

**BUSINESS  
PROCESS  
ENGINEERING**  
**BSE: 7th  
SEMESTER**

DAY:

**8/9/25**

→ Class Code (463 bnn 2y)

**④ Business:**

→ Perform Task

→ Produce Product

→ Generate Profit

**⑤ Process:**

→ Series of steps to produce product or to deliver source.

**⑥ Engineering:**

→ Best Practices Framework

→ Goal

⑦ Revenue Maximize, Expenses reduce.

⑧ Less Time to produce or deliver.

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## ① Definition:

→ BPM | BPE is a collection of activities, events, decision points, include actors, objects to give some outcome.

- ② To optimize the performance
- ③ Diagrams and automate the process (No code & Low Code processes)
- ④ Search it ( No code and low code platforms).

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④ Process:

→ Ingredients

○ Actors

○ Objects

○ Events

○ Activities

○ Decision Point

→ Outcomes

Positive

Negative

↓  
Value

④ Site rental construction work.

④ Modeling language.

BPM N  
 Business Process Management → Notation

\* BPM → Textual  
 → Modeling → BPNN  
 → Petri Nets

⑤ Symbols:

- Bold-Circle (Process Complete)
- Circle (Event)
- Diamond (Decision point / Gateways)
  - : 'X' stands for exclusive
- Lane represents actors

⑥ Model is used because of visual representation to easily understand.

⑦ If processes are well-defined, then improvements will be made.

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\* BPM is the art of science of overcoming how work is performed in an organization.

→ Cost, Execution Time, Error Rate reduces which result in profit increases.

#### \* Related Disciplines:

→ Total Quality Management

→ Operations Management <sup>(Physical and technical)</sup>

+ → Lean (eliminate irrelevant elements)

→ Six Sigma (error rate minimize)

\* BPM process improvement

will result better product.

#### \* Process through ages:

→ Workers Focus

→ Workers Improvement by focusing on single product process.

#### \* Identify Performance Measurement Metrics:

→ Site Engineering rental equipments requests Clerk and check metrics then contact supplier.

- (i)
  - ① Cycle time, waiting time
  - ② No. of availability supplier.
  - ③ No. of positive outcome or  
No. of negative outcome(errors)
  - (\*) Cost, Cycle, Wait Time, Errors Rate
- Equipment Rent Process <sup>(Reduce)</sup>

### (ii) Process Discovery:

⇒ As is Process

⇒ Reading case studies and  
understanding is discovery  
stage of process.

① ⇒ Process Description

② ⇒ Modeling / Diagram  $\xrightarrow{\text{Flowcharts}}$  BPMN

### (iii) Analysis:

⇒ We analyze and try to  
reduce waiting time.

### (iv) Redesign:

⇒ Again design product by  
removing unnecessary steps

⇒ To be Process : (i) text "model

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## (v) Implementation:

⇒ Start the process, train all stakeholders

## (vi) Process Monitor:

⇒ Keep check and maintain error log.

\* This is a cyclic process and checks for any process errors and repeat process steps.

\* Compliance and conformance means whether it is following design rules or not.

\* Stakeholders slide (Read it) + Quiz

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(Which process  
to consider for)

Identify Performance  
metrics

## Process Identification

(Compliance  
Conformance  
Monitoring)

(Process Model  
Information  
System log)

Process Monitoring  
& control

Process Discovery

(as is model)

Process  
Architecture

Process Analysis

Process  
Implementation

Process  
Redesign

(To be Process  
Model)



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- ④ Process Participants (all stakeholders performing day to day activities)
- ④ Models are involved in 2 Steps (Process Discovery & Redesign)

## ⑤ Process Models:

1 - What we need to do and when  
(control flow)

→ Conveying Transparency (<sup>Focus of</sup> Process Models)

2 - What we need to work on.

→ Artifacts (physical & electronic)

3 - Who does the work.

→ Human Resources or any resources perform activities

## ⑥ Potential Elements:

→ Objectives, goals

→ Risks

→ Policies, rules

→ Knowledge

## ⑦ Issues:

→ Standard Notations not followed

→ Different level of granularity

- Different level of scope.
- Different Terminology.

## ④ Model:

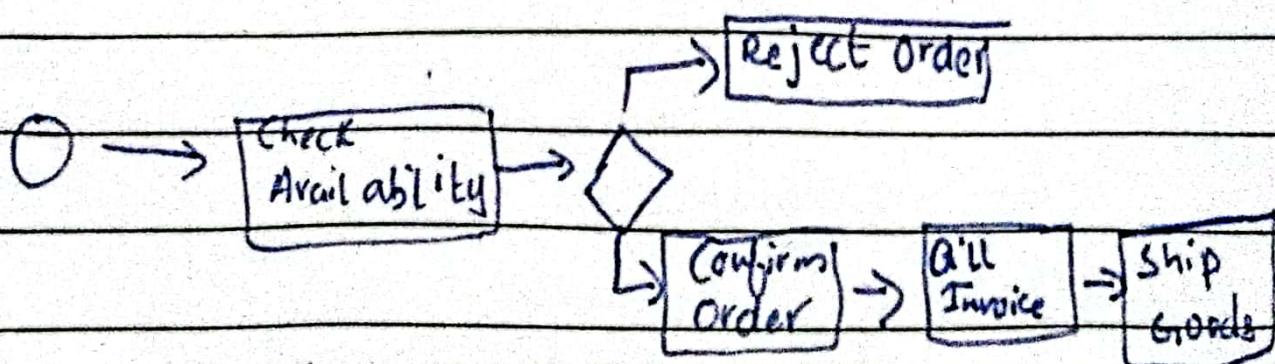
- Models are abstraction from real world to reduce complexity
- Look and feel (<sup>Dummy</sup> Project)
- Develop:
  - (i) Modelling subject
  - (ii) Target audience

## ⑤ BPMN:

→ Core things are below four:

- (i) Activity
- (ii) Start/end
- (iii) Gateway
- (iv) Sequence flow →

## ⑥ Order to cash scenario:



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## ① Purposes of Process Modeling:

### ① Naming Conventions:

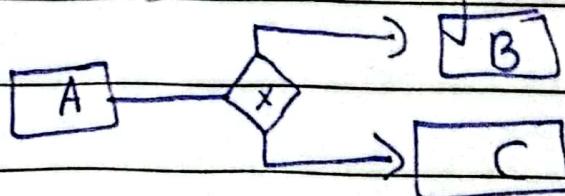
→ Event: noun + past participle verb

→ Activity: Imperative verb + noun

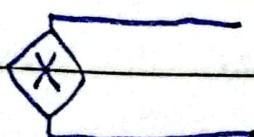
→ Handle down payments:

② Credit and Debit

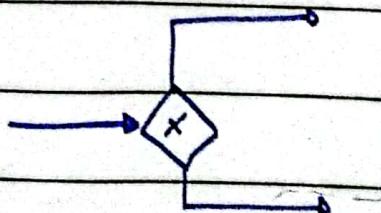
### ③ Parallel Gateway



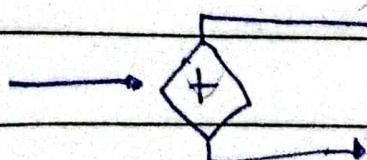
### Exclusive Gateway



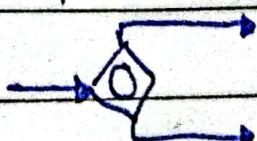
### ④ XOR-split



### ⑤ AND split



### ⑥ OR gateway split



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## Process Model using BPMN

### ① Food Delivery App:

→ Description:

- ① Open App
- ② Check for Login Status  
(Is Logged In)
- ③ Menu Page
- ④ Explore Restaurants
- ⑤ Choose Meal
- ⑥ Add to Cart
- ⑦ Place Order
- ⑧ Select Quantity, Address etc.
- ⑨ Choose Payment Method
- ⑩ Confirm Order
  - ↙ Reject
  - ↙ Accept

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## ① Needed to create a model:

### ⓐ Modeling Language:

→ Vocabulary (Activities, Events, Gateways, Sequence, Flow)

Syntax ↓ Semantics ↓ Notation

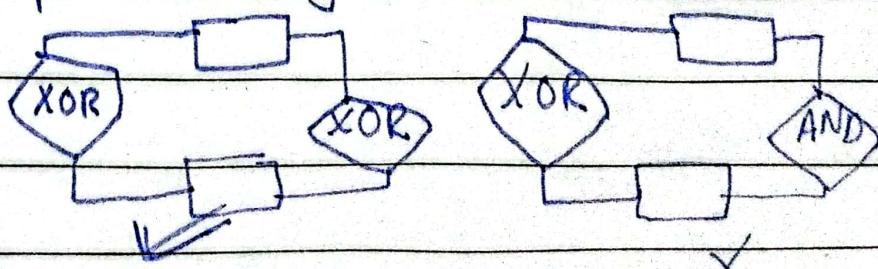
ⓑ Structural Correctness,

Behavioral Correctness. (No deadlocks and infinite loops)

ⓒ A single execution of a process model is called process instance.

ⓓ Process instance pass through gateway, then multiple ways are there, which creates token accordingly.

ⓔ Split and join will be same

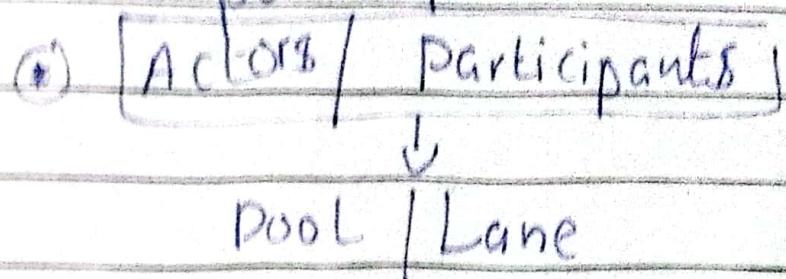


## ① Transformation Artifacts.

Information we are working on during process, so we use symbols, notations accordingly, which are known as information artifacts.

## ① Resources:

→ Model the actors and participants



→ Active resources & Passive Resources  
(Driver) (Bulldozer)

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- i) Purpose is to optimize the process and make the better model.
  - ii) Process description must be understandable and generate a meaningful model.
  - iii) Sometime, we don't define complete model, we make fragment of it.

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→ In start we are making business description to Diagram and now we convert Diagram into business description.

## EXERCISES

④ 3.9:

Claim was received and then creation of claim was done, Recording of claim be checked. Now decide on basis of claim. If it is accepted then benefit offered and prepare claim discharged and benefit record payment was done and claim will be closed and operate outgoing payment. If claim is to be rejected, then we review claim rejection and reject it. Then we check for claim rejection.

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## ④ Information Artifacts :

→ Data Store

→ Data objects

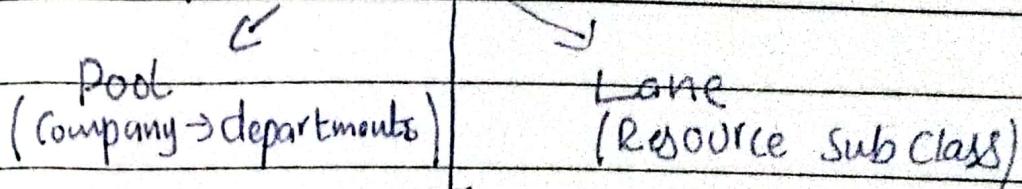
→ Text Annotation

→ Resources (That participate in process)

Active Resources

(Process participant,  
system, equipment)

→ Element



Message Flow  
(Between two pools,  
we use it)

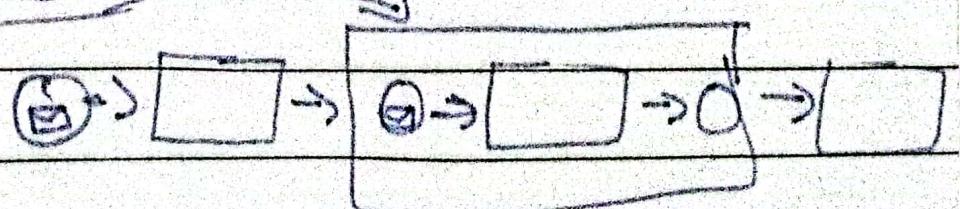
→ From Lane, we can draw solid line and from pool to pool, we draw dotted line.

→ Start event Message.



→ Public View (Black Box), Private View (White Box).

→ Subprocess



↑ (loop)

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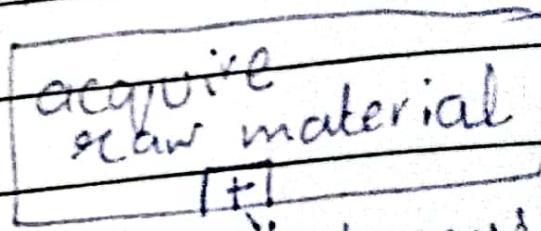
→ Collaboration diagram :

models between at least two business parties (each modelled by a pool)

→ Understanding will be made easily, by dividing a big model into sub-processes.

→ Eg. Shipment & Payment & Inventory  
(Subprocesses in rectangle)

→ Subprocess Symbol:



IT!

↓ subprocess

Benefits:

① Simplified

② Reuse  
(Global sub-processes)

: Solid Process  
(Box Highlights)  
(Generic) / Raw

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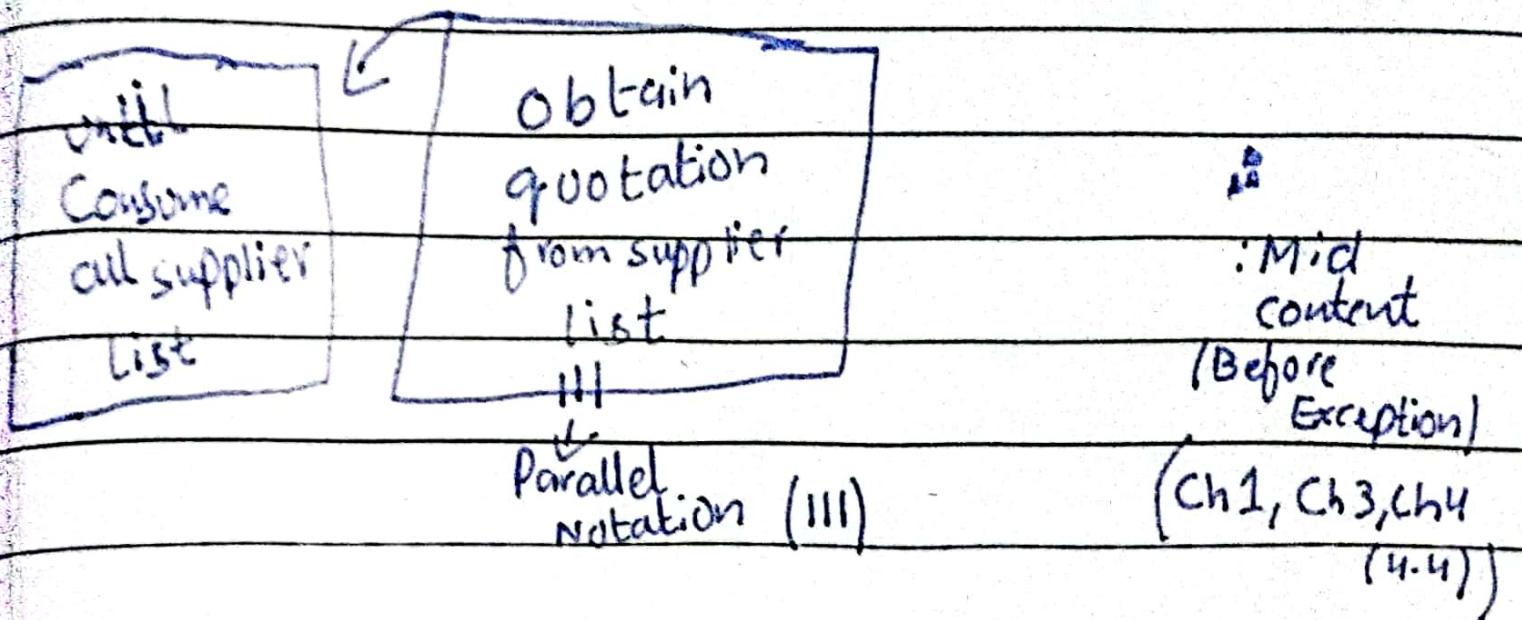
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- ① Repetition | Loops | Cycles
- ② Parallel Repetition:



→ Parallel Process works  
and we choose best from it.  
and further continue accordingly.



→ Modeling Scenario (Camunda) (Example Scenario)