

CPSP

**CERTIFIED PROCUREMENT AND SUPPLY
PROFESSIONAL OF KENYA**

PART 1

**SUPPLY CHAIN
MANAGEMENT INFORMATION
SYSTEMS**

STUDY TEXT

PL1.04 SUPPLY CHAIN MANAGEMENT INFORMATION SYSTEMS

PL1.04.1 introduction

This module is intended to equip the trainee with knowledge, skills and attitudes that will enable him/her conduct supply chain activities electronically in an efficient and effective way

PL1.04.2 General objectives

At the end of this module the trainee should be able to:

- a) Appreciate principles and practices in automation and e-procurement
- b) Recognize the role of automation and e-procurement in supply chain management
- c) Familiarise with contemporary e-procurement systems
- d) Appreciate the e-procurement applications
- e) Appreciate the integrated information management systems used in the private and public sectors
- f) Manage current issues and trends in e-procurement

PL1.4.01 Overview of supply chain management information systems

Competence

The trainee should have the ability to demonstrate an understanding of supply chain management information systems.

Content

Theory

1. Meaning of terms used in e-procurement
2. Evolution of e-procurement
3. Main phases in the evolution of e-procurement
4. Drivers for the use of e-procurement
5. Key enablers for conducting e-procurement
 - i. E-signature
 - ii. E-Identity
 - iii. E-Attestations
 - iv. E-catalogues
 - v. E-Archiving
6. Importance of e-procurement as a strategy in procurement and supply.

Practice

1. Discussion of the main phases in the evolution of e-procurement

PL1.4.02 Procurement systems

Competence

The trainee should have the ability to apply appropriate procurement systems in a given organization.

Content

Theory

1. Types of procurement systems
 - i. Manual procurement
 - ii. E-procurement
2. Differences between manual procurement and e-procurement
3. Evolution of procurement process
4. Steps followed in a manual procurement process
5. The limitations of a manual procurement process
6. Steps followed in e-procurement process
7. Key performance benefits that accrue from e-procurement

Practice

1. Differentiate of manual procurement and e-procurement systems.

PL1.4.03 E-procurement systems

Competence

The trainee should have the ability to identify and select an appropriate e-procurement system in a given case.

Content

Theory

1. Process in e-procurement systems
 - i. e-noticing
 - ii. e-Requisitioning
 - iii. e-sourcing, e-tendering and e-Auctions
 - iv. e-Access and
 - v. e-submission

- vi. e-ordering
 - vii. e-awarding
 - viii. e-invoicing and e-payment
2. Advantages and disadvantages of e-procurement systems

Practice

1. Discussion of the various processes in e-procurement systems

PL1.4.04 Automation in supply chains

Competence

The trainee should have the ability to apply the use of information management systems in a supply chain.

Content

Theory

1. Definition of key terms used in supply chain Automation
2. Examples of supply chain management systems.
 - i. Management information systems
 - ii. Knowledge management systems
 - iii. Integrated management systems i.e Material Requirements Planning (MRP), Distribution Requirement Planning (Drop), Enterprise Resource planning (ERP).
 - iv. Databases
 - v. Purchase to pay systems
 - vi. Internet, intranets, extranets and e-commerce
 - vii. Contract management systems
3. Supply chain management information system in procurement management
4. impact of computerised information systems in procurement and supply
5. Technological and managerial security measures

Practice

1. Discussion of the technologies and managerial security measures in procurement and supply

PL1.4.05 E-procurement applications

Competence

The trainee should have the ability to select the e-procurement applications appropriate for a given organisation.

Content

Theory

1. Definition of "e-procurement applications"
2. Types of e-procurement applications
 - i. Off-the-self
 - ii. Customized
3. Essential features of an e-procurement system.
4. Selection decision
 - i. Outsource
 - ii. Develop in-house
5. Selection criteria and process
6. Application providers
7. Role of e-procurement application specialist

Practice

1. Development of an e-procurement application selection criteria.

PL1.4.06 E-procurement platforms

Competence

The trainee should have the ability to apply the key principles when developing e-procurement platforms.

Content

Theory

1. Meaning of terms used in e-procurement platforms
2. Importance of having an appropriate e-procurement platform
3. Principles of developing e-procurement platforms
4. Steps in developing an e-procurement system

Practice

1. Discussion of challenges faced when developing and e-procurement platform

PL1.4.07 Procurement information management systems (pims)

Competence

Theory

1. Meaning of integrated PIMS

2. The PIMS model
3. Procure-to-pay process using various PIMS
4. Benefits and limitations of using PIMS in procurement and supply
5. Security and application support measures in PIMS
6. Tracking and accountability measures (audit trail) in PIMS
7. End-user features in PIMS

Practice

1. Discussion of benefits and limitations of using PIMS in procurement and supply

PL1.4.08 Emerging issues and trends in procurement information management systems.

Competence

The trainee should have the ability to cope with the emerging trends in PIMS.

Content

Theory

1. Emerging issues and trends in the PIMS.
2. Challenges and opportunities posed by the emerging issues and trends in PIMS
3. Coping with or adopting to the emerging issues and trends in PIMS.

practice

1. Discussion of the challenges and opportunities posed by the emerging issues and trends in PIMS

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TOPIC 1

OVERVIEW OF SUPPLY CHAIN MANAGMENT INFORMATION SYSTEMS

Introduction

Recently the concepts of supply chain design and management have become a popular operations paradigm. This has intensified with the development of Information and Communication technologies (ICT) that include electronic data interchange (EDI), the internet and World Wide Web (WWW) to overcome the ever increasing complexity of the systems driving the buyer-supplier relationships.

The complexity of SCM has also forced companies to go for online communication systems. e.g. the internet increases the richness of communications through greater interactivity between the firm and the customer (Watson et al 1998). Graham and Hardaker (2000) highlight the role of the internet in building commercially viable supply chains in order to meet the challenges of virtual enterprises. All these reasons seem to point to the ever increasing importance of e-procurement to both public sector and private sector organizations.

MEANING OF DEFINITIONS USED IN E-PROCUREMENT

E-procurement According to CIPS, e-procurement is: “The combined use of electronic information and communications technology (ICT) in order to enhance the links between customer and supplier, and with other value chain partners, and thereby to improve external and internal processes. E-Procurement is a key component of e-business and e-commerce.” E-procurement is the term used to describe the use of electronic methods, typically over the Internet to conduct transactions between awarding authorities and suppliers.

The process of e-procurement covers every stage of purchasing, from the initial identification of a requirement, through the tendering process, to the payment and potentially the contract management

E-procurement (supplier exchange) definition; E-procurement is the business-to-business purchase and sale of supplies and services over the Internet. An important part of many B2B sites, e-procurement is also sometimes referred to by other terms, such as supplier exchange. Typically, e-procurement Web sites allow qualified and registered users to look for buyers or

sellers of goods and services. Depending on the approach, buyers or sellers may specify prices or invite bids. Transactions can be initiated and completed. Ongoing purchases may qualify customers for volume discounts or special offers.

eSourcing: preparatory activities conducted by the contracting authority/entity to collect and reuse information for the preparation of a call; potential bidders may be contacted, if admitted by the legal rules, by electronic means to provide quotations or manifest interest.

eNoticing: advertisement of calls for tenders through the publication of appropriate contract notices in electronic format in the relevant Official Journal (national/EU); electronic access to tender documents and specifications as well as additional related documents are provided in a non-discriminatory way.

eAccess: electronic access to tender documents and specifications as well support to economic operators for the preparation of an offer, e.g. clarifications, questions and answers.

eSubmission: submission of offers in electronic format to the contracting authority/entity, which is able to receive, accept and process it in compliance with the legal requirements.

eTendering: is the union of the eAccess and eSubmission phases.

eAwarding: opening and evaluation of the electronic tenders received, and award of the contract to the best offer in terms of the lowest price or economically most advantageous bid.

eContract: conclusion, enactment and monitoring of a contract / agreement through electronic means between the contracting authority/entity and the winning tenderer.

eOrders: preparation and issuing of an electronic order by the contracting authority/entity and its acceptance by the contractor.

eOrder Status: preparation and delivery of status information against the eOrder.

eInvoicing: preparation and delivery of an invoice in electronic format.

ePayment: electronic payment of the ordered goods, services or works.

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TOPIC 3

E-PROCUREMENT SYSTEMS

PROCESS IN E-PROCUREMENT SYSTEMS

The term eProcurement refers to the use of electronic means in conducting a public procurement procedure for the purchase of goods, works or services.

In order to have a common view within the eProcurement Forum, for the scope of this initiative the following sub-phases of the electronic public procurement process have been identified:

i. E-informing/ E-Noticing

E-informing is not directly associated with a stage in the procurement process; it is the process of gathering and distributing procurement information both from and to internal and external parties using Internet technology.

ii. E-requisition

E-Purchase Requisition System is a complete web based system for managing, tracking and controlling purchase requisition process in your organization.

Key Benefits:

- Reduce the paper trail. Instead of filling out tons of paper forms, everything in the system is done electronically and kept electronically. Users simply submit an electronic requisition and check the status online.
- Everything is online. Reviewing piles of paper requisitions is a troublesome task, with e-Purchase Requisition System; managers can review electronic requisitions online that provide far more information and take less time to review. Any reviews or comments can be communicated with the requestor via e-mail.
- Easy approval setup. Administrator can setup the approval matrix easily using the administrative panel. Approval matrix can be set according to organization's policy.
- Easy integration with various ERP systems- e-Purchase Requisition System is designed to have a quick and easy integration with various ERP systems. It interfaces with the

various modules (Finance, Inventory or Purchasing) to provide creation of PR's and various analysis reports.

- Reporting make easy- e-Purchase Requisition System features a variety of comprehensive reports for managers to do analysis and budgeting control.
- Security and privacy- e-Purchase Requisition employs extensive security measures to ensure your data is secure, and accessible only by authorized users within your organization. Access is controlled via a unique user name and password which users must enter each time they log on to the system.

E-Purchase Requisition System extremely simple to use, data is automatically defaulted in for you wherever possible, and the description that you enter on-line for your goods/services is exactly what you request for. In addition, your order gets out to the vendor much quicker.

It allows organizations to leverage the expense control benefits of traditional purchasing procedures without incurring the associated financial overhead or administrative burden. It helps to eliminate tons of paper forms as everything is done electronically.

Organizations simply set up their procurement processes and procedures in e-Purchase Requisition System, and the entire purchasing process is handled online.

In additional, e-Purchase Requisition System can be integrated with various ERP systems such as Microsoft Dynamics AX. It interfaces with the Inventory Module to provide creation of PR's from the Low-level Inventory Report. It also interfaces with the Purchase Order Module. Creation of PO's from PR's and maintenance of inventory levels is automatic.

E-Purchase Requisition System consists of various sections for easy to use and maintain:-

- Purchase Requisition
- Requisition Review
- Approval Cycle
- Purchase Order
- Reporting

iii. E-Ordering

E-ordering and web-based ERP is the process of creating and approving **procurement** requisitions, placing purchase orders, as well as receiving goods and services ordered, by using **software** systems based on the Internet System. Usually used... E-ordering For indirect (facility) goods and services.

E-ordering and web-based ERP

E-ordering and web-based ERP is the process of creating and approving procurement requisitions, placing purchase orders, as well as receiving goods and services ordered, by using software systems based on the Internet.

System	Usually used...
<i>E-ordering</i>	<ul style="list-style-type: none"> ✓ For indirect (facility) goods and services. ✓ By all employees of an organization. ✓ For ad-hoc ordering.
<i>Web-based ERP</i>	<ul style="list-style-type: none"> ✓ For direct (product related) goods and services. ✓ By a procurement department. ✓ For planned ordering.

iv. **E-sourcing**

E-sourcing supports the specification phase; it can be used to pre-qualify suppliers and also identifies suppliers that can be used in the selection phase. For suppliers the benefit is: “marketing” and for the buying organizations the benefit is facilitating the sourcing of suppliers.

SAMPLE NOTES

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TOPIC 5

E-PROCUREMENT APPLICATIONS

Procurement software is a computer program or suite that allows an organisation to automate the process of purchasing materials and maintaining an inventory of goods. Procurement software can generate purchase orders, execute the ordering process online, match invoices to materials received and pay all bills electronically.

TYPES OF E-PROCUREMENT APPLICATIONS

1. OFF-THE-SHELF APPLICATIONS

It is short form for commercial off the shelf (COTS)

It's software that is ready made and available for sale to the general public e.g. Microsoft Office is a COTS product that is packaged as a business solution.

COTS product are designed to be implemented easily into existing system without the need for customization.

Advantages of COTS

1. Applications are provided at reduced costs.
2. The application is more reliable when compared to custom built software.
3. COTS is more maintainable because the system documentation is provided with the application.
4. They are readily available in the market.
5. The application is of higher quality since competitors strive to produce better softwares.

Disadvantages of COTS

1. Slow to adapt or change to industry's needs. Your feature request may get ignored if it doesn't benefit the larger customer base.
2. It may require you to change infrastructure e.g. processing power, memory
3. It may require you to change your process to fit the software.
4. They are readily available in the market.
5. It cannot entirely fulfill customer requirements.

2. CUSTOM SOFTWARE

A computer program or web application that is specifically designed for a particular purpose, department or company.

The software is owned by the customer and can incorporate features from other software programs.

Customized softwares are written and designed to meet client's specific business processes.

Since custom software is developed per single customer, it can accommodate the customer's particular preferences and expectations.

They may be designed in a stage by stage processes allowing all the possible hidden dangers to be undertaken into account including issues which were not mentioned in the specification especially during the first phase of software development process may involve many departments including marketing, engineering, research & development and general management.

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TOPIC 7

PROCUREMENT INFORMATION MANAGEMENT SYSTEM (PIMS)

MEANING OF INTEGRATED PIMS

PIMS is a smart system which collects and synthesizes procurement related information all over the country. It is an online based central and integrated data management system concerning to the procurement activities. PIMS uses centrally updated data warehouse to track, record and verify the procurement history and current capabilities of the contracting parties i.e. contractors/suppliers/consultants

During bidding, bid evaluation and contract execution PIMS serves as a necessary source of transformation of authentic information and bridges the bidders and procuring authorities.

Components of PIMS and registration

The following are components of PIMS:

- Central database server (data warehouse)
- Online service package
- System members (system administrator, procuring authorities, bidding parties, scheduled banks)

PROCURE-TO-PAY PROCESS USING VARIOUS PIMS

The Complete Procure to Pay Cycle

The procure to pay cycle has become a standardized process for both procurement practitioners and service providers alike. If you are involved in procurement at all, it's a term you may have heard thrown around, but are you aware of the actual components of the cycle? Let's break it down for you!

The Typical Procure to Pay Cycle

These steps are usually involved in your typical procure to pay cycle:

- Identification of Requirement
- Authorization of Purchase Request
- Final Approval of Purchase Request
- Procurement
- Identification of Suppliers
- Inquiries
- Receipt of the Quotation
- Negotiation
- Selection of the Vendor
- Purchase Order Acknowledgement
- Advance Shipment Notice
- Goods Receipt
- Invoice Recording
- 3 Way Match
- Payment to Supplier

If following best practices and the cycle outlined above, when an employee working in a specific department (i.e., marketing, operations, sales, etc) wants to purchase something, they submit a purchase request to a manager (also considered an approver).

Authorization of Purchase Request

The purchase request is either approved or denied based factors such as the type of request, the cost, the product, and allowable budget. If the request is above the approval limit the particular approver is authorized to approve, it will be sent to the next most senior employee for revision (or approval).

Final Approval of Purchase Request

After the appropriate department has authorized the respective request, it will then be sent to the inventory controller. That person will review the other open purchase orders to identify if there are any similar orders from others in the company. After the approval of the inventory controller, the purchase request will be available to the procurement department. Note: often in smaller businesses, the approver, inventory controller, and buyer/procurement department may be the same individual.

Procurement

The buyer (in the procurement department) will identify any existing contracts that may exist with suppliers. If there is such a contract, then a Call-Off will be generated and sent to the supplier. In the event no such contract exists, then the buyer will initiate a supplier search.

- **Identification of Suppliers:** The buyer may speak with the requester of the products, search on the Internet, use referrals, search databases, etc. to identify potential the suppliers of the requested material.
- **Enquiries:** Once the suppliers are identified, the buyer sends the request for quotation/proposal (RFP)

Receipt of the Quote

At this point, the supplier will send the quotes back to the buyer. The buyer will then send the quotes back to the department for a technical evaluation. Once reviewed, the buyer will send the changes and requests back to the supplier. Finally, the supplier sends the commercial quote to the buyer.

Negotiation

Short-listed suppliers are invited for negotiations. During the negotiation period, buyers and suppliers can negotiate various issues that will help maximize their businesses position. Some of the key negotiation topics include:

- Reduction in the prices of the materials
- Year-over-year reduction in prices

- Quantity price discounts
- Delivery terms and conditions
- Year-over-year improvement in quality
- Initial quality
- Freight charges
- Insurance charges
- Payment terms

Selection of the Vendor

After negotiations with all the selected vendors, one will be awarded the contract, according to the selection criteria. The contract is then awarded and the vendor will be sent the purchase order.

Purchase Order Acknowledgement

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