
Survey Report on the Role of IT to Enhance Supply Chain Management in UAE Companies



Prepare by University of Wollongong, Dubai

David Van Over

Albert Wee Kwan Tan

Cedwyn Fernandes

With support from



Contents

1	EXECUTIVE SUMMARY	4
1.1	EXECUTIVE SUMMARY	4
2	INTRODUCTION	6
2.1	OBJECTIVES.....	6
2.2	SURVEY METHODOLOGY	6
2.2.1	Questionnaire Design	6
2.2.2	Survey Framework.....	7
2.2.3	Survey Response.....	8
3	PROFILE OF SURVEY RESPONDENTS	9
3.1	OWNERSHIP.....	9
3.2	TYPE OF BUSINESS.....	9
3.3	TYPE OF INDUSTRY.....	10
3.3.1	Number of Products and Services Provided.....	10
3.4	EMPLOYMENT SIZE.....	11
3.4.1	Number of staffs supporting logistics and IT functions.....	11
4	PROFILE OF SUPPLY CHAIN	13
4.1	SUPPLIER INFORMATION	13
4.1.1	Number of Suppliers	13
4.1.2	Components/Raw Materials per Active Part Number	13
4.1.3	Suppliers per component.....	14
4.1.4	Supplier and Customer Turn-around Time.....	14
4.2	CUSTOMER INFORMATION	15
4.2.1	Profile of Suppliers and Customers.....	15
4.2.2	Expenditures for Inbound and Outbound Logistics.....	16
4.2.3	Response Time for Customer Enquiry.....	16
5	COMPANY STRATEGIES AND ACHIEVEMENTS	18
5.1	LOGISTICS FUNCTION	18
5.1.1	Logistics Budget.....	18
5.1.2	Top Logistics Performance Metrics	18
5.2	OUTSOURCING.....	18
5.3	STRATEGIES ADOPTED BY ORGANISATIONS.....	19
5.4	COMPANY ACHIEVEMENTS THROUGH IMPLEMENTING IT	19
6	MOTIVATIONS AND BARRIERS TO USE IT IN SCM	21
6.1	BARRIERS TO THE USAGE OF IT	21
6.2	PRIMARY MOTIVATIONS FOR ADOPTING IT TO SUPPORT LOGISTICS.....	21
7	IT IMPLEMENTATION AND IT SKILL SETS	22
7.1	IMPLEMENTATION STATUS OF IT SYSTEMS.....	22
7.2	ADOPTING TECHNOLOGY	23
7.3	INFORMATION SHARING WITH SUPPLY CHAIN MEMBERS.....	23
7.4	MOST IMPORTANT IT SKILLS TO EFFECTIVELY SUPPORT LOGISTICS.....	24
8	CONCLUSION	25
8.1	CONCLUSION.....	25

List of Figures

Figure 2-1 SCM Survey Framework.....	8
Figure 3-1 Ownership of Company.....	9
Figure 3-2 Type of Business.....	10
Figure 3-3 Type of Industry.....	10
Figure 3-4 Number of Products or Services.....	11
Figure 3-5 Number of Employees.....	11
Figure 3-6 Percentage of Staff supporting IT and Logistics functions.....	12
Figure 4-1 Total Number of Suppliers.....	13
Figure 4-2 Number of Different Components per Active Part Number.....	14
Figure 4-3 Average Number of Suppliers for Each Component.....	14
Figure 4-4 Average Turnaround Time from Suppliers and for Customers.....	15
Figure 4-5 Profile of customers and suppliers.....	15
Figure 4-6 Average Response Time for Customer Enquiry.....	16
Figure 4-7 Average Response Time for Customer Enquiry.....	16
Figure 5-1 Logistic Performance Metrics.....	18
Figure 5-2 Outsourced Logistics Activities.....	19
Figure 5-3 Strategies Adopted by Organisations.....	19
Figure 5-4 Company Achievements through Implementing IT.....	20
Figure 6-1 Barriers to Usage of IT.....	21
Figure 6-2 Prime Motivators for Adopting IT.....	21
Figure 7-1 Implementation Status of IT Applications in Supporting SCM.....	23
Figure 7-2 Status of Adopting Technology in SCM.....	23
Figure 7-3 Type of Information share by supply chain members.....	24
Figure 7-4 Important IT Skills to Support Logistics function.....	24

1 Executive Summary

1.1 Executive Summary

This survey aims to reach out to a large number of manufacturing, trading and logistics companies in UAE to collect data about the usage of IT within their supply chain.

The following is a summary of our findings:

a) Supply Chain Priorities

Measuring logistics performance, using IT strategically and building logistics as core capability are high priorities for most of the respondents. However, most respondents do not agree have much procedures in place for reverse logistics and proper partnership arrangement for supply chain members.

b) Performance measurements for Logistics function

On-time delivery was the most important and most recognized metric for logistics performance. Accurate, complete and damage free delivery as well as inventory turnover are also ranked high amongst the performance metrics.

c) Types of logistics activities outsourced in UAE

From the survey findings, the top 3 functions/activities most commonly outsourced are transportation/shipment, customs brokerage and warehousing or terminaling. Surprisingly, Order processing was not in demanded by their customers.

d) Barriers to IT deployment

Justifying IT benefits, insufficient IT resources and long implementation time are key barriers for IT usage to support logistics operations. Long implementation time for IT systems coupled with limited IT resources could result in long waiting time before the business can reap any tangible or intangible benefits from the initiative. It was not interesting to observe that most respondents strongly disagreed that the usage of IT is not a necessity.

e) Motivations for IT deployment

The primary motivators for adopting IT are driven by reduction of cost in terms of labour cost, inventory cost and order cycle time. Most respondents also indicate that they are motivated to adopt IT as part of their Business Process Re-engineering. Organisations embarked on business process re-engineering with the same primary motivations to perform faster, reduce cost and improve their quality of service or products.

f) Achievements using IT in Supply Chain Management

Implementing IT applications have helped companies to streamline their processes and thus resulted in better productivity, quality and cycle time reduction. IT can capture data from the source resulting in higher data quality. For example, POS (point of sales) technology may be used to obtain data that reflects real demand from customers. This allows that the supply chain to respond realistically to the actual demand from the market and effectively reduce safety stock or average inventory. Statistical and historical data collected can also be used to identify customer behavior in each segment and serve as inputs to forecasting systems that predict markets trends and seasonal demand.

2 Introduction

2.1 Objectives

In today's global marketplace, organisations are faced with ever changing customer requirements and intensified competition. To succeed in these challenges, companies are looking at re-engineering their supply chain through the successful deployment of Information Technology.

This survey aims to reach out to a large number of manufacturing, trading and logistics companies to collect data about the usage of IT in their supply chain. We hope that the survey will give us insight to how IT is being used in the today's changing supply chain landscape in the UAE.

The objectives of the study are to understand the IT trends of the industry in following areas:

1. Company strategies in adopting supply chain management.
2. Barriers to usage of IT.
3. IT applications, infrastructures and standards used for information sharing and connectivity.
4. IT skills needed by logistics professional to effectively manage logistics processes.
5. Benefits of using IT in supply chain management.
6. Future plans in applying IT to enhance supply chain management.

2.2 Survey Methodology

An online survey was published on the website and email invitations were sent to SCLG members on an unsolicited basis. The members were given 3 weeks to respond to the online survey.

2.2.1 Questionnaire Design

The online survey is divided into four main sections, section A, B, C and D.

Section A is on organizational information. This section will help to understand the company profile, their supplier and customer profiles, and distribution of employees supporting logistics and IT.

Section B is on company strategies and directions. This will help to understand their company priorities in pursuit of supply chain management and whether these priorities are in line with best practices in the world.

Section C is on Information Technology to enhance supply chain management. IT includes applications, network infrastructures and standards. This will help to understand the current status of IT deployment in the manufacturing industry in Singapore. Expected IT deployment for the next two years is included to determine their future trends.

Section D is on company achievements through the implementation of IT in logistics and on the adoption of emerging technology in the future. This will help to understand the benefits of using IT in supply chain management and the types of IT skills needed to support logistics function.

2.2.2 Survey Framework

The survey was designed using a framework illustrated in figure 2-1. The framework consists of supply chain strategies, information technology and achievements.

Type of Supply Chain Strategies

The management strategies adopted by manufacturing companies to compete successfully in the market include JIT, Quick Response, Postponement, VMI etc.

Information Technology

Technology serves as a solution for many companies to reduce operating cost. It is used inline with the company's strategies. However, technology is closely integrated with a company's people and processes. Change to technology affects the employees and processes significantly.

Achievements

Are companies reaping the benefits from their investments in technology? Have they achieved their objectives in investing in technology? What do they think they benefit most from these investments?

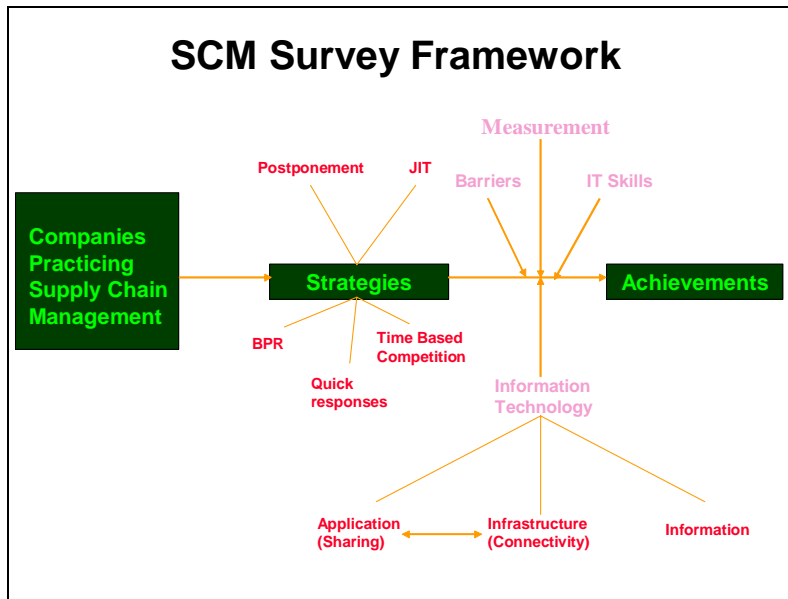


Figure 2-1 SCM Survey Framework

2.2.3 Survey Response

We received 47 valid responses from the SCLG members which is quite a reasonable return rate for online survey.

3 Profile of Survey Respondents

3.1 Ownership

40% of respondents were local enterprises of which 30% had more than 30% local equity. 45% of respondents were overseas multinational corporations.

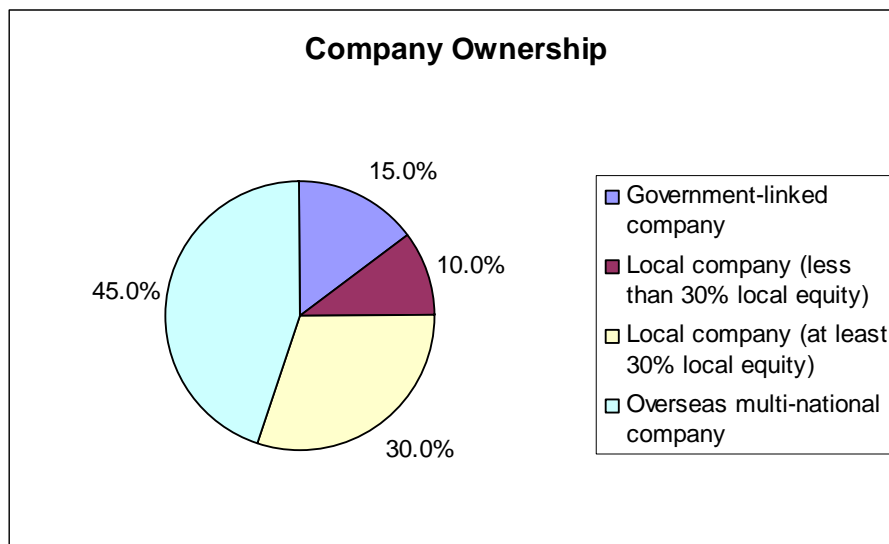


Figure 3-1 Ownership of Company

3.2 Type of Business

31% of the respondents are logistics companies and 26% of them are trading companies. The rest of the respondents are a mixture of service companies.

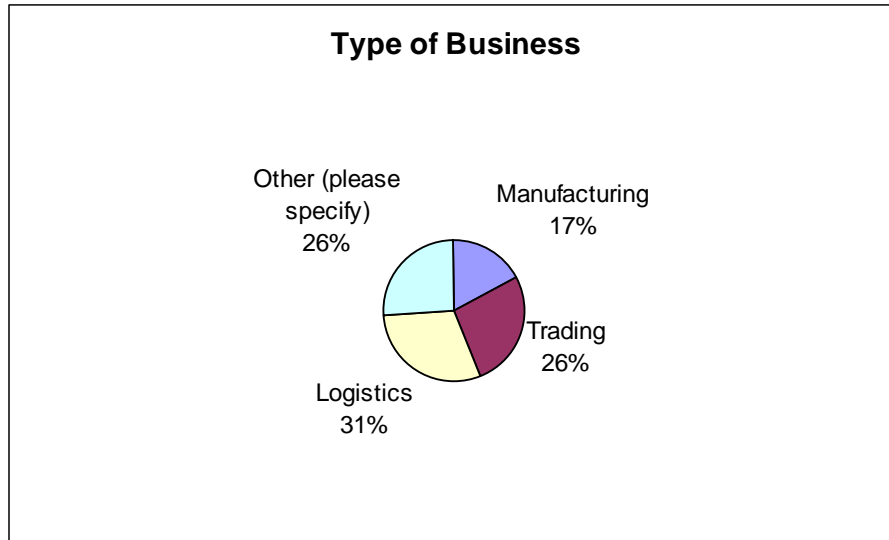


Figure 3-2 Type of Business

3.3 Type of Industry

41% of the respondents are logistics industry and 13% of the respondents are from the Consumer Electronics industry. 9% of respondents are from the Telecommunication industry.

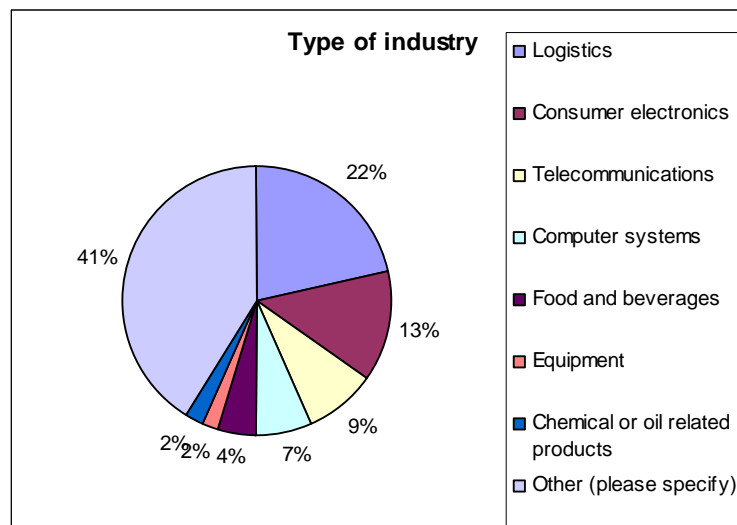


Figure 3-3 Type of Industry

3.3.1 Number of Products and Services Provided

49% of the respondents provide more than 500 products or services while 33% provide less than 50 products or services.

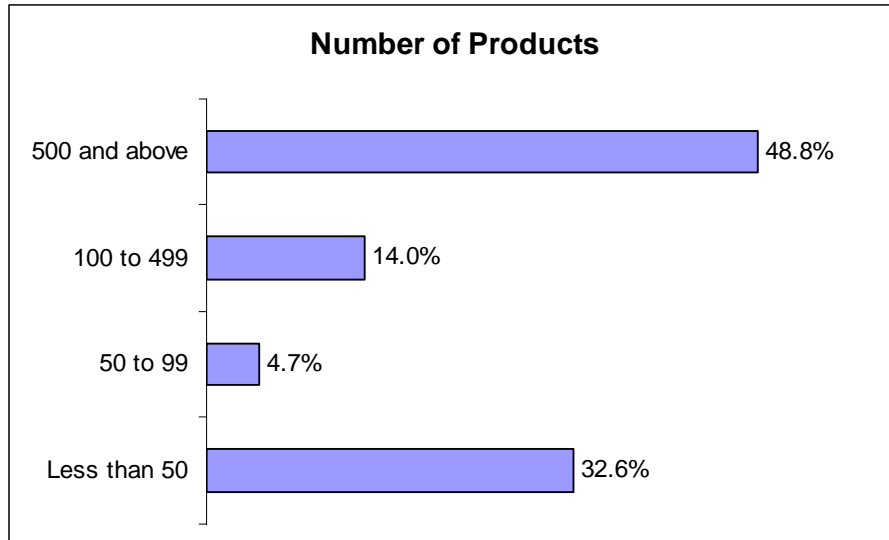


Figure 3-4 Number of Products or Services

3.4 Employment Size

In terms of company size, close to 39% of the respondents have less than 100 employees and 39% have between 100 to 1000 employees.

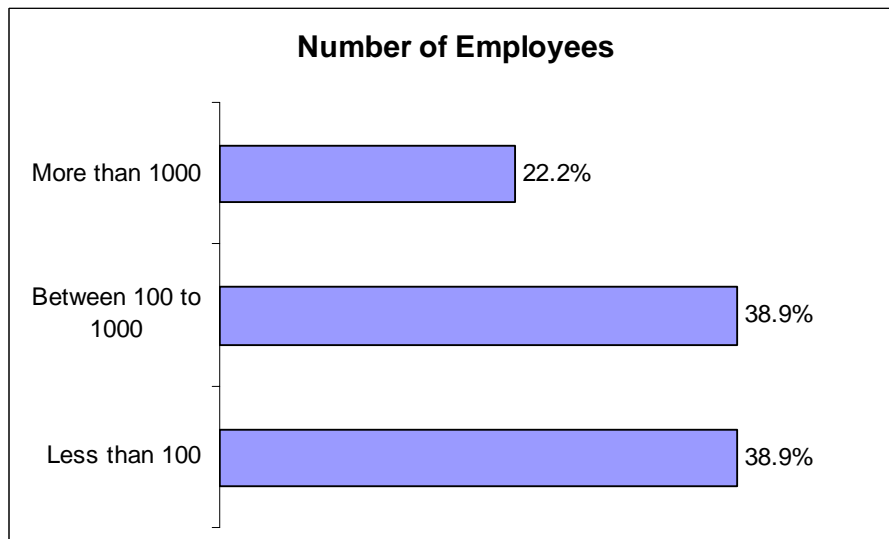


Figure 3-5 Number of Employees

3.4.1 Number of staffs supporting logistics and IT functions.

59% of respondents employed less than 10 staffs to support their IT function. In contrast, more staffs are employed by the companies to support the logistics function.

Number of Employees	Supporting IT	Supporting Logistics
Less than 10	58.8%	37.50%
Between 10 to 100	35.3%	37.50%
100 or more	5.9%	25%

Figure 3-6 Percentage of Staff supporting IT and Logistics functions

4 Profile of Supply Chain

4.1 Supplier Information

4.1.1 Number of Suppliers

39% of respondents indicated that they have between 20 – 99 suppliers while 32.1% indicated that they have more than 100 suppliers. Only 7% of respondents indicated that they have less than 5 suppliers.

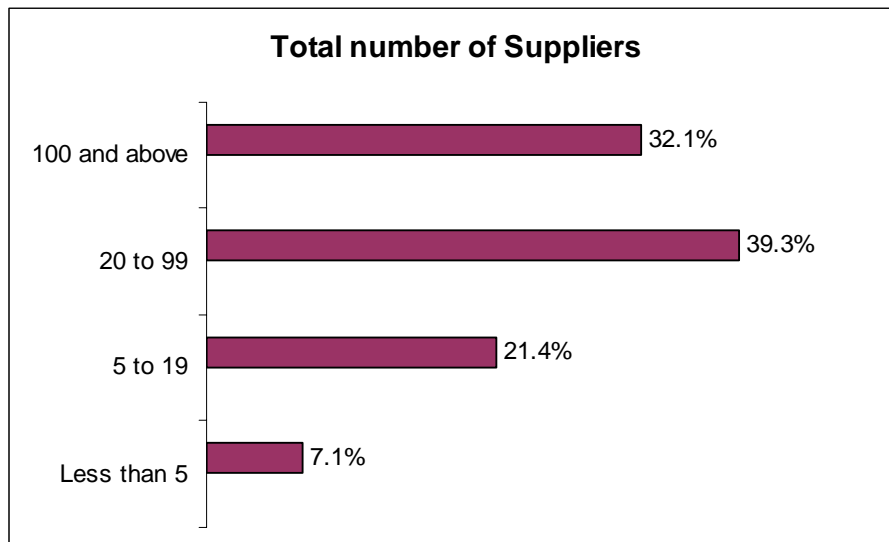


Figure 4-1 Total Number of Suppliers

4.1.2 Components/Raw Materials per Active Part Number

39% of respondents indicated that they had an average of less than 50 components per active part number, while 43% of respondents had more than 1000 components per active part number.

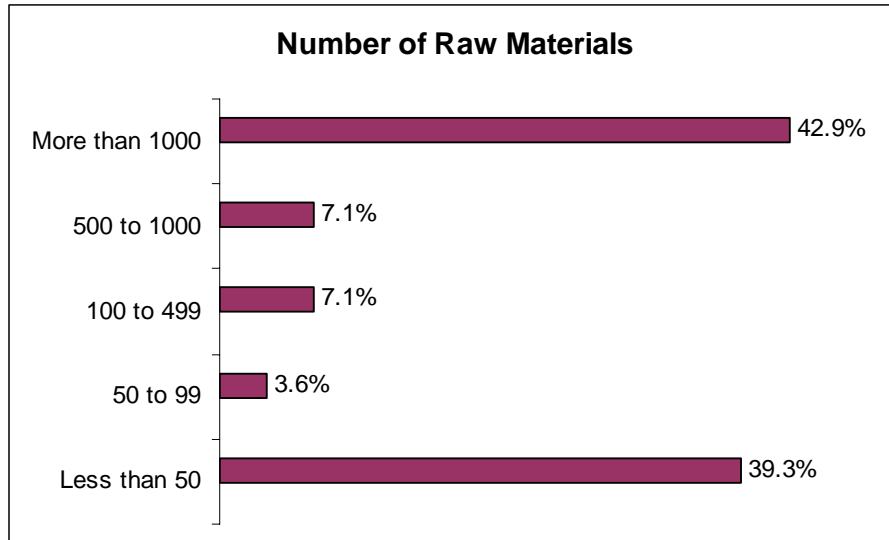


Figure 4-2 Number of Different Components per Active Part Number

4.1.3 Suppliers per component

Only 7% of respondents indicated that the average number of suppliers for each component is 1 while 29% of respondents indicated that they have an average of 2 to 10 suppliers per components. 36% indicated that they have more than 10 suppliers per components.

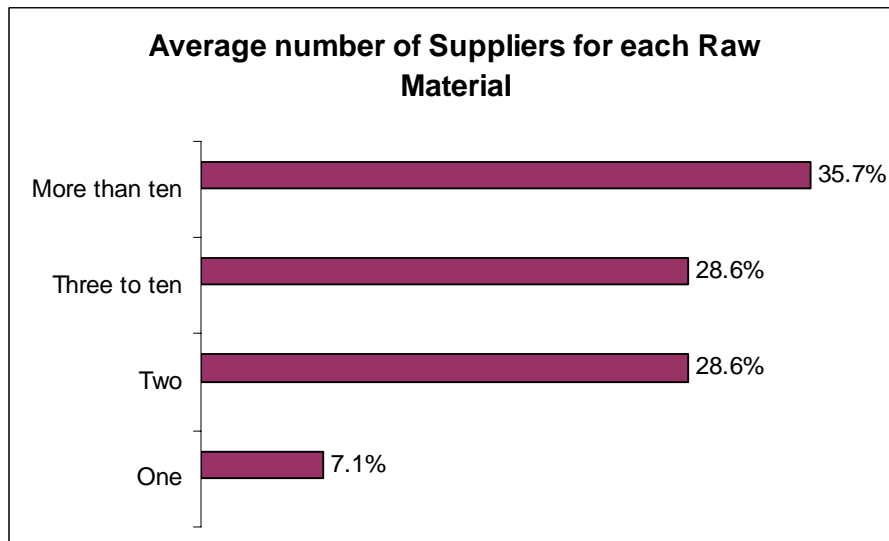


Figure 4-3 Average Number of Suppliers for Each Component

4.1.4 Supplier and Customer Turn-around Time

More than 57% respondents indicated that their local suppliers turn around within the same day or by the next day. However, 39% indicated that their overseas suppliers turn around within 2 weeks to 1 month.

In term of customer delivery, 46% respondents indicated that their turnaround time for local customer is between 3 days to 1 week. However, 61% respondents indicated their turnaround time for overseas customers is between 3 days to 2 weeks. We can infer from the results that in order to fulfill the local and overseas customer order, companies need to keep inventory for about 2 week to 1 month if the materials are sourced from overseas suppliers.

Average turn-around time for delivery	Same day	Next day	3 days to one week	1 to 2 weeks	More than 2 weeks but less than 1 month	1 to 3 months	More than 3 months
From local suppliers	14.3	42.9	23.8	9.5	4.8	4.8	0.0
From overseas suppliers	0.0	8.7	4.3	8.7	39.1	34.8	4.3
To local customers	13.6	31.8	45.5	4.5	0.0	4.5	0.0
To overseas customers	0.0	4.3	30.4	30.4	21.7	13.0	0.0

Figure 4-4 Average Turnaround Time from Suppliers and for Customers

4.2 Customer Information

4.2.1 Profile of Suppliers and Customers

67% of respondents indicated that their major market share is located overseas while 75% indicated that their major sources of materials are from overseas as well.

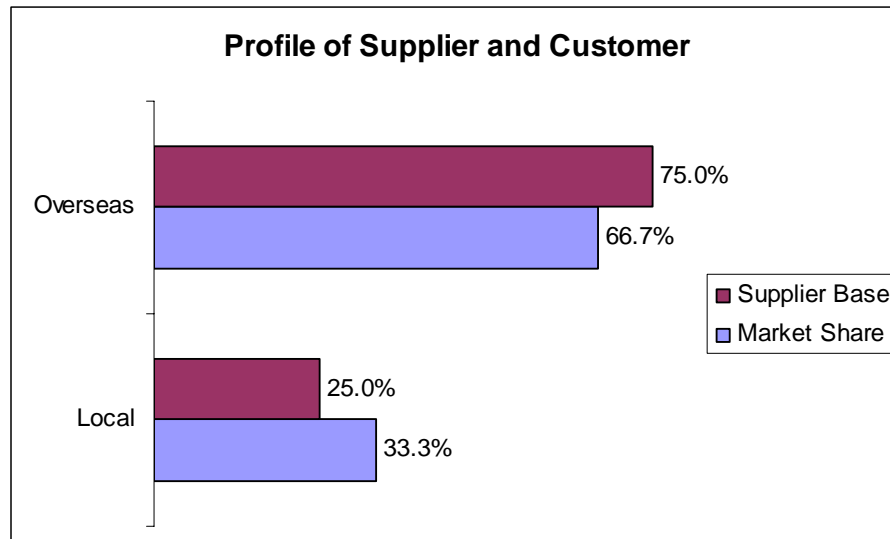


Figure 4-5 Profile of customers and suppliers

4.2.2 Expenditures for Inbound and Outbound Logistics

Most respondents indicated the most common method of transporting goods to and from UAE is by air. In the case of inbound logistics, sea transportation is the next common mode of transportation while in the case of outbound logistics, land transportation is the next common mode of transportation.

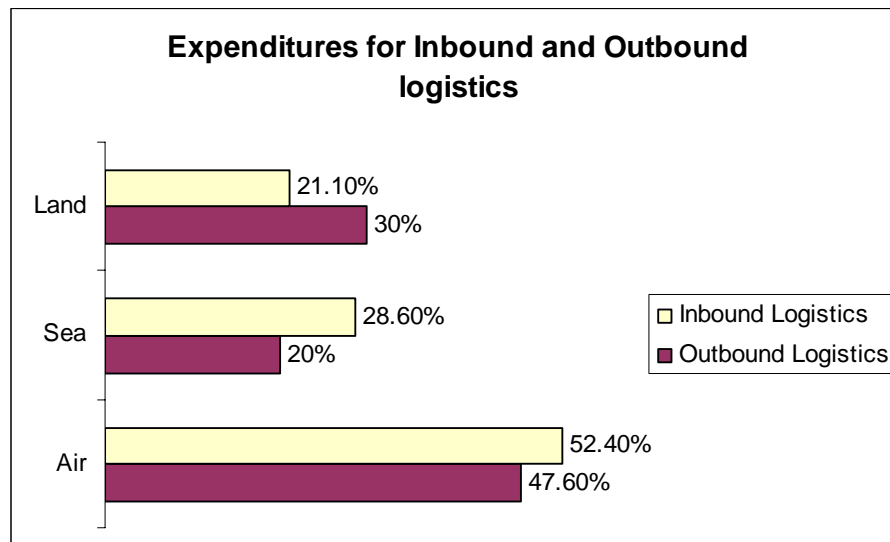


Figure 4-6 Average Response Time for Customer Enquiry

4.2.3 Response Time for Customer Enquiry

76% respondents indicated customer queries are answered within 4 hours while 24% respondents indicated they will take more than 4 hours to answer customer queries.

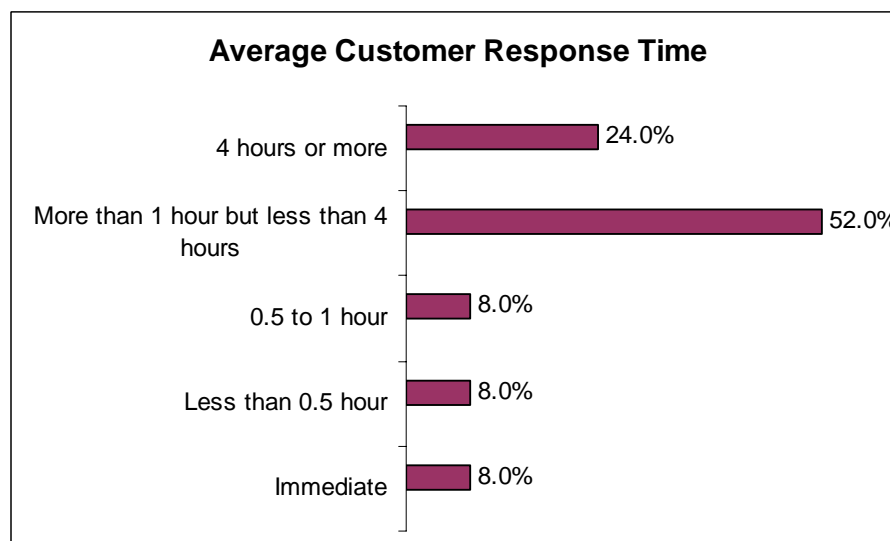


Figure 4-7 Average Response Time for Customer Enquiry

5 Company Strategies and Achievements

5.1 Logistics Function

5.1.1 Logistics Budget

65% of respondents indicated that they have an annual logistics budget and the remaining 35% indicated that they either have ad-hoc or do not have a logistics budget.

5.1.2 Top Logistics Performance Metrics

On-time delivery was the most important and most recognized metric for logistics performance. Accurate, complete and damage free delivery as well as inventory turnover are also rated high amongst the performance metrics.

Rank	Logistics Performance
1	On-time Delivery
2	Inventory Turnover
3	Accurate, complete & damage free delivery

Figure 5-1 Logistic Performance Metrics

5.2 Outsourcing

From the survey findings, the top 3 logistics functions/activities outsourced are transportation/shipment, customs brokerage and warehousing or terminaling. Surprisingly, Order processing was not in demanded by their customers.

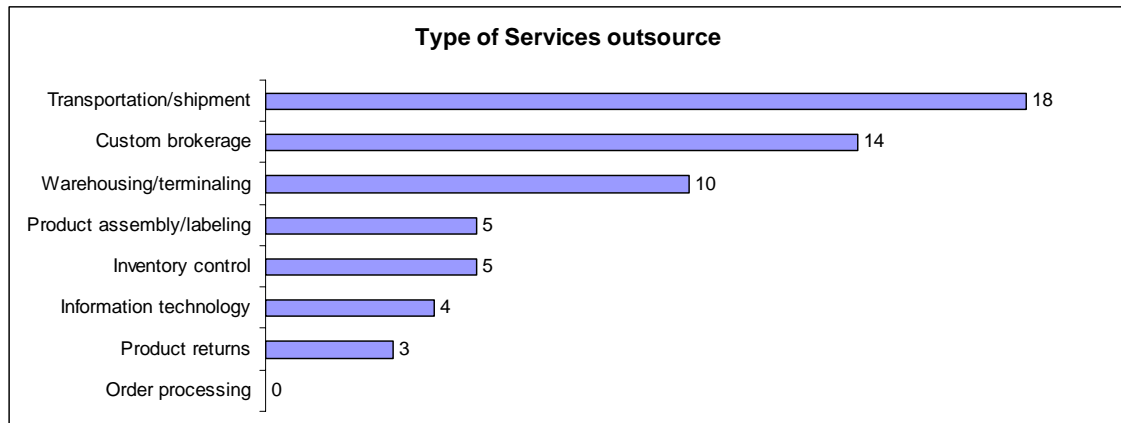


Figure 5-2 Outsourced Logistics Activities

5.3 Strategies adopted by Organisations

Logistics performance measurements, strategic use of IT and building logistics as core capability are rank high amongst the most of the respondents. However, most respondents do not agree that they have procedures in place for reverse logistics and proper partnership arrangement.

Top 3 Strategies adopted by the company
My company extensively measures logistics performance in terms of cost, productivity, customer service, asset management, and quality.
My company believes in the strategic values of using IT in our supply chain. Therefore the development of IT is driven and planned by senior management.
My company considers logistics as one of it's core strengths.
Strategies not adopted by the company
My company has procedures in place to facilitate reverse logistics.
My company has partnerships with suppliers or customers who operate under principles of rewards and risks.

Figure 5-3 Strategies Adopted by Organisations

5.4 Company achievements through implementing IT

Implementing IT applications have helped companies to streamline their processes and thus resulted in better productivity, quality and cycle time reduction. IT can capture data from the source resulting in higher data quality. For example POS (point of sales) technology may be used to obtain data that reflects real demand from customers. This allows that the supply chain to respond realistically to the demand of the market and effectively reduce safety stock and average inventory.

Statistical and historical data collected can be used to identify customer behavior in segmentation and to identify new markets etc. Statistical and historical data also serve input to forecasting systems that predict markets trends and seasonal demand.

However, respondents do not agree that IT has helped them in reducing the total systems inventory.

Top 3 achievements for using IT
My company has eliminated intermediate steps/processes to reach our customers.
My Company has substantially reduced customer order cycle time.
The quality of data has improved.
Disagree with IT achievement
My company has consistently reduced total system inventory.

Figure 5-4 Company Achievements through Implementing IT

6 Motivations and Barriers to use IT in SCM

6.1 Barriers to the Usage of IT

Justifying IT benefits, insufficient IT resources and long implementation time are key barriers for IT usage. Long implementation time for IT systems with limited IT resources could result in long waiting time before the business can reap any tangible or intangible benefits from the initiative.

It was interesting to observe that most respondents strongly disagreed that the usage of IT is not a necessity.

Top 3 Barriers to IT adoption
Difficulty in quantifying the intangible benefits
Insufficient IT resources
Long implementation time
Not a barrier for IT adoption
High failure rate of IT implementations
Not a necessity
Too many industry standards to follow (interoperability problems)

Figure 6-1 Barriers to Usage of IT

6.2 Primary Motivations for Adopting IT to support Logistics

The primary motivators for adopting IT are driven by reduction of cost in terms of labour cost, inventory cost and order cycle time. Most respondents also indicate that they are motivated to adopt IT as part of their Business Process Re-engineering. Organisations embark on business process re-engineering with the same primary motivations to perform faster, reduce cost and improve their quality of service or products.

Top 3 motivations for IT adoption
Reduce inventory
Part of business process re-engineering
Reduce order cycle time

Figure 6-2 Prime Motivators for Adopting IT

7 IT Implementation and IT Skill Sets

7.1 Implementation Status of IT Systems

As indicated by the survey respondents, most companies have implemented or are implementing the transactional systems that include production control systems, sales order processing, inventory management systems and financial management systems. These transaction systems are critical and commonly installed (in terms of percentage of implementation) because they help to manage the daily operational aspects of the individual functions of an organization.

While transactional systems provide a basic picture of activities in each functional group of an organization, they are complemented by the asset optimization/planning systems that take the transaction data from each business function as the inputs, consolidate and optimize them to provide a complete integrated view of the whole supply chain. Therefore, MRP, MPS and forecasting systems are good examples of planning systems that use transactional data to plan for material and resources.

Most respondents are aware of Supply Chain Planning applications (e.g. i2 rhythm) and have plans to implement these applications on top of their ready ERPs. Others have indicated Transportation system, network modeling and e-business systems for future plan.

IT systems implemented by company	IT systems currently implementing	Plan to implement IT systems in 2 years time
Production control system	Forecasting	Transportation management system
Sales order processing	Warehouse management system	Logistics network modeling
Inventory management system	Purchasing management system	Supply chain planning system (SCP)
Forecasting	Manufacturing resource planning (MRP II)	Customer service/return material management
Financial management system	Master production scheduling system (MPS)	e-business systems

Figure 7-1 Implementation Status of IT Applications in Supporting SCM

7.2 Adopting technology

Groupware and automatic identification technologies are ranked highest amongst the technology that respondents have adopted. Relational databases, EDI and ERPs are ranked high as technologies currently implementing by respondents. More advanced technologies (Real-time system and automation system) are indicated by respondents for adoption in 2 years time.

Technologies implemented
Groupware (e.g. Outlook, Lotus Notes)
Fault tolerance (i.e. automatic backup and recovery)
Automatic identification (e.g. bar code, RFID)
Technologies still implementing
Relational databases (e.g. Informix, Oracle, Sybase)
Electronic data interchange
Enterprise solution software (e.g. Oracle, Peoplesoft, SAP)
Technologies plan for 2 years
Real-time data processing (e.g. radio frequency technologies)
Process automation (e.g. ASRS, AGV)
Object-oriented software development

Figure 7-2 Status of Adopting Technology in SCM

7.3 Information sharing with supply chain members

As indicated by the survey respondents, financial information is shared with suppliers, customers and within its company. Order status is shared with suppliers and customers for order visibility while inventory status is shared with customer and intra-company for inventory visibility.

	Type of information share		
Information share with Suppliers	Production schedule	Order status	Account Payables / Account Receivables
Information share with Customers	Inventory Status	Order Status	Account Payables / Account Receivables
Information share with Intra-company	Inventory Status	Purchase/Sales	Account Payables /

			Account Receivables
--	--	--	------------------------

Figure 7-3 Type of Information share by supply chain members

7.4 Most Important IT skills to effectively support Logistics

In general, effective management of the supply chain requires two distinct sets of skills. Those skills are logistics skills (the domain knowledge) and IT skill.

Logistics skills facilitate the planning, execution, and management of logistics processes in the whole supply chain. It can be acquired through education, training courses, seminars, and conferences.

IT skills relate to the ability to employ information technology to effectively manage the activities in the whole supply chain, including computer networking, decision support systems, database technology, logistics network modeling, simulation etc.

From the feedback of the respondents, the top 3 IT skills identified as most important to support logistics operations are Spreadsheet, ERP software and the Operation System. Spreadsheet is the traditional tool that has been used in planning and scheduling while ERP is a transactional system commonly used to support order processing and planning.

Top 3 IT skills needed
Spreadsheets (e.g. MS Excel)
ERP software (e.g. SAP)
Operating systems (e.g. Windows, Linux)

Figure 7-4 Important IT Skills to Support Logistics function

8 Conclusion

8.1 Conclusion

Customer expectations are increasingly demanding. More customers are expecting immediate responses from enquiries. These expectations can only be met if reliable and real time information is readily available. Information Technology and well integrated business processes is the means of providing relevant and timely information. As more companies adopt IT as means of improving customer service, IT no longer becomes a competitive edge but a necessity. Respondents in the survey have clearly indicated that they believe that IT is a necessity.

Most respondents indicated that it is difficult to justify IT spending as well as getting IT resources. This suggests that although many companies are aware that IT is necessity, they might not have a good approach to the following:

- Identifying company's needs and areas that can be improved by IT
- Prioritizing IT initiatives/projects
- Managing IT projects to reap the benefits that they really need
- Manage in-house or outsourced IT operations effectively

Furthermore, the survey also suggests that respondents are aware that adopting IT does not necessarily translate to non-tangible benefits. Companies in UAE will therefore need to update their senior managers on the benefits of using IT systems to streamline their supply chain operations in order to reduce cycle time and improve supply chain visibility. While most respondents have implemented IT systems for transactional processing, more can be done to implement IT systems for planning and better decision making.

END OF REPORT