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**An Analytical Performance Study of the Airfreight Inbounds Supply Chain of Common Thai Orchid to the Netherlands Flower Market**



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## **Abstract**

This research aims to 1) analyze the efficiency of supply chain and studies the companies that export Thai orchid flower using 3 models 1. Company A 2. Company B 3. Company C 2) know and present the complete supply chain system for exporting Thai orchid flowers to the Netherlands 3) present the concept and strategies to create the supply chain system for the export of orchid flower. The sample used in this research was the three companies involved in exporting orchids by using questionnaires and interviews with relevant personnel within the organization to serve as research tools. The results of this research show that 1) the models of the three companies differ in terms of the plan, source, make, delivery, and return. In the part of the plan, Company A and Company B focus market on the original market and reaching new markets but Company C focuses only on the original market. In the part of source, the three companies receive orchids from Nakhon Pathom. Then only Company B will take orchid to fume as part of delivery, three companies used four wheels' refrigerator with temperature control at 12-15 ° C in transport. In the part of return, all three companies have traceability systems. 2) The result of complete supply chain system for exporting Thai orchid flower to Netherlands by using SCOR and CPFR strategy according to the study of research found that the benefits from the use of SCOR model are that the strategy level management and the supply chain work better by using the technique of benchmarking tool to finding areas to communicate between sales representatives and can sell to determine the skills or the special expertise of sales representatives. CPFR strategy improves supply chain management more effectively using Collaborative Planning, Forecasting, and Replenishment. 3) The results to apply the concept and strategies create an efficient supply chain system for the export of orchid flower to the Netherlands. The result is that Thailand has income from orchid exports and orchid farmers earn more income and better quality of life for many related businesses throughout the supply chain gets more benefits from the orchid industry.

**Keywords:** Supply chain, Airfreight, Performance, Analytical, the Netherlands

## 1. Introduction

Orchids are a part of the agriculture economy that is famous in Thailand. Presently, Thai people grow orchid widespread for the local markets, to sell to florists, and for ornamental plants on the building. The orchids can also produce income for people and be built into a large business to export and increase income for the country as well, earning hundreds of millions of baht a year. Out of all types of the ornamental plants, orchids are a flower group that is evident in the beauty and variety. There are many uses for orchids such as to decorate for beauty for gift baskets as a gift or used in decorations in various auspicious ceremonies including use for religious worship. There are many species of Thai orchids meaning that consumers have the opportunity to choose as much as needed and the most appropriate. Thailand has developed the farming methods as well as marketing, resulting in Thailand as a famous orchid production center in Asia. (Panmaithai, 1999) The interest in growing and cultivating orchids of Thailand has increased rapidly, especially since the orchid is a unique flower of Thailand and popular abroad. Importantly, orchids which cut from *Dendrobium* flowers have last long for usage and this is reason Thailand's orchid exports to the global market. At a present, Thailand is the number one exporter of orchids in the world for a long time and export growth to continue throughout. Orchids are export the quantity is 132,124,908. 67 kilograms and value of 594,230,769. 67 baht from the average of 2015 to 2017 (Cooperative). Thailand exports tropical orchids in the highest proportion in the world. The popularity of exporting orchid cut flowers will increase more and especially for the orchid breed "*Dendrobium*" due it being the largest orchid species that is widespread throughout Asia and Pacific it has leaves that are thick and green and flowers are equal lengths of the outer upper and lower lobes. *Dendrobium* forest Thai Orchid is an orchid with beautiful color and a short stem that grows in Thailand. In the EU, the demand for orchids is high and the Netherlands is the largest customer of Thai orchids that imports cut orchid. The Netherlands is Thailand's major export market for orchids, with a market share of about 87 percent. In the European Union, there is a need for white and dark orchids, such as Madame Pompadour and Bombay, which have a dark purple color. (group, 2018) Mainly imported to the Netherlands is "*Dendrobium*" orchid and in addition, other species such as Mokara orchid, Aranda orchid, Vanda orchid, *Cymbidiums* orchid and *Oncidium* orchid. (Sangthongkam, 2016).

Although the export of orchids from Thailand is increasing, export to the Netherlands market has decreased. During 2011- 2012, the proportion of quantity exports decreased from 267.36 to 94.97 million baht and as shown in Table 1-1, in the year 2016-2017, the export value of 2.77% was reduced to 1.65% of Thailand's total exports, because of Thailand is starting to experience problems and obstacles such as lack of promotion of the Thai orchid market in foreign countries seriously, lack of analyzing knowledge the product is not according with the time demands of the market and importantly, planning to improve the transportation system such as lack of continuity and no clear goal, lack of supply chain system integrity and efficiency. This has made the orchid market mechanism to be distorted. Since the first process of the supply chain includes problems such as the quality of the orchid cut flowers are not standard or packaging used for the orchids is not standard affecting the quality of the orchid flowers to be unstable, and also including the lack of connection between producers, support organizations, and clients and then, no database relating supply and demand currently. EU market Especially in the Netherlands, Italy, France, Germany, England, Austria, and Belgium, there is a strict export regulation, which limits the flow of Thailand to the rest of the world. In addition, the problem is the risks of trade measures of trading partners, especially in the EU from standard inspection transportation system Trade Union Standards. (Prague, 2015) In 2012, the export of orchids began to decline significantly that major export market of Thailand is the Netherlands because of the main competitors are Malaysia, Vietnam, and New Zealand. Thailand has disadvantages which are technological development of cultivation, production costs are high, less of skills and knowledge, and challenge to manage the supply chain including, lack of aggressive

marketing of foreign markets. (Economics, 2016) Development and promotion of Thai orchid industry that maintain its competitiveness in the world market is required to have a sustainable industry. The national orchid authority has said that Thailand has the advantage of having the right climate to grow tropical orchids. The technology of cultivation has been developed by Thai people who can use technology that is low cost. Thai orchid export market is growing quite high, but quantitative growth over quality. If the Thai orchid farmers and entrepreneurs turn to produce quality products and add value to the product, this will be a channel to increase the value of exports.

For that reason, researchers are interested in studying performance study of the airfreight inbounds supply chain of common Thai orchid to the Netherlands flower market. Thailand is the country with the most exported orchids and a few years ago it decreased. The country is experiencing problems managing exporting the orchid supply chain, due to lack of good management because there are no studies analyzing the problems in orchid supply chain management, including the movement of goods, the flow of information, and other factors that influence supply chain systems such as risk, loss, spending time, cost, and procedures of exporting the orchid. However, the problem of export needs to study the characteristics of the demand for using the orchids and the real demand quantity of the market as well. Researchers are analyzing and studying orchid supply chain management, including problems, the movement of goods, the flow of information, other factors that influenced to supply chain systems such as risk, loss, use of time, cost, and procedures of exporting the orchid. Thai orchid market will continue its potential, if the Thai orchid farmers and entrepreneurs turn to produce quality orchid products then, add value to the product, this will become a channel to increase the value of exports. Especially, for orchids with a shorter fresh age and easy to use, then the packaging is not just for storage but the value added that comes from the beauty of the packaging. The process of storing goods, transporting the orchids is of good quality in accordance with the export standard within the cost of competing with other countries, while the demand of consumers has changed constantly. (National Orchid Board, 2556). So encouraging and analyzing the forwarder company that used airfreight to ship Thai orchids to the Netherlands flower market is involved in the orchid development, providing chain management. Forwarder companies of orchid have to be effective and manage the quality of orchids produced and find new ways to reduce costs, loss, risk, and time for export to the Netherlands. Production should be considered from the beginning to the end to strengthen the ability to delivery orchids and improve supply chain strategies.

**Table 1** The Export of Thai Orchid to the Netherlands: 2011-2017

Year	Volume (Ton.)	Value (Million Baht)	Growth rate (%)
2011	531.33	267.36	72.77
2012	188.74	94.97	8.41
2013	111.29	56	-0.41
2014	117.25	59	7.23
2015	129.18	65	3.70
2016	121.23	61	-2.77
2017	119.24	60	1.65

**Source:** Department of International Trade Promotion (2018)

## Objective of The Study

1. To analyze and compare the efficiency of supply chains that study the company that export Thai orchid flower including 3 models 1) Company A, 2) Company B, and 3) Company C
2. To know and present the complete supply chain system for export Thai orchid flower to the Netherlands.
3. To present the concept and strategies to create the supply chain system for the export orchid flower.

## Significance of Problems

The Netherlands had the most growth rate for import of Thai orchid and the highest volume but in 2016- 2017 export orchid to the Netherlands decreased both of value and volume as shown in Table 1- 1, cause of high production costs and less of skills, knowledge, and challenge to manage the supply chain including, lack of aggressive marketing of foreign markets (Economics, 2016) and other factors concerning export of Thai orchid that have to be managed more efficiently. This research will be focused on developing approaches to manage the supply chain for exporting orchids to the Netherlands and the management of the supply chain efficiently. Increase forwarder and exporter's orchid export can be accomplished because they know which factors have the most effect, and it will help make them have more efficient supply chain and make the image of the country better.

## 2. Literature Review

### 2.1 Theory and Definition

#### Supply Chain Management

##### *a) Concepts of Supply Chain Management*

Ubonrat Changcharoen (2011: 20) states that the supply chain is a combination of planning and managing all activities, starting from manufacturing purchasing, collection of information technology, distribution, and transportation. Suppliers, manufacturers, distributors, and customers are linked to all relevant business processes, both within and outside the organization.

But the other side of the researcher has given the definition of supply chain management as referring to the use of organization, person, technology, resources, information and activities to integrate and to move goods or services from the supplier to the customer.

##### *b) The supply chain operations reference model*

Supply Chain Operation Reference (SCOR) Model is model that is applied to explain characteristics of procedures of supply chain management and to display activity in the business ways of all supply chain by using objectives to respond to customer's satisfaction. Operation in other parts of the production system and activity in the organization is used in the analysis. Development of supply chain of the organization needs to be managed using 5 processes such as plan, supply the source, make, deliver, and return. The model looks at the practical work that the

organization achieved based on the objectives that have been determined (Mrs. Poolsiri Virojanapa, 2012).

*c) Supply chain management involves six aspects.*

1. Facility management

Management systems that facilitate supply chain and logistics, for example, warehouses, distribution centers, machinery and equipment.

2. Inventory management

Inventory management of raw materials or finished goods, including crop planning and harvesting plans to suit both the cost and the ability to respond to customer needs.

3. Transportation management

Select a transportation method and select a transit route. Transportation is available in many ways, such as trucks, boats and aircraft

4. Information management

Information, news or documents such as product demand forecast data and information exchange. Good data management makes cropping, harvesting, production, and transportation efficient.

5. Sourcing management

Sourcing means the process and procedure that the company uses to provide the resources needed to produce the good quality and quantity required at reasonable prices and within the timeframe.

6. Pricing management

Price is the key to generating profit for both short and long term. Price decisions have a huge impact on profit and loss statements. Teerapat Shinawatra (2016)

*d) Supply chain management to increase productivity*

1. Integration of information in the organization.

It is the link between the work data by supplying information through the supply chain and disclosing it to the relevant people, such as sales data, production data, inventory data, and shipping information.

2. Collaborate

Collaboration between people in organizations and outsourced organizations to provide jobs to those who work best in the process. For example, manufacturers collaborate with their suppliers to plan future production.

3. The link between the organization

Effective supply chain management not only focuses on internal data links but also needs to be linked to external organizations. It needs a system that can link the data with complete accuracy and speed, which makes the complete SCM process as shown figure 2.1. and Logistics Collaboration model.

## SCOR Model

SCOR is a business process reference model that defines the concept of the measurement process, supply chain management, technology, and best practice in each process to allow companies or organizations to apply. (Kietpong Udomthanathera, 2560). SCOR model consists of 5 main processes: 1. Plan, 2. Source, 3. Make, 4. Delivery, 5. Return

**Table 2** Set of Standard Notation According to The SCOR Models Version 8.0

Plan	Source	Make	Deliver	Return
<p><b>P1 Plan Supply Chain</b> P1.1: Identify, Prioritize, &amp; Aggregate Supply-Chain Requirements</p> <p>P1.2: Identify, Assess, &amp; Aggregate Supply-Chain Resources</p> <p>P1.3: Balance Supply-Chain Resources with Supply-Chain Requirements</p> <p>P1.4: Establish &amp; Communicate Supply-Chain Plans</p>	<p><b>S1 Source Stocked Product</b></p> <p>S1.1: Schedule Product Deliveries</p> <p>S1.2: Receive Product</p> <p>S1.3: Verify Product</p> <p>S1.4: Transfer Product</p> <p>S1.5: Authorize Supplier Payment</p> <p><b>S2 Source Make-to-Order Product</b></p> <p>S2.1: Schedule Product Deliveries</p> <p>S2.2: Receive Product</p> <p>S2.3: Verify Product</p> <p>S2.4: Transfer Product</p> <p>S2.5: Authorize Supplier Payment</p> <p><b>S3 Source Engineer-to-Order Product</b></p> <p>S3.1: Identify Sources of Supply</p> <p>S3.2: Select Final Supplier(s) and Negotiate</p> <p>S3.3: Schedule Product Deliveries</p> <p>S3.4: Receive Product</p> <p>S3.5: Verify Product</p> <p>S3.6: Transfer Product</p> <p>S3.7: Authorize Supplier Payment</p>	<p><b>M1 Make-to-Stock</b> M1.1: Schedule Production</p> <p>Activities M1.2: Issue Product</p> <p>M1.3: Produce and Test</p> <p>M1.4: Package</p> <p>M1.5: Stage Product</p> <p>M1.6: Release Product to Deliver</p> <p><b>M2 Make-to-Order</b> M2.1: Schedule Production</p> <p>Activities M2.2: Issue Product</p> <p>M2.3: Produce and Test</p> <p>M2.4: Package</p> <p>M2.5: Stage Product</p> <p>M2.6: Release Product to Deliver</p> <p><b>M3 Engineer-to-Order</b> M3.1: Finalize Engineering</p> <p>M3.2: Schedule Production</p> <p>Activities M3.3: Issue Product</p> <p>M3.4: Produce &amp; Test</p> <p>M3.5: Package</p> <p>M3.6: Stage Product</p> <p>M3.7: Release Product to Deliver</p>	<p><b>D1 Deliver Stocked Product</b></p> <p>D1.1: Process Inquiry &amp; Quote</p> <p>D1.2: Receive, Enter &amp; Validate Order</p> <p>D1.3: Reserve Inventory &amp; Determine Deliver Date</p> <p>D1.4: Consolidate Orders</p> <p>D1.5: Build Loads</p> <p>D1.6: Route Shipments</p> <p>D1.7: Select Carriers &amp; Rate Shipments</p> <p>D1.8: Receive Product from Source or Make</p> <p>D1.9: Pick Product</p> <p>D1.10: Pack Product</p> <p>D1.11: Load Product &amp; Generate Shipping Docs</p> <p>D1.12: Ship Product</p> <p>D1.13: Receive &amp; Verify Product by Customer</p> <p>D1.14: Install Product</p> <p>D1.15: Invoice</p> <p>D2.1: Process Inquiry &amp; Quote</p> <p>D2.2: Receive, Configure, Enter &amp; Validate Order</p> <p>D2.3: Reserve Resources &amp; Determine Deliver Date</p> <p>D2.4: Consolidate Orders</p> <p>D2.5: Build Loads</p> <p>D2.6: Route Shipments</p> <p>D2.7: Select Carriers &amp; Rate Shipments</p> <p>D2.8: Receive Product from Source or Make</p> <p>D2.9: Pick Product</p> <p>D2.10: Pack Product</p> <p>D2.11: Load Product &amp; Generate Shipping Docs</p> <p>D2.12: Ship Product</p>	<p><b>SR1 Source Return Defective Product</b> SR1.1: Identify Defective Product Condition</p> <p>SR1.2: Disposition Defective Product</p> <p>SR1.3: Request Defective Product Return Authorization</p> <p>SR1.4: Schedule Defective Product Shipment</p> <p>SR1.5: Return Defective Product</p> <p><b>DR1 Deliver Return Defective Product</b> DR1.1: Authorize Defective Product Return</p> <p>DR1.2: Schedule Defective Return Receipt</p> <p>DR1.3: Receive Defective Product (includes verify)</p> <p>DR1.4: Transfer Defective Product</p> <p><b>SR2 Source Return MRO Product</b> SR2.1: Identify MRO Product Condition</p> <p>SR2.2: Disposition MRO Product</p> <p>SR2.3: Request MRO Return Authorization</p> <p>SR2.4: Schedule MRO Shipment</p> <p>SR2.5: Return MRO Product</p> <p><b>DR2 Deliver</b></p>

Production Plans <b>P4 Plan Deliver</b> P4.1: Identify, Prioritize, & Aggregate Deliver Requirements P4.2: Identify, Assess, & Aggregate Deliver Resources P4.3: Balance Deliver Resources with Deliver Requirements P4.4: Establish Deliver Plans			D2.13: Receive & Verify Product by Customer D2.14: Install Product D2.15: Invoice	<b>Return MRO Product</b> DR2.1: Authorize MRO Product Return DR2.2: Schedule MRO Return Receipt DR2.3: Receive MRO Product (includes verify) DR2.4: Transfer MRO Product
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Plan	Source	Make	Deliver	Return
<b>P5 Plan Return</b> P5.1: Identify, Prioritize, & Aggregate Return Requirements P5.2: Identify, Assess, & Aggregate Return Resources P5.3: Balance Return Resources with Return Requirements P5.4: Establish & Communicate Return Plans			<b>D3 Deliver- Engineering-to-Order Product</b> D3.1: Obtain & Respond to RFP/RFQ D3.2: Negotiate & Receive Contract D3.3: Enter Order, Commit Resources & Launch Program D3.4: Schedule Installation D3.5: Build Loads D3.6: Route Shipments D3.7: Select Carriers & Rate Shipments D3.8: Receive Product from Source or Make D3.9: Pick Product D3.10: Pack Product D3.11: Load Product & Generate Shipping Docs D3.12: Ship Product D3.13: Receive & Verify Product by Customer D3.14: Install Product D3.15: Invoice  <b>D4 Deliver Retail Product</b> D4.1: Generate Stocking Schedule D4.2: Receive Product at the Store D4.3: Pick Product from Backroom D4.4: Stock Shelf D4.5: Fill Shopping Cart D4.6: Checkout D4.7: Deliver and/or install	<b>SR3 Source Return Excess Product</b> SR3.1: Identify Excess Product Condition SR3.2: Disposition Excess Product SR3.3: Request Excess Product Return Authorization SR3.4: Schedule Excess Product Shipment SR3.5: Return Excess Product  <b>DR3 Deliver Return Excess Product</b> DR3.1: Authorize Excess Product Return DR3.2: Schedule Excess Return Receipt DR3.3: Receive Excess Product (includes verify) DR3.4: Transfer Excess Product

## Thai Orchid

### *Thai orchid production*

The top five orchid growers are Nakhon Pathom, Samut Sakhon, Kanchanaburi, Nonthaburi, and Ratchaburi because of the climate and water suitable for planting orchids. It is close to the wholesale market in Bangkok as well as being convenient for transportation to overseas markets. (Office of Agricultural Economic, 2560)

### *Exports of orchids*

Major orchid export markets include Japan, USA, EU, China, and ASEAN. Thailand is one of the world's leading tropical orchid producers and exporters. The orchids produced in Thailand are exported to various markets, according to the popularity of each market. Asian markets such as Japan prefer light and pink orchids. Chinese and Indian markets require magenta, white, pink and other orchids. European markets such as Italy and the Netherlands require dark purple, red, and white orchids. The United States and Australia require dark purple, red, and white orchids. Competitors of Thai orchids are Malaysia and Singapore. (Office of Agricultural Economic, 2560)

### *Factors affecting production volume*

1. Planting orchids mostly in metropolitan areas where the land is expensive, resulting in the limited plantation.
2. Orchid cultivation requires a high investment. Farmers must have knowledge and skills in cultivation.
3. Production factors such as chemical fertilizers, pesticides, etc. These costs are expensive, resulting in higher production costs for farmers.
4. Labor shortage due to migrant workers who will work in the orchid garden as a temporary. They will be moved to work in other sources. (Office of Agricultural Economic, 2560)

### *Factors affecting export*

1. The world economy is in a slowdown, resulting in the export of orchids has not expanded.
2. Importers in the new orchid market such as India, Middle East and Russia etc. It cannot be linked to Thai exporters. As a result, the export of orchids to the market is quite limited. (Office of Agricultural Economic, 2560)

### *Problems found in orchid export*

1. Price - Small exporters are not happy with the price of export orchid to partners. The price of orchid flowers is too low in some periods, such as in the rainy season, because it is the time when the orchid flowers in Thailand will grow the best. The
2. Transportation - The problem of transporting orchid flowers to the airport is uncertainty of traffic conditions which has caused delays in transportation of orchid flowers and other problems for the following reasons: full freight, delays arriving at the airport, natural disasters, excess baggage, and steps to obtain pest free certificate are slow.
3. Export -Both small and large exporters face inadequate space at some time. For the quality of orchid flowers, only small exporters are experiencing the problem of poor harvest. The number of flowers that bloom is at least 80% of all flowers and the petals bruised because of the overcrowded transport.
4. Information / Technology - Some small exporters are not encouraged and want the government and related agencies to help orchid exporters, Reduce the cost of walking the export formalities, it supports the opening of new markets, reduces the time required for pest-free certificates, solves traffic problems, and reduces freight rates.

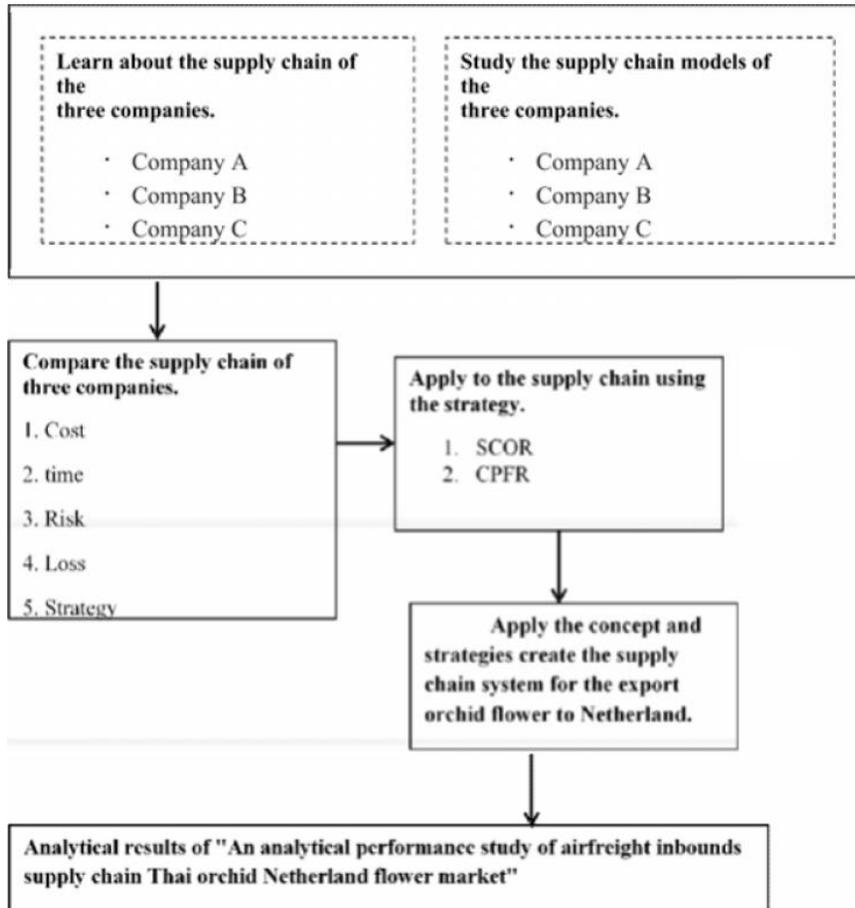
### *Orchid Market in the Netherlands*

1. Orchids in the Netherlands can be divided into two categories.
  - Mainstream -The seller orders in bulk and it's available in supermarkets.
  - Exclusive - for products that are beautiful and unique. This is found in high-end flower shops where buyers pay high prices, but get the product that is an eye-catcher, beautiful and special.
2. The criteria for buying orchids of the consumers in the Netherlands are quality, price, variety, color, stem, flower, leaf, age, aroma, and temperature.
3. Important flower market share in the Netherlands can be classified as follows: 80-90% is a personal purchase (consumer / own use) and 10 - 20% of the institutional market such as hotels, offices and event facilities. For personal purchases, 50% to 60% is offered as a gift, and 20% is used in festivals such as wedding and funeral ceremonies, and another 20% is for personal use.
4. Orchid growers in the Netherlands export the following species: cymbidium phalaenopsis paphiopedilum and oncidium, while Thailand is mainly a species of dendrobium. (CBI Ministry of Foreign Affairs, Netherlands, 2013).

### *Orchid trade in the Netherlands*

The orchid trade in the Netherlands will proceed through auctions. In the auction field, orchids will be divided into many kinds of orchids, such as varieties, single color, mixed color and flower size etc. (CBI Ministry of Foreign Affairs, the Netherlands, 2013)

## 2.2 Conceptual Framework



## 3. Research Methodology

### 3.1 Population and Sample

The sample used in this research was the nine companies involved in supply chain exporting orchids by divided into 4 parts which are the main samples from 3 forwarder companies such as Company A, Company B, and Company C, with 2 exporters, 3 producers, and these companies must be involved with the export of orchids to the Netherlands and use airfreight services with Thai Cargo.

### 3.2 Research Procedure

This research has both of two procedures that are qualitative data and quantitative data.

**Table 3** Features of Qualitative & Quantitative Data

Procedure	Qualitative data	Quantitative data
Source	Researchers have used the data gathering instrument and interviews related performance supply chain included loss, time, cost, delivery, problems, and obstacles arising from the supply chain process.	Researchers used tools, such as questionnaires, equipment to collect numerical data, observation and interviews.
Analysis through	Subjective: individuals interpretation of events is important is uses participant observation and in-depth interviews.	Objective: seeks precise measurement & analysis of target concepts using surveys, questionnaires, comparison of efficiency and method.
Display	Describing performance of the common supply chain of export of Thai orchid flower including model, strategy, tactics, and operation.	To construct statistical of cost, time, demand, supply and sales in an attempt to explain the common supply chain of export of Thai orchid flower to the Netherlands flower market.

#### Qualitative research

Qualitative research is concerned with human behavior and the experience of those involved in the supply chain process in Thai orchid export wherewith the methods used in qualitative research are focus group interviews and group interviews. This allows researchers to explore topics in depth with one or two people each time or within small groups. "Qualitative data" from research interactions recognizes that researchers are key parts of the situation rather than an external observer.

#### Quantitative Research

Quantitative research collects numerical data and it is gaining views from a large number of people. The step in quantitative research is to determine the sampling patterns of the researcher and the questionnaire form. The researchers used to gather information on the appropriate methodology.

The study of the export supply chain of orchids in all 3 models determined the survey method in accordance with the model of the supply chain. Start from source the large orchid cultivation that is the core of the orchid supply chain. Then, survey the chain of customers from that source of orchid cultivation using different sampling method to understand the supply.

### 3.3 Data Collection Methods

In this study, data were collected for this research. There are two types of information is primary data and secondary data, each of which is different.

#### *Primary data*

The researcher interviewed those involved in the supply chain process of Thai orchid export with the question of performance supply chain, supply chain model, cost, time, risk, loss, strategy and perspectives of entrepreneurs in developing the supply chain system for export Thailand orchids

to the world market. In addition, the researcher also collected data from other methods, such as questionnaires and observations.

#### *Secondary data*

The researcher collected data on production, marketing, export and other information from the research work of the agencies involved in exporting orchids. These data were obtained from websites and documents.

Production information such as Department of Agriculture, Department of Agricultural Extension, Orchid gardeners' association etc.

Marketing and export information such as Department of Export Promotion, Orchid Exporters Association, Office of Agricultural Economics etc.

#### *Data Collection Method in this study are as follows:*

1. The researcher requested a letter from King Mongkut's University of Technology North Bangkok to ask for permission and to cooperate to collect this study data for the companies involved in exporting orchids.
2. Coordinate with companies related to orchid export to clarify objectives, procedures and cooperation in this study.
3. Collecting field data by interviews and questionnaires on various issues covered in this study.

### *3.4 Data Analysis and Statistics*

Data analysis the researcher uses data analysis to generate conclusions based on interview data. Then construct the concept using theoretical principles. Comparable to supply chain management theory of each method and strategy, if complete, analyze data synthesis to find the next step.

Qualitative data, researchers need an approach to content analysis, because you will generate a lot of information, often narrating in format and optimal cycle time, costs of each company to compare costs, risks, loss of liability, delivery of problems, and efficiency of each company.

Quantitative data is analyzed using statistical methods that may be simple and complex, depending on the formula that researchers used on calculation.

## **4. Suggestion result the research**

1. The study found that to promote and support Thailand as a center for orchid export to the Netherlands market effectively, the government and related agencies such as Suvarnabhumi Airport should allocate more space. The release of goods for Perishable Good to have a strict inspection officer in accordance with Rule IATA, GAP, and GMP to reduce inspection time. and improve the product better. It also reduces the time it takes to get a Phytosanitary certificate. This will help to promote the logistics system for exporting orchids to the Netherlands and positively affect the good image of Thailand.

2. Government and related agencies should consider the route to the orchid flower carrier reached the warehouse before the speeding up. Government checks out the best route and

information technology help to determine the appropriate route and plan ahead, includes drivers and educators that specialize in the route to reduce the uncertainty of weather and road traffic.

Further research should focus on many countries to provide an alternative for companies that export to know the problems, barriers, limitations, risks, losses, and costs for any country they consider properly with their company. For the questionnaire, should define who are a sample group for a requirement to encourage to give the best answers with willingness.

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