr>
<td>Document Review and Approval</td>
<td>Division Lead and Division Controller</td>
<td>1-3 days</td>
</tr>
</tbody>
</table>

Source: Author

Table 1.1 shows the total lead time of processing orders would take, at least six to seven days from receiving customer order until the order is processed and sent to the factory in Germany. As a result this affects the supply chain of ABC Company which provides delayed delivery and customer dissatisfaction. The four-eye principle is applied to all approval required documents at ABC Company. Any document must be approved by at least one Commercial controller and one Sales engineer. Authorized level will be set to each employee once they are employed, based on their position level and function which is approved by the Human Resources Department. At ABC Company they have 4 levels of authorization and each level has limitations of authority. The forth level is the lowest and the first is highest which are the CEO and CFO of the company. The limitation of each level is stated in the signature guideline of the company for each topic of content.

Currently the ordering process is from the enquiry till invoice is made to customer. The company uses papers which show the approval of different leaders for each customer order, no matter how much is the value. It takes a long approval process to get
a customer Purchase Order (PO). The order package of documents to be processed at ABC Company composes of the following documents.

The first document is order received form (see Appendix A). This document will represent all the basic details that back office requires in order to process the order such as customers detail (Customer name, SAP no., Contact person’s name), basic detail of the delivery (Inco-term, Vendor no., Customer delivery place, Partial shipment), and terms of payment. The second is calculation sheet (see Appendix C). This document is internally used only. It shows the costing calculation of each product in table form by including material cost, logistic cost, operational cost, then customer selling price. They are separated into parts: material part, logistic cost, and overhead cost. Therefore this document will show the planned overall margin of a customer order. The third is customer purchase order. This document shows customer requisition order. The customer will send a purchase order to Sales support or Sales engineer directly. The Bill of Material or BOM (see Appendix B), will summarize the calculation with details of product, part number, the quantity ordered, and selling price. This document summarizes what ABC Company sells to customer. The last document is shipping instruction (see Appendix D). This document is required in case the Inco-term is not DDP term (Delivered Duty Paid). It requires the customer to fill out and to know the detail of shipping such as consignee, notified party, delivery place, and price.

These are called order package, each person with authorization has to make a hard signature on the documents. Each order requires at least the Commercial controller and Sales engineer, not including the signature from Sales support and a higher level if the margin is lower than the company guideline. There might be some orders that the company can gain in the competitive market by competing with strategic price. These orders would need also a high level approval from the Commercial controller and Sales manager.

Any order that sells with low margin than the business target agreement would have to get a higher level of approval, unless that order cannot be processed or rejected. According to the company regulation and guideline each order package needs approval by each authorized person and the researcher found that it takes time to get approval and processing of the order. Some orders are missing or delayed or pending in case the
authorized person is not available. ABC Company is using System Application Planning or SAP program as a major Enterprise Resource Planning or ERP software to process all data from booking customer order until issuing invoice to customer, plus the issuance of Electronic Data Interchange or EDI Purchase Order to the factory in Germany. For this study the researcher aims to answer the research question “How can ABC Company improve the order processing lead time and reduce its operation cost?”

1.3 Research Objectives

1.3.1 To shorten the order lead time from customer query till the order is processed and sent to the Factory to maximize customer satisfaction
1.3.2 To reduce operation cost by using existing tools and technologies and adapt with the digital signature process.

1.4 Scope of the Research

The researcher focuses on the only order processing of Contracted Partner/Distributor channel. The Contracted Partners of ABC Company are normally called Partners or Distributors but for formal term or in the agreement “Contracted Partner” will be used. Contracted Partners are companies that have commitments for certain annual target to ABC Company. The commitment agreement signed by the Contracted Partners with ABC Company provide them privileges such as pricing, product support, and marketing support, compared with other companies. The total volume will be sixty percent of total sales volume. The researcher will study the current flow of order of Contracted Partner, from customer query till Factory. The researcher hopes to eliminate the long process and redesign necessary points to shorten the process and help improve the order management. Interviews of related personnel in the process may be conducted to know the current status, the bottleneck of the current flow, and how the related personnel want the order process should be.
Figure 1.2: ABC Company Sales Channels

Figure 1.2 shows the proportion of Sales of ABC Company, separated by percentage of the Sales volume. From the actual sales, sixty percent of the total sales volume is awarded to Contracted Partners.

1.5 Significances of the Research

The researcher intends to redesign the ordering process of Contracted Partners order to ABC Company to solve or reduce the order processing lead time. By adopting and applying office automation and digital signature to digitalize the documents, the researcher hopes to improve the ordering process lead time, provide customer satisfaction on delivery time, and eliminate the unnecessary process in the current situation. The researcher also introduces business process improvement model for other business owners to identify their business process problem or bottleneck and find the root cause of their problem. After implementation of these mentioned concepts, the researcher hopes the companies to have improved lead times and reduced operation cost. This research can also be used as reference for other projects and companies.
1.6 Limitations of the Research

This study is based on the ordering process of Contracted Partners Sales channel to ABC Company that emphasizes on reducing the order lead time and eliminating unnecessary process of the current work flow. All data and information come from real data and situation, real practical situations, and customer requirements. It may not be possible to implement to other projects or companies. The limitations concern would be the cooperation from the operation employees among the team from different functions. Another limitation is the available time of the team members. The changes of the new process needs a lot of time in the beginning. Cooperation of other parties in the whole chain depends on the company management decision.

1.7 Definition of Terms

Electronic Data Interchange
This is an emerging type of standardized inter-organizational information system (Wang, 1995).

Enterprise Resource Planning
This is a business process management software that allows an organization to use a system of integrated applications to manage the business and automate many back office functions related to technology, services, and human resources (Umble, Haft, & Umble 2003).
CHAPTER II

REVIEW OF RELATED LITERATURE

In this chapter, the objective of the study, statements of problem, limitations of the research, significance of the research are explained. This chapter presents a review of literature, researches related to this study, and research framework. It includes an explanation of key concepts, and previous studies which support this study.

Literature and previous studies had helped in finding solutions to different company problems, so the scope of this chapter is literature concentrated on paperless ordering, digital signature, and public key interface.

2.1 Document Automation

Finch, Flanagan, and Marsh (1996) said that over the years, paperless ordering has done a big role of our online ordering since the internet was invented. The researcher will bring the importance of automation to improve the supply chain process at ABC Company. The benefit to the company is to increase opportunities and reduce its supply chain management cost.

At most offices today computers are used daily by most employees. However the presence of computers has not radically reduced the use of papers. Employees still use papers with ease. They may write or draw within a personal computer but then print them on a piece of paper.

2.1.1 Background

Finch, Flanagan, and Marsh (1996) said that document automation (also known as document assembly) is the design of systems and workflows that assist in the creation of electronic documents. These include logic-based systems that use segments of pre-existing text and/or data to assemble a new document. This process is increasingly
used within certain industries to assemble legal documents, contracts, and letters. Document automation systems can also be used to automate all conditional texts, variable texts, and data contained within a set of documents.

Automation systems allow companies to minimize data entry, reduce the time spent proofreading, and reduce the risks associated with human error. Additional benefits include time and financial savings due to decreased paper handling, document loading, storage, distribution, postage/shipping, faxes, telephone, labor, and waste.

2.1.2 Document Assembly

Darwish, Saki, Sahraei, Zakrifar, and Talebi (2014) stated the basic idea of document assembly is to replace manual filing of the document with template based system. Nowadays there is a more advanced document automation system that allows users to create their own data and rule without the need of programming. Document automation software has the ability to automatically fill in the correct document variables based on the transaction data. In addition, some document automation software have the ability to create a document package where all related documents are contained into one file, making updates and collaboration easy and fast.

2.2 Office Automation System

David, Conrath, Higgins, Irving, and Thachenkary (1983) said Office Automation System is computer-based communication and information system that aims to improve the efficiency and productivity of organization operational processes. Cheng (1988) mentioned about the benefits of office automation system, how it helps shape the business process and managers and professionals for saving their half a day routine paperwork, allowing them for more time in administrative and managerial tasks. Cheng also has mentioned that communication by electronic mail has eliminated some meetings and they are focusing to cut down on missed phone calls, message writing, and other numerous frustrating issues. In addition, the calendar function of the system eliminates the phoning and paper works normally required to arrange meetings. From the research study it was also found that employees using electronic mail as a telephone and meeting
planner will spend an average of 4.8 hours a day communicating, a decrease from the 5.5 hours as they previously needed (Cheng, 1988).

2.2.1 People and Automated Office System

Although automated office systems have the potential to increase office productivity, people remain the most crucial part of any office system. As a result, management must make all efforts to ensure that the implemented automated system will be accepted and used effectively by office personnel in order to achieve the desired productivity gains. There are changes resulting from the introduction of automated office systems. Gary (1995) said that changes take place in work procedures, schedules, job functions, and environments. In other instances, changes have met resistance. For example, rather than use electronic mail, a manager still prefers to use messengers to send memos around. It is important to anticipate such resistance to change so that plans can be developed and steps taken to minimize its resistance. Education is another key factor to gain user acceptance of automated office systems. Training program should be designed to support particular office automation efforts and to familiarize people with advanced office systems. It is also advisable to organize roundtable discussions with users and public newsletters to explain new systems and their applications.

2.2.2 Advantages of Office Automation

Darwish, Saki, Sahraei, Zakrifar, and Talebi (2014) said the direct benefits of office automation includes increase of yields and saving in time and labor which can better control the work because there is less division of labor. Secondly they use less time to transform or convert the information from one form to another. Finally, a non-productive activity such as filing and record keeping becomes less important. An indirect benefit of office automation is it is non-quantitative and immeasurable, but could help organization through profitability and long term growth. These benefits are, they use less third party agencies to provide copying, printing, and other similar matters. They increase employee effectiveness and job satisfaction. They help to have a greater customer satisfaction because they provide timely and quicker response of information and service. It also provides competitiveness to the company or organization for the use of information resources and necessary capabilities in responding to the changes and
opportunities. Denise (1988) had described about five cases of how different organizations manage and deal with office automation. The researcher discusses two of these cases.

**Case I: International Banking Department**

All-in-One integrated office system was adopted by an international unit of a major financial institution. The international unit includes operation teams located in New York and the Far East and the integrated system included electronic mail, office processing, desk management, and access link. A well respected member of the Asia Pacific staff was involved in the feasibility study. All implementation team was set up and devoted their full time to the project in the trial phase. Then an experienced management information system person was hired to serve on the project team. A two period trial test was conducted to debug the communications equipment, software, and system configuration (Denise, 1988).

From the trial period, the result of the implementation impressed the manager and staff. Communication and performance were improved with a significant better communication and coordination within the community. New career path opened up for staff as opportunities for job enrichment and increased work involvement emerged (Denise, 1998).

**Case II: The Office of the U.S. Special Trade Representative**

This case study described the centralization of the trade data in order to give trade professionals direct access via computers over data and information. The office automation system was implemented beginning with word processing and electronic mail. The training manuals were developed in the initial phase of implementation with a training program. Six information counselors were hired in order to ensure the smooth implementation and provide on-going assistance. The users were professionals and secretaries possessing desktop terminals. The work load was reduced and the time savings were used to catch up on the backlog of work. Overtime at night and on weekend was significantly reduced as well (Denise, 1998).
The general conclusion is that the work stresses were reduced and there is better access to data with faster reactions within the system.

2.3 The Ordering Process

In literature, the ordering process is mostly defined as an important business process by determining that customers’ orders are transformed into production orders to obtain feasible order agreements. A business process is involved with two main characteristics, both internal and external customers, and other factors that go beyond organization boundaries (Davenport & Short, 1990).

According to Ould (1995) ordering process is the core of business process since it focuses on satisfying external customers and intentionally adds value in a noticeable way.

According to Hall (1998) all information has values and life and must be considered as key company assets.

Figure 2.1 Inputs and Outputs of Ordering Process

![Figure 2.1 Inputs and Outputs of Ordering Process](image)

Source: Waller, 1995

Figure 2.1 shows ordering process, being defined as an important business process by determining that customer orders are transformed into production order to obtain feasible order agreement such as receipt, acceptance, confirmation, and scheduling of orders (Waller, 1995). A business process is involved with two main characteristics, both internal and external customers and other factors that go beyond organization boundaries (Davenport & Short, 1990). Ordering process is defined as the core of business process since it focuses on satisfying external customers and intentionally adds value in a noticeable way (Ould, 1995).
2.4 Information and Record Management

According to Hall (1998), all information has values and life and must be considered as key company assets.

Figure 2.2 Life Cycle of Document

Figure 2.1 shows that all records have a cycle of creation, distribution, use, maintenance, storage, archives, and destruction. The cost of paperwork is also a crucial issue for the business. One third of all paperwork could be immediately destroyed and another third could be transferred and stored as "inactive" without disruption to the business. From the study, the researcher found that a company, with approximately three hundred employees, will consume one million sheets of photocopy papers a year (Hall, 1998).

2.5 Digital Signature

Another topic related to this study is digital signature. This term clearly tells itself what it is. It is also called "Soft Signature".
Hassler (1999) said a Digital Signature is a piece of data that identifies the originator of a document. It is created by encrypting the contents of the document using the originator's cryptographic key. This makes the signature unique to both the file and the owner of the key. Any changes to the document will affect the signature, thus proving integrity as well as authentication. This is despite the fact that the signature code is actually separate from the document. Digital signatures utilize asymmetric encryption, where one key is used to create the signature code and a different but related key is used to verify it. In a so-called public key security system, all participants need their own signing or private key. The matching verification or public key is distributed and identified by digital certificates.

2.6 Public Key Interface or PKI

Privacy of information is in high center in many environments. When an enterprise is responsible for the safekeeping of third party personal information, the burden of care goes up and the risks go up with it. Digital Signature and Public Key Interface (PKI) are discussed here in order to mitigate the risk and also improve the business process. In this case the researcher is focusing in ordering process, specifically how can business process improve the ordering process of the company? PKI has been used as a trust issue in business process. It is designed to duplicate the value of the hand written signature in the hard paper. The digital signature can be used to verify that such data is strongly related and approved by the owner of the data. Most of the use of digital signature is supported by current legislative action that provides convenience to the concept of electronic signature (Broderick, 2001). Two examples of this trend are the U.S. E-Sign Law, passed in 2000, and the EU Digital Signature Law, passed in 2001.

2.7 Business Process Improvement (BPI)

Zairi (1997) explained that Business Process Improvement (BPI) is a method to improve the business activities operated and handled by the company. It involves analyzing the process and making continuous improvement for the activities of operation process. Scott (1998) also defined that business process improvement is the 8-step process improvement where these steps can enable the company to achieve the goal for process improvement as describe below.
Step 1: Define the problem in the context of the process. This step is to clarify the problem, the question that must be covered to help identify the problem, the output of the problem that must be clarified, and what are the impacts from the current process. However this step focuses on the process rather than the specific result. The team in the process improvement can discuss with customers their needs and expectations.

Step 2: Identify, map, and analyze the processes. To know and understand all process well and find the suitable solution, the process and all activities must be identified such as what is the main process, what does it do, and how long does it take. But when all information has been collected, the process improvement team may have to complete the view of operation process within the organization and between the departments concerned in the business flow to decide who should take action for each process and what resource they might require to handle a case. The process map is an effective tool of improvement model.

Step 3: Measure the current performance. This is to analyze the current process of its strengths and weak points and how good is the outcome from the present process. The details for the measurement of the products or services such as on time delivery, quality of product, waiting time, total processing time, and the number of processing steps are described. The team can talk and discuss the problems together.

Step 4: Understand why the process is performing as it is. To discuss an area or the step which generates the problems, the cause of the problems must be focused on by the team concerned with the problem. This step helps to explain the problem from the current process.

Step 5: Develop alternative solutions and selecting the best are in this stage. The alternative solutions will be discussed to improve the process. After the best solution is selected, the implementation schedule will be planned and executed. Moreover the critical constraints must be considered before implementing plans to avoid any impact on the solution.
Step 6: Develop strategy and implement the chosen alternative. The plan for implementation should define the time, the day, the place, and how to implement. The execution must be complete with no gaps.

Step 7: Evaluate the result of the new process. The new process will be evaluated for comparison between pre-improvement and post improvement in order to know the outcome after implementation of the new process. The result will be clarified and benchmarked.

Step 8: Commit to continuous improvement of the process. The teams of process improvement must ensure that the new process would be carried out carefully from all participants. All activities will be achieved.

Business Process Improvement (BPI) was originally named by James Harrington (Harrington, 1991) and has also been linked with the Business Process Reengineering (BPR) approach, from which it should be clearly distinguished. BPI was adopted for improving a business process to achieve the goals of reducing cost and enhancing customer satisfaction (Hammer, 1990).

2.8 Chapter Summary

This chapter discusses the literature issues for the research. It focuses on the office automation and digital signature methodology. Office automation technology and digital signature methodology are known to help companies improve their efficiencies. In the case of ABC Company it is expected to help it its ordering process and identify the current problem or bottleneck along the workflow. The researcher applies office automation concept with digital signature to improve and create solution by proposing the new ordering process to ABC Company.
CHAPTER III

RESEARCH METHODOLOGY

This chapter aims to identify the current problem at ABC Company that causes a long lead time in order processing. The methodology for this research contains four steps: data collection and interview, process proposal, evaluation, and summary. These four steps will help the organization clearly understand the weak points in the process and also how to improve and develop the ordering process at ABC Company.

In Chapter 1, ABC Company was shown with various Sales channels. One of these is the Contracted Partner or Distributor. Each partner will have a signed agreement with ABC Company for one fiscal year. The document will tell how much of the target sales they have to achieve and other regulations, being the company's partner. With this signed agreement, the partners will enjoy a distributor price and other privileges from ABC Company. At the end of the year they will also receive Bonus or Incentive if their targets are reached.

3.1 Data Collection

The data for this research was conducted by interview to the focus group and the raw data collection was the date of approval of the documents in ordering process at ABC Company. The period of data collection and interview was during October 2014 to March 2015.

3.1.1 Data Interview

The interview was set up internally with all employees involved in the ordering process flow which are:

Sales Support: this person is the contact point of customers. He/she receives enquiries from customers. Sales support is the one who prepares and prints the orders received
form, makes the calculation sheets and other documents in the order package, and conducts follow up for approvals. Next is the Sales Engineer. This is the first person who contacts the customer if there is any enquiry from customers. Sales engineer will act as a salesperson of the company with some basic knowledge of the product. The Sales engineer will be the one who can identify simple product clarification and price quoting to customer. Third is the Sales Manager. This manager will take care of the sales channel assigning. The Sales engineer reports to the Sales manager directly. The next is Commercial Controller of the company. This Commercial controller is the one who monitors costing and overall status of each order. This manager also performs sales forecasting for the division on a regular basis. Next is the Product Manager who acts as Business Development Manager. This manager takes care of assigned business unit or product portfolio as well as market analysis to know the business situation. Lastly is the Division Lead or Division Controller. They are both called Division Head and they are both on top of the organization chart of the division. This manager also manages the business unit's financial activities, transactions, human resources, and processes. The Division controller prepares financial and management reports, exchanges information with stakeholders, analyzes growth opportunities, and coordinates external audits.

The interview was made to observe the current process and find the problem that occurs along the process, which step provides the bottleneck, and which employee needs improvement. The interview was set up after the implementation started to gather all feedback from all employees in the process flow.

Below is the result of the interview. Some problems were found and the bottleneck is shown in Table 3.1 below.
Table 3.1 Problem and Root Cause

<table>
<thead>
<tr>
<th>Types of Problem</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Error</td>
<td>Approver is not available in office, no delegation</td>
</tr>
<tr>
<td></td>
<td>Document is lost</td>
</tr>
<tr>
<td></td>
<td>Document is left out sign</td>
</tr>
<tr>
<td>SAP System</td>
<td>SAP material is not available, non standard product</td>
</tr>
<tr>
<td>Technical Support</td>
<td>Delay in technical clarification</td>
</tr>
</tbody>
</table>

Source: ABC Company

3.2 Process Proposal

The researcher aims to reduce and improve the ordering process flow of ABC Company and later will study the causes of longer lead time of order process. Digital Signature and Paperless Ordering are the selected methodologies for this improvement since they can use the company’s existing information technology and resources that are familiar to everyone. Below are the steps to be taken for the project.

i. All order package and document related to customer order are printed as PDF file.

ii. Request customer to send purchase order to e-mail instead of FAX.

iii. All above documents will be kept in the company share drive, separated as a sub-folder and arranged as quarterly.

   a. Fiscal Year 2016

      First folder will be set as October 2015 to December 2015

      Second folder will be set as January 2016 to March 2016

      Third folder will be set as April 2016 to June 2016
Forth folder will be set as July 2016 to September 2016

iv. Each file will be saved and converted into PDF file which is a company licensed program. The approver can sign on the document by using sign menu which will be able for use.

v. Authentication signature is also required. Since the company’s employee cards can define as the identification of employees, the researcher will make sure that the signature is authorized.

vi. Company e-mail is the communication means and the documents will be sent as link from the company share drive. The approver can access to the link from outside the company. The e-mail subject and format will be set as shown below.

\[
\begin{align*}
\text{DS} & = \text{Digital Signature} \\
\text{CustomerName} & = \text{Customer Name in SAP} \\
\text{PurchaseOrder#} & = \text{Customer Purchase Order number} \\
\text{SpecialText#} & = \text{Any Special Text required (free text)}
\end{align*}
\]

Figure 3.1 Electronic Mail Subject Title Format

Source: ABC Company
Figure 3.1 shows how the subject e-mail will look like to users. Therefore it would be easy for the approvers to identify the actual customer orders among their inbox messages.

vii. Once the document is signed, the approver has to reply the e-mail and send to the text approver. The Sales support is the tracker of the process flow.

viii. Any text will be added into the PDF file by using “Typewriter” menu.

ix. The Order Management will be the last to sign on the document once the purchase order is issued to the Factory and renames the folder to begin with SalesOrder_CustomerName_CustomerPurchaseOrder and also informs the Sales support and Sales engineer. This is the end of the process.

Any revision of the order package requires using the same original folder from Order Management but the subfolder will be added as revise folder. The trial operation is a six months period, during January 2016 to June 2016.

3.3 Process Evaluation

The process evaluation will be set up among related staff every 2 months along the trial period. The researcher has to review and investigate the error and will ensure that the delay is reduced and the process will be improved from the previous flow. The steps will be as follow.

i. Hold a meeting every 2 months to interview the Sales support and Sales engineer along with Order Management for the operation point of view to find any obstacle that affects their operational routine work after the paper usage were removed.

ii. Interviews with the Approver, Sales managers, Product managers, Division Lead, and Division controller to learn their feedbacks.
iii. Track the ordering flow from the first approver until last approver to find if there is any improvement in the lead time.

After gathering all the data and recommendations from the evaluation step, the improvement will be adjusted and changed in the next trial month period and the result will be measured again in the next evaluation.

3.4 Chapter Summary

This chapter provides the data collection through interviews with related personnel, the different steps of the process proposal, and the evaluation of the process proposal. The researcher aims to seek alternative solutions in order to improve the current ordering flow of ABC Company.
CHAPTER IV

PRESENTATION AND CRITICAL DISCUSSION OF RESULTS

This chapter presents the procedures in applying the digitalized documents into the current ordering process of ABC Company. There are three sections in this chapter. First is the analysis of the current process focused on Contracted Partners with the highest portion of the company sales. Second is the procedure and computation of the study described in this study. Third is applying the digitalized document model showing the results and benefits of the document lead time and saving operation cost of ABC Company.

4.1 Analysis of the Current Ordering Process

The ordering process of ABC Company focuses on the hard copy of original documents for approval, verification, storage, and the lack of monitoring and controlling of documents. These make ABC Company incur high cost on paper usage and disorganized documents.

Table 4.1: Summary of Lead Times and Paper Cost in Contracted Partner

<table>
<thead>
<tr>
<th>Contracted Partners</th>
<th>Total Lead Time</th>
<th>Number of Orders in 2015</th>
<th>Number of Papers used per Customer Order</th>
<th>Number of Papers Used</th>
<th>Paper Cost (Baht)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10-12 days</td>
<td>1,560</td>
<td>5</td>
<td>7,800</td>
<td>2,340</td>
</tr>
</tbody>
</table>

Source: ABC Company

Table 4.1 summarizes the current order number of Contracted Partners. It also shows the papers used to print out in order to process the customers’ orders to the Factory and the total paper cost. Five sheets of papers are the minimum number used to print per one
customer order. So the total number of papers used is much higher than what is stated above, but the researcher applied the minimum number for this study.

In summary, the researcher intends to reduce the current ordering process lead time of the Contracted Partners' order of ABC Company and expects that the result of the total lead time and operational cost will be reduced from the existing process.

4.2 Data Analysis

After all data is collected, the researcher found that most of the delays were caused by personnel such as unavailable approver. Other reasons include lost document and document is left without signature. There are also some causes from the system and product clarification which is an outside factor. Outside factor is uncontrollable since it is related to external party like technical clarification and SAP material is not available. This problem requires help from the headquarters and IT support. The average approval and cause of delay are related because it takes the document longer time to process and causes delay in customer delivery.

4.2.1 Actual Approval Lead Time

In this actual approval lead time, the researcher aims to find the improvement of approval time of ABC Company by studying the actual or As-Is approval lead time and then analyze the problem and root cause of the longer delay approval time. The data was collected by gathering the actual date of each document during collection period. The quotation package in ABC Company after purchase order was issued to the Factory, will be scanned and kept in the document room, recorded as SAP Sales order.
Figure 4.1 Scan Sales Order Document

Figure 4.1 shows examples of order package that are kept by ABC Company. Each file represents one customer Sales order. After the order is sent to the Factory, the order package is scanned and kept in the company’s share drive for future reference. For the papers it will be stored in the documents room, waiting to be put in the archives.

Each Sales order represents one customer order. SAP users can track and retrieve the document by searching the Sales order which can be found in the SAP. The Sale orders are listed at the SAP system according to the date the Sales order was created.

The methodology to track the lead time for this data collection would be each order package. There will be approval signature and date stamped on the document. The researcher will record the date of each approver according to each Sales order to find how long for each approver to approve the documents. The average approval days are shown on Table 4.2. The maximum gap between approver to another approver is three working days which is quite long and not acceptable in terms of operation. It affects the ordering process and delay the delivery to the customers.
Table 4.2 Average Approval Lead Time

<table>
<thead>
<tr>
<th>Approver</th>
<th>Average Approval Lead Time (days)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Engineer/Sales Support</td>
<td></td>
</tr>
<tr>
<td>Sales Manager</td>
<td>3.2</td>
</tr>
<tr>
<td>Product Manager</td>
<td>2.5</td>
</tr>
<tr>
<td>Commercial Controller</td>
<td>1.5</td>
</tr>
<tr>
<td>Div. Lead &amp; Div. Controller</td>
<td>2.3</td>
</tr>
<tr>
<td>Sales Support</td>
<td>2.1</td>
</tr>
<tr>
<td>Order Management</td>
<td>1.4</td>
</tr>
</tbody>
</table>

Source: ABC Company

From the average lead time mentioned above in Table 4.2, the lead time of approval from Sales engineer to Sales manager would take 3.2 days. The Product manager approval takes 2.5 days after receiving the documents. For the Division Lead and Division Controller, 2.3 days is needed if the documents required their signature. The overall lead time is up to 13 working days if all division managers must sign the documents.

4.3 Procedure and Computation of the Study

From the previous chapter, the selected procedure for this study was to interview the persons who are involved in the ordering process of ABC Company. Below are the selected interviewees.

First is Sales support and Sales engineer. These two functional managers are the initiators and makers of the documents. Then Sales managers are the direct superiors of Sales support and Sales engineer. Sales target and key performance indicators were set for the Sales managers as leaders and top-down to team members. In order to evaluate sales and team performance, the approver from Sales manager is necessary. Next is the Product manager. They are needed to verify the profit and loss, whether it is correct
according to the business target, and find out if there are technical aspects needed or required by customers. Commercial controller is responsible for checking if there is any deviation from the business target or not. If there is a deviation, action is needed to align with the company target. The last is Order Management. This function is to verify documents, products list, and products cost to comply with the actual data in the system. Order Management can see product cost in the system, verify the documents, and process them. The interview was set up with each individual to get the overall scope of the works of each person. The interviews is also expected to know the bottleneck along the process that causes the delay of ordering process and what process should be adjusted and eliminated.

<table>
<thead>
<tr>
<th>Approver</th>
<th>Function</th>
<th>Current Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Support</td>
<td>Verify</td>
<td>- Approver is not in office</td>
</tr>
<tr>
<td>Sales Engineer</td>
<td></td>
<td>- SAP material no. is not available</td>
</tr>
<tr>
<td>Sales Manager</td>
<td>Approve</td>
<td>- Cost calculation is not correct</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Product clarification is unclear</td>
</tr>
<tr>
<td>Product Manager</td>
<td>Approve</td>
<td>- Cost calculation is not correct</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Long clarification from headquarter</td>
</tr>
<tr>
<td>Commercial Controller</td>
<td>Verify/Approve</td>
<td>- Missing direct superior approver</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Cost calculation is not correct</td>
</tr>
<tr>
<td>Order Management</td>
<td>Verify</td>
<td>- SAP material is not available</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Missing appropriate authorization</td>
</tr>
</tbody>
</table>

Table 4.3 Current Problem and Function of Interviewees

Source: Author

From the interview of all related personnel, the overview of the problems of the ordering process is shown in Table 4.3. Each personnel has different role as verifier or approver.
They have experiences in different kinds of problems. Most of the problems come from missing authorization, incorrect cost calculation, and unavailable SAP system. The verifier’s role is to prepare and verify the documents but does not have authorization on any document. The approver approves and ensures that the document is eligible and correct according to company guideline and business compliance. The researcher solved some of the problems by introducing Digital Signature. The problems were reduced or eliminated. The digital approver allows the approver to approve the documents even the approver is out of the office. By using e-mail some product clarifications can be communicated and responded with. The Product manager is able to view the document from somewhere out of the office and can clarify it with the requester.

4.4 Complete Process Flow

During the trial period, January 2016 to June 2016, the complete process flow was in operation. The digitalized operation began with the first process until the purchase order is issued to the factory. The researcher aimed at reducing the order lead time. The researcher started the basic idea of paperless operation. The new technologies improved the ordering process of ABC Company. The company software such as PDF Exchange program was used to print the document as soft file instead of hard copy. The PDF Exchange program has a digital signature function that can be used as approver signature.

The employee card, as authentication identification of an employee, has security chip that keeps personalized data of each employee. As well, password key is required for any log in the company computer system. Figure 4.2 below shows the company’s employee card.
The authentication system is linked with the digital signature in the PDF Exchange. The picture below shows the digital signature in the document by using PDF Exchange. It is an authentication in the employee card.

Figure 4.3 shows the information of digital signature in order package when using digital signature function in PDF Exchange. The digital signature shows the basic and important details of the approver such as name, surname, date, and time of signature. These will help the company to track from real time and date of the signature. It is also useful for audit purposes.
Electronic mail is one of the important tools for this process improvement. During the trial period, company email is the means of communication along the process. After the document is prepared by the Sales support, the email will be sent to the first approver by attach link to the folder of the order.

**Figure 4.4 To-be Process Flow**

Source: Author

Figure 4.4 shows the complete “to-be process flow” for the ordering process of ABC Company after digitizing the documents. Most of the processes remained unchanged but by digitizing the documents it could help to reduce the lead time of the ordering process of ABC Company. Once the document has been successfully approved from all functions it will be forwarded to Order Management to process the order to the factory.
4.5 Trial Implementation

After collecting all data by interview from related functions in the ordering process and adapting new model flow, the researcher arranged the training and assigned the process works of each person and function. This was done one by one because each person has different work function. For Sales support and Sales engineer, they were trained how to initiate the document as a soft file by using PDF Exchange and email set up to process the order and customer purchase order they received from the customer. They will be kept together with all related documents in the folder so it would be easy to trace and check by any third party. The Sales manager and Product manager are checker or approver of the process. They need to know how the documents flow in the process and how to verify the documents. The Commercial controller needs to know the overall process. What document to send to whom and what criteria or other important points need to be checked by this function.

4.5.1 Software Set-up

For this study, the researcher use PDF Exchange as implementation tool for this new process. This software already exists in the company and this software is basic in every company workstation.

Figure 4.5 PDF Exchange

Source: PDF Exchange
Figure 4.5 shows an example of PDF Exchange software that will be used. The next step of the set up is how the approver signs on the PDF document by using PDF Exchange. The researcher describes the steps below.

*Step One:* Go to Edit > Preference. This menu will be set in any document after digital signature is created. The document will be overwritten and saved to the original folder. This is done by selecting “Save Documents” box, choose “Original Document Folder”, and click “OK”. This process is shown in Figure 4.6 below.

![Figure 4.6 Preference Menu](image)

Source: PDF Exchange

*Step Two:* This shows how the approver creates his/her signature for the document. This is done by going to “Document” in the menu bar and select “Signing”. The approver clicks the Signature in the document in the approver area. The program will
automatically create digital signature which is synchronized with the employee identification profile from the employee card. Then the approver creates his/her digital signature for the document as shown in Figure 4.7.

**Figure 4.7 Digital Signature on Document**

<table>
<thead>
<tr>
<th>Process</th>
<th>Technical approval</th>
<th>Commercial approval</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Satasita Pongrinyawattanapong</td>
<td>Saranonthakom Phattaratong</td>
<td>Vanichapol Kitchiapol</td>
</tr>
</tbody>
</table>

Source: ABC Company

4.5.2 Electronic mail Set-up

Electronic mail is used as a main communication tool for this proposed process. In order to identify the email for approval from other daily emails, the researcher has proposed to use format pattern for email subject as “DS: CustomerName/Purchase PO/Text”.

This email subject pattern will help to easily track and trace the order from the inbox messages in the emails of each approver. Figure 4.8 shows the sample of email set up.

**Figure 4.8 Email Set Up**

Source: ABC Company

Figure 4.8 shows the sample of email subject and content as per proposed process. In Figure 4.8 the subject email was set as “DS: Rieckerman RTC RTC1-04-1601-010SM”
which means Rieckerman is the customer name and RTC RTC1-04-1601-010SM is the customer purchase order number.

The content in the email has no text limit and no content but the specific order must be added into the email in order to view and approve the document by the approver.

After the documents were completely approved, the Order Management will review the documents again and if the documents are verified, purchase order will be issued to the Factory and Order Management will inform all distribution officers by email for the SAP purchase order number.

4.4.3 Document Management

ABC Company is using share drive and anyone can use and access to this drive. This existing resource can be used to fill the documents in a digital form and this is a way to manage and keep the completed document. Once the document has been printed as PDF, the order package has to be kept to the share drive which is separated by folder. One folder refers to one customer order.
Figure 4.9 shows Sales order folder that represents one customer order. Order Management will rename the folder by adding Sales Order in a prefix. This is easy for future tracking of the document in the share drive by using SAP Sales Order no. and search in the folder.

4.6 Trial Result

During trial period, control and monitoring is necessary in order to keep the records of the actual results and to make sure that the process was implemented in the appropriate way. The actual result was recorded by the researcher during trial period. The period of monitoring and recording actual result will be done at the end of each month during trial
period. The result will be recorded by Sales Order and Sales Order will be retrieved from SAP for that particular month by tracking Sales Order from the folder in the company share drive. The signature will be recorded from initiator date until factory purchase order date.

Table 4.4 Approval Lead Time During Trial Period

<table>
<thead>
<tr>
<th>Approver</th>
<th>Old Average Approval Lead Time (Average Days)</th>
<th>New Average Approval Lead Time (Average Days)</th>
<th>Improvement (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Engineer / Sales Support</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sales Manager</td>
<td>3.2</td>
<td>1.3</td>
<td>59%</td>
</tr>
<tr>
<td>Product Manager</td>
<td>2.5</td>
<td>2</td>
<td>20%</td>
</tr>
<tr>
<td>Commercial Controller</td>
<td>1.5</td>
<td>1</td>
<td>33%</td>
</tr>
<tr>
<td>Division Lead / Division Controller</td>
<td>2.3</td>
<td>1.8</td>
<td>22%</td>
</tr>
<tr>
<td>Sales Support (Create SAP Quotation Number)</td>
<td>2.1</td>
<td>1.5</td>
<td>29%</td>
</tr>
<tr>
<td>Order Management</td>
<td>1.4</td>
<td>1.5</td>
<td>29%</td>
</tr>
<tr>
<td><strong>Total Days</strong></td>
<td><strong>13.0</strong></td>
<td><strong>8.6</strong></td>
<td><strong>34%</strong></td>
</tr>
</tbody>
</table>

Source: Author

Table 4.4 shows the results after the trial period has been implemented during January 2016 to June 2016, by digitizing the documents. The results show that the approval lead time was reduced from 13 days to 8.6 days in average, or 34% of overall lead time, and the calculation is based on 12 working hours. Since the working hour for ABC Company is flexible, no timetable is fixed. Therefore someone can work from 7.00 AM till 7.00 PM. The Sales support and Sales manager also have flexible time to access online into the company system. The most improvement was at the Sales manager approval stage which was reduced by almost 60% from the old process. The least improvement in terms
of percentage was at Product manager by 20%. The approval lead time is not the factor that caused the least improvement. It was the Product Technical Clarification which took more time to finalize and then approve.

4.7 Chapter Summary

After the implementation of the digitalized document, ABC Company gained benefits by using this new process of digital signature. There are direct and indirect benefits effecting ABC Company. The direct benefits include the company reaching the objective of this study which is to reduce the approval lead time of ordering process and cut the cost of operation such as office paper. The indirect benefits include gaining customer satisfaction in terms of delivery since the approval was improved and shortened the delivery time to the customers. Also by using digital signature, the staffs are encouraged to do other things such as customer visit while approving the documents. They are not required to go to the office while waiting for the documents to be approved. Their customer visits could provide more sales opportunity for the company.
CHAPTER V

SUMMARY FINDINGS, CONCLUSIONS,
AND RECOMMENDATIONS

This research is focused on the reduction of approval lead time for Contracted Partners by digitizing the documents in the process. Digitizing the documents and digital signature can help ABC Company to improve the overall ordering process.

5.1 Summary of the Findings

The ordering process of ABC Company was facing a long approval because of long workflow by different approvers. After finding and analyzing the root causes of the problem, the researcher proposed a new ordering process to ABC Company by applying office automation and digital signature.

The average approval lead time after the implementation was reduced from 13 days to 8.6 days, as shown in Chapter 4. During the trial period the average approval lead time was calculated by recording the actual date from digital signature after each approval by different approvers and analyzed the information by using Microsoft Excel. The operational cost such as papers used to print out and signed was reduced after applying the digital signature approval process.

5.2 Conclusion

According to the research question “how ABC Company can improve the order processing lead time and reduce its operation cost”, the researcher aimed to find and improve the approval lead time of the Contracted Partners ordering process. Finding an opportunity to reduce the approval lead time was specially considered in this study. Thus, approval process through ordering process of Contracted Partner by using digital signature instead of hard signature on paper was considered as a solution to the problem. It was expected that the new order processing will efficiently and effectively lower the approval lead time.
The office automation and digital signature concept was applied to digitize the documents or ABC Company. The digital signature and process of digitizing document were added into the current ordering process. It was examined and created for the approval process of the Contracted Partners. The use of papers was reduced. At least 7,800 sheets of papers will not be required if the digital signature approval process is applied.

The process was changed and implemented during a trial period in January 2016 to June 2016. This was through applying digital signature instead of hard signature on the documents and it changed the way of communication for the approvals of the authorized personnel. Finally, after the trial period the approval lead time was reduced to 8.6 days from 13 days.

5.3 Theoretical Implications

This case study used digitizing document and digital signature by applying the office automation model. It helped to improve the overall operational process of the company in order to meet customer satisfaction. The study focused primarily on using the existing technologies and tools by applying PDF Exchange and used its functions in order to approve the documents in the ordering process. It is an effective tool for improving ordering processes in ABC Company. Aside from implementing and applying office automation and digital signature concept, it is also a good management tool for storing, controlling, and monitoring for future use (Hassler, 1999).

5.4 Managerial Implications

This research can be a guideline for ABC Company to implement the proposed model to sustain and improve approval lead time using the office automation model. The company can reduce the approval lead time not only in the short term by using digital signature, but the company can also adopt this proposed process to other Sales channels in the company, which will result in shorter approval lead time and increase customer satisfaction in delivery. And it will surely improve the company cash flow.

In summary, the researcher expects that this research will enable the efficiency of the business owners to identify company problem and increase the opportunity to improve
the ordering process lead time. It can definitely generate some cost savings to the company.

5.5 Limitations and Recommendations for Future Research

This case study was conducted to improve the approval and overall ordering process of ABC Company. It also aimed at sustaining and maintaining approval lead time of the Contracted Partners by using digital signature and office automation concept. Limitations to this research are the following.

5.5.1 This research mainly focused on the Contracted Partners business approval process at ABC Company, not including all other Sales channels of the company.

5.5.2 The actual data of approval date may vary during the study period, because the stamp date on the document may not show the exact date of the approver or the approver stamp back date. This research relied on the 6 months historical data, from October 2014 to March 2015.

5.5.3 The researcher proposed the use of the existing application which is PDF Exchange application to control cost and management decision. This application also has some limitations in terms of security control and for the future audit point that can occur. The researcher recommends the company to update to other applications software for more suitable and functional usage in the future.

According to the study, the focus is on improved approval lead time of the Contracted Partners of ABC Company. It is highly recommended that the study be applied to other business sectors of ABC Company to understand the root causes of long ordering process in other business sectors.
BIBLIOGRAPHY


APPENDICES
### ORDER RECEIVED FORM

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<td></td>
<td>A2220</td>
<td>IAC Phattanapong</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<table>
<thead>
<tr>
<th>Project Name</th>
<th>Quotation No.</th>
<th>Rush On</th>
<th>Purchase Or.</th>
<th>Sale On.</th>
</tr>
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<tbody>
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<td></td>
<td></td>
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<td></td>
</tr>
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<table>
<thead>
<tr>
<th>Customer No.</th>
<th>Customer Name</th>
<th>Customer Org.</th>
<th>Customer PO No.</th>
<th>Customer PO Date</th>
<th>Request Date to PO</th>
<th>Reason</th>
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<tbody>
<tr>
<td>1000001</td>
<td></td>
<td></td>
<td>PO 1107/99</td>
<td>Jan 15 1999</td>
<td>Jan 15 1999</td>
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<table>
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<tr>
<th>GBK</th>
<th>Profit Center</th>
<th>Self Price</th>
<th>Cur.</th>
<th>Purchase %</th>
<th>Penalty (Unlimited Liability Provision)</th>
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<td>R220</td>
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<td>40,650.00</td>
<td>THB</td>
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**Total:** 40,650.00 THB

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<th>Vendor Name</th>
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<th>Vendor Org.</th>
<th>Country</th>
<th>Terms of Delivery</th>
<th>Mode of Payment</th>
<th>E-mail</th>
<th>Quotation for SGA</th>
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**Customer Information**

<table>
<thead>
<tr>
<th>Consignee Name</th>
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<th>Type of Consignee</th>
<th>Delivery Date</th>
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<table>
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**For Warranty**

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<th>Material Description</th>
<th>Q'Ts</th>
<th>Cur.</th>
<th>Unit</th>
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</table>

**Sodsai Thasanee**

<table>
<thead>
<tr>
<th>Responsible Sales</th>
<th>Sales Manager</th>
<th>RD Management</th>
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<td></td>
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APPENDIX B

Bill of Material (BOM)
### DP/PD Cost Calculation Sheet

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<th>Description</th>
<th>Rate (%)</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Labor</td>
<td>Onsite</td>
<td>5.0</td>
<td>24,060</td>
</tr>
<tr>
<td></td>
<td>Offsite</td>
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<td>24,060</td>
</tr>
<tr>
<td></td>
<td>Total</td>
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<tr>
<td>Materials</td>
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<tr>
<td></td>
<td>25-50 KG</td>
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<td>0.00</td>
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<tr>
<td></td>
<td>Over 50 KG</td>
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<tr>
<td></td>
<td>Total</td>
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<tr>
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<td>25-50 KG</td>
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<tr>
<td></td>
<td>Over 50 KG</td>
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<tr>
<td></td>
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<td>5.0%</td>
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</tr>
<tr>
<td></td>
<td>25-50 KG</td>
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<tr>
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</table>

**Remarks:**

- Total amount: 472,233.95
- Note: Invoiced and drawables finance cost, local taxes, and relevant expenses are included.
- Rate applicable at 3% per month.

### Acknowledgments

- Onsonkrit, Phattanaphong
- Phongiyawattana, Pong

Date: 11 Aug 2018
APPENDIX D
Shipping Instruction
# SHIPPING INSTRUCTIONS

## FOR DOING CUSTOMS CLEARANCE UNDER CUSTOMER'S NAME

<table>
<thead>
<tr>
<th>Field</th>
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<tbody>
<tr>
<td>CUSTOMER PO NUMBER</td>
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</tr>
<tr>
<td>CONSIGNEE'S NAME</td>
<td></td>
</tr>
<tr>
<td>CONSIGNEE'S ADDRESS</td>
<td></td>
</tr>
<tr>
<td>DESCRIPTIONS FOR BOI PURPOSE (if any)</td>
<td></td>
</tr>
<tr>
<td>NOTIFY PARTY</td>
<td></td>
</tr>
<tr>
<td>TERM OF DELIVERY (To be declared on Customs Invoice)</td>
<td></td>
</tr>
<tr>
<td>Customer Shipping Broker</td>
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</tr>
<tr>
<td>Tel</td>
<td></td>
</tr>
<tr>
<td>Fax</td>
<td></td>
</tr>
<tr>
<td>NOMINATED FORWARDER or freight forwarder is DSV LOGISTICS</td>
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</tr>
<tr>
<td>Tel</td>
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</tr>
<tr>
<td>Fax</td>
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## DOCUMENTS' REQUIREMENT

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<td>1</td>
</tr>
<tr>
<td>Packing List</td>
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<tr>
<td>AWB BG</td>
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