Business Architecture Model for Con Edison Supply Procurement System
Project Overview
Consolidated Edison Company of New York Supply Procurement System

Business Overview
Consolidated Edison Company of New York (Coned) is an investor-owned energy company, with more than $10 billion in annual revenues and approximately $17 billion in assets. The service area covers 660 square miles in North East USA, serving a total customer population of approximately 8.3 million. The company's supply chain process is a critical part for the continued operation of its core energy business. There is broad range of supplies for operational support. The following is a snapshot of a few items:

- Leatherwork gloves
- Cable knife
- Work boots
- Flashlight
- Electric tape
- Clamp / bolts
- Bottled water
- Office stationary
- Traffic flags
- Transformers
- Car batteries
- Tires
- Cables and reels
- Traffic cones
- Computer units
- Hard hats

Organization Model
1. Coned Office Employee - Any employee of the company who is authorized to submit a requisition for supply, or material for the conduct of business and to support company operations.

2. Section Manager - Direct reports of company field and office employees who are in charge of managing the day-to-day operations of office unit functions.

3. General Manager - Mid-level managers who are the direct reports of Section Manager. They oversee the functions and operations of a particular section of a department.

4. Department Vice President - Heads a particular department of the company that is responsible for distinct business function. Examples of departments are Accounting, Auditing, Engineering, Facilities, Human Resources, etc.

5. Material Analyst Support (MSA) - Also known as Procurement Specialist. They are company personnel who specialize in analyzing materials and corresponding supplier contracts so supplies to the company are of required standards, correct quantity and reasonable price amounts. MSA are primarily assigned to the company's Purchasing Department but perform job functions for different departments.

6. Purchasing Department Administrators - Oversee the company's procurement process and deals with various vendors and suppliers of services and materials. Resolves conflict with materials purchased by the company from a supplier that is found inadequate, not delivered or sub-standard in quality.

7. Accounts Payable Analyst (Accounting) – Personnel from Accounts Payable Department receive the invoices from vendors/suppliers for service, material or work rendered to the company. Accounts Payable Analyst generates expenditure reports; procurement summary reports and resolves payment conflicts with vendor or company personnel/department involved.
8. Central Warehouse Manager (CWM) - Overseas and manage a central storage plant for supplies delivered to the company

9. Central Warehouse Personnel - Works under the supervision of CWM and provides for receipt, storage and staging of materials to include cable truck loading and cable yard maintenance.

10. Distribution Center Manager (DCM) - Overseas and manage a distribution center for inventory, re-ordering and pick-up and delivery of supplies and materials.

11. Distribution Center Personnel - Works under the supervision of DCM and perform timely pick-up and delivery of materials and supplies to all company locations.

Possible Scenarios:
The Supply Procurement System will benefit the company by addressing, among others, a number of inefficiencies in the supply chain process. The two possible scenarios are:

1. An office manager in the Human Resources department who holds office in the main corporate office of the company needs office supplies that will sustain department requirements for the next three months. Due to the volume and diverse items needed, the usual trip to the nearest Staples is not practical, more so very tiring and time consuming.

The same office manager bumped into a colleague in the Staples store who is also buying company supplies. They discussed the experience with other managers and learned that there is no centralize process to perform a routine ordering and delivery of office supplies and equipment.

2. The general manager of Transportations Department would like to determine why there is always no car batteries left in storage in the central warehouse at the end of each month. He would like to know who are requisitioning for car batteries and how often they do it and how much was spent for car batteries procurement per month.

Timeline:

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Part #1: - Project Description, Scenarios, and Timeline
Part #2: - Business Model (Business Process, Organization, Location)
Part #3: - Portable Data (Applications of XML) Design using UML
Part #4: - Static Model
Part #5: - Dynamic Model
Location Model

- New York Headquarters (Main office)
- Central Stores Warehouse (Astoria, Queens)
- Manhattan Distribution Centers
  - Distribution Center and Garage # 53 - West 28th Street (281, 11th Ave, Manhattan)
  - Distribution Center and Garage # 54 - East 16th Street (700 E 16th St, Manhattan)
  - Distribution Center and Garage # 55 - East 110th Street (2141 1st Ave, Manhattan)
- North Region Distribution Centers
  - Distribution Center and Garage # 57 - Van Nest (1615 Bronxdale Avenue, Bronx)
  - Distribution Center and Garage # 58 - Bruckner (1560 Bruckner Blvd, Bronx)
  - Distribution Center and Garage # 80 - Yonkers (30 Worth Street, Yonkers)
  - Distribution Center and Garage # 89 - Rye (178 Theorfremd Ave, Rye)
  - Distribution Center and Garage # 90 - Eastview (315 Old Saw Mill River Rd, Eastview)
- South Region Distribution Centers
  - Distribution Center and Garage # 40 - Victory Blvd (4400 Victory Blvd, SI)
  - Distribution Center and Garage # 42 - Davis Avenue (1 Davis Ave, SI)
  - Distribution Center and Garage # 47 - College Point (124-15 31 Ave, Queens)
  - Distribution Center and Garage # 60 - Brooklyn, 3rd Ave (222 First Street, Brooklyn)
  - Distribution Center and Garage # 61 - Cleveland Street (2950 Atlantic Ave, Brooklyn)
  - Distribution Center and Garage # 65 - Neptune Avenue (1201 Neptune Ave, Brooklyn)

- There are **129** company property locations were the distribution centers travel for supply pick-up and delivery. These locations are mostly:
  - Substations
  - Field Office Units
  - Field Office Units Sub-units.
Process Model

The following illustrates the supply distribution activity of the company from requisition order to product delivery and payment:

A. Ordering Process:
1. Buyer creates a requisition
2. Requisition is routed to organizational hierarchy for approval.
3. Total Order is reviewed by applying business rules.
4. Generate a purchase order (PO) for approved requisitions. Alert buyer about declined requisitions.
5. Send approved PO’s to supplier portal ‘virtual’ marketplace.
6. Supplier receives the PO and delivers material to buying organization.
7. Supplier generates invoice and send it to buyer.
B. Receiving and Distribution Process:
1. Central Warehouse receive supply delivered by different suppliers
2. Warehouse personnel acknowledges receipt of supplies
3. Supplies are either stocked for inventory or re-delivered immediately (cross-docking).
4. Some supplies (emergency or perishable items) are delivered straight to distribution centers or to user organizations. Distribution Center Personnel acknowledge receipt of items.
5. Supply items are delivered to buyer or user organization.
6. Receipt record is sent to Purchasing department to reconcile items ordered with items received. Payment report and exception reports are produced. Exception reports are handled for resolution.
7. Payment reports are made available to Accounts Receivable.
8. Invoice is received from Supplier Company.
Order Supply Business Process

Enter Buyer Form
Menu
1.1

Select “Shopping Cart”
1.1.1

Select Search Criteria
1.1.2

Browse Product
1.1.3

Add Item to Cart
1.1.4

Remove Item from Cart
1.1.5

Review Shopping Cart
1.1.6

Submit Order
1.1.7

Order (Requisition) Approval
1.2

Select Order requesting approval
1.2.1

Enter approval action
1.2.2

Enter Disapproval
1.2.3

Review Requisition Order
1.2.4

Transfer Requisition into PO
1.2.5

Submit PO
1.2.6

Purchase Order
1.3

Check Account Status
1.3.1

Review Requisition Order
1.3.2

Transfer Requisition into PO
1.3.3

Submit PO
1.3.4

Confirm PO submission
1.3.5
Business Process Hierarchy

Create Order
  1.1
  Browse Products
  1.2
  Search Product
  1.3
  Compare Products
  1.4
  Change Shopping Cart contents
  1.5
  Submit Order
  1.6
  Track Order
  1.7
  Cancel Order

Anonymous Order
  2.0
  Review Order Amount
  2.1
  Determine Approval Level
  2.2
  Process Approval Action
  2.3
  Change/Cancel Order
  2.4
  Execute PO Creation
  2.5
  View Order History

Send Order
  3.0
  Transform requisition into PO
  3.1
  Transform PO to purchase order format
  3.2
  Transmit PO to "marketplace"
  3.3
  Receive transmitted confirmation
  3.4
  Create PO submission history report
  3.5

Receive Order
  4.0
  Acknowledge central warehouse receipt
  4.1
  Distribute Supply to buyer (distribution)
  4.2
  Update Order Status to complete delivery
  4.3
  Create Order Receipt History
  4.4
  View Order Receipt History
  4.5
Elementary Business Process Description

1. Create Order
   1.1 Browse Product – View all products in list view and in detail view. Manage update of contents though back-end systems.
   1.2 Search Product – Locate a particular product or set of product based on keyword, order number, stock number, stock keeping unit number (SKU#), etc.
   1.3 Compare Products – Ability to select more than one product and perform a product to product comparison based on a common set of criteria
   1.4 Change shopping cart contents – Allow buyer to view contents of shopping cart and provide ability to add, remove or cancel ordering process
   1.5 Submit Order – Orders entered and accepted by the system can be referenced and retrieve for latter use.
   1.6 Track Order – Provide ability to find status of an order entered in the system.
   1.7 Cancel Order – Ability to allow cancellation of an order up to point that is deemed acceptable by the business rules.

2. Approve Order
   2.1 Review Order Amount – Ability for approving manager to browse, select and review details of an order
   2.2 Determine Approval Level – Provide approval level based on the total amount of the order.
   2.3 Process Approval Action – Approving manager can approve or disapprove an order
   2.4 Change/Cancel Order – Approving manager can change details of an order before entering an approval action.
   2.5 Execute PO creations – An approved requisition order will be marked ready for PO creation after all business rules has been applied.
   2.6 View Order History – Produce reports that summarizes all (requisition) orders entered into the system

3. Send Order
   3.1 Transform requisition into PO – A purchase order will be created based on the details of a requisition (order) that has been marked as ready for PO creation and after validating the account to be charged for the order.
   3.2 Transform PO to Market format – A PO will be parsed and formatted to well-formed and valid XML format for transmission over http protocol.
   3.3 Transmit PO to “marketplace” – Procurement system will send a valid PO to “Pantellos” marketplace.
   3.4 Receive Transmittal confirmations – A message is received by the sending organization that a PO is successfully sent and received by the “Pantellos” marketplace.
   3.5 Create PO submission history report - Produce reports that summarize all PO’s sent to the “Pantellos” marketplace with corresponding order detail and total amount.

4. Receive Order
   4.1 Acknowledge central warehouse receipt – Acknowledge receipt to product delivery by signing receipt and made it known to system by “bar-coding” into inventory system.
   4.2 Deliver supply to buyer (distribution) – Central warehouse or distribution center deliver the actual product to physical company location and receives confirmation (signature) of delivery.
   4.3 Update Order status to complete/delivered – Company receipt of product, either in central warehouse or distribution center indicates completion of supply order process.
   4.4 Create Order Receipt history - Produce reports that summarize all supplies/products (name. Description, quantity, etc) received from suppliers.
   4.5 View Order Receipt history – View/browse a list of all supplies/products received by the company from any location for a given date/time range.