Business Process Modelling

What is Business Process ?

- Is triggered by an external business event
- Is comprised of all the activities necessary to provide the appropriate business outcomes in response to the triggering business events.
- Transforms inputs of all types into outputs, according to guidance (policies, standards, procedures, rules etc.) employing reusable resources of all types.
- Contains activities which usually cross functions and often organizational units.
- Delivers a product or service to an external stakeholder or another internal process.
- Usually connects to other processes.

Types of Processes

- **Core Process**
  - Satisfy external customers
  - Directly add value to the business
  - They respond to a customer request and generate customer a satisfaction
- **Supporting Process**
  - Satisfy internal customers
  - Does not directly add value to the business

Process Patterns

- Case Process
  - entity passed between roles that perform some update on the entity
- Event Driven Process
  - event is raised and a process executes in response to the event
- Cycle-Driven Process
  - single process happens periodically – only one such instance
- State Maintaining Process
  - maintain the state of one or more objects

Business Process Analysis

- Generate the information for an organisation to make an informed decision for assessing the activities of the business
- Analysis helps:
  - Stakeholders to examine the current processes
  - To identify what needs to change
  - To develop a concept for a new system
- Analysis methods
  - Interviews
  - Observation
  - Process modelling

Aspects of business processes

- There are different aspects of business processes that can be modelled
  - Control aspect: describes the order in which the activities are executed
  - The organisational aspect describes the organisational structure (resources and agents) and in which way they are involved in a business process
  - Informational aspect: describes the information that is involved in a business process how it is represented and how it is propagated among different activities

Aspects of business processes

– **Events** can trigger **activities** or **activities** generate event

  - Customer order received, order confirmation created

– **Data** is processed by **activities**

  - Customer data

– **Employee** are responsible for **activities** and an employee belongs to **organisational units**
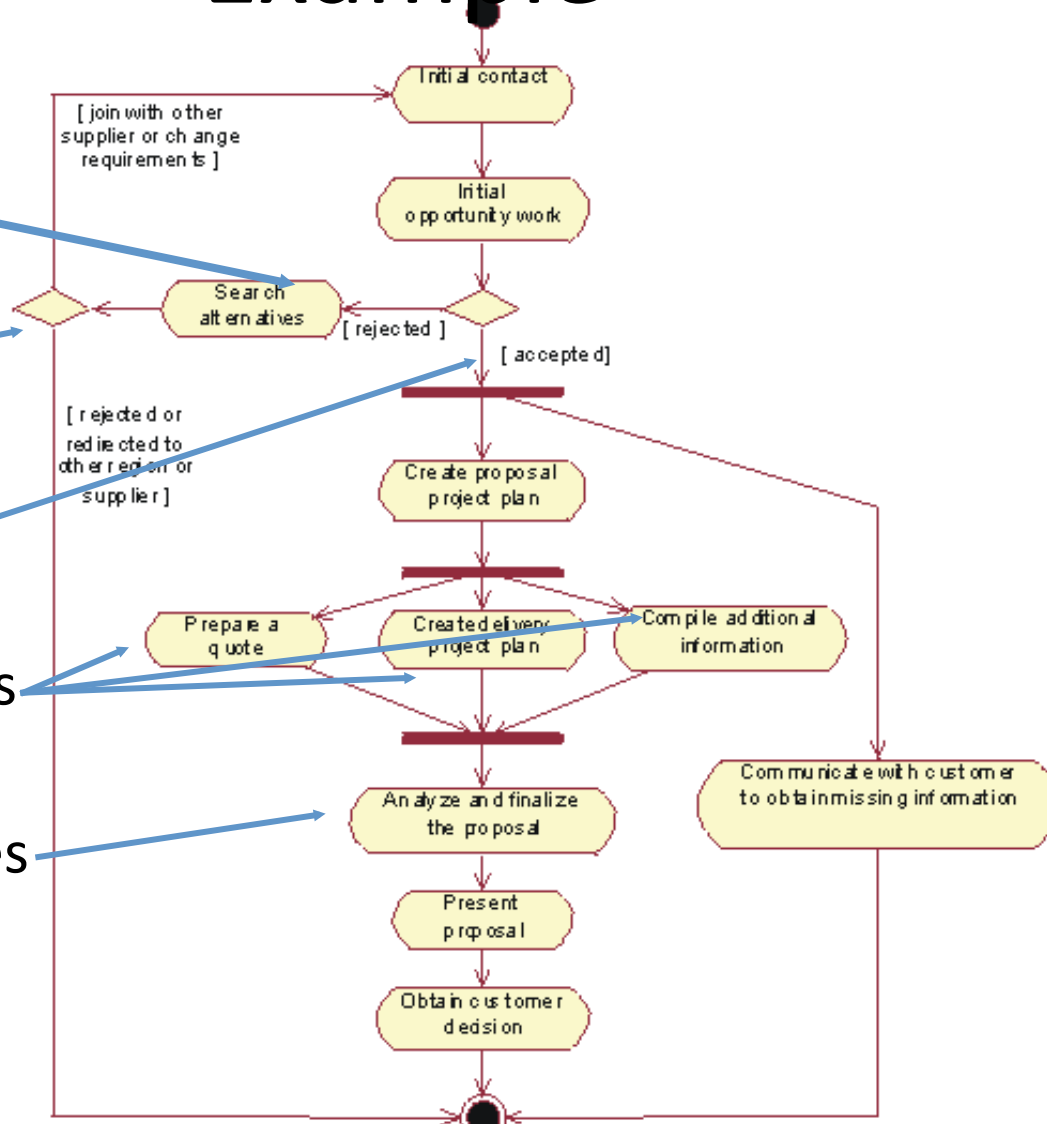
Modelling Business Process

- Choice of modelling language
  - UML activity diagram (based on flow chart)
  - Business Process modelling notation (BPMN)
- Modelling aspect of the business process involve
  - actors (people, business units,..)
  - Concurrent activities
  - Explicit synchronisation points
    - A task can only start until several other concurrent tasks are complete
  - End-to-end flow of activities

Example

- Activity

- Decision Point

- Guard condition

- Parallel Activities

- Merged Activities

Initial contact

[join with other supplier or change requirements]

Initial opportunity work

Search alternatives

[rejected]

[accepted]

[rejected or redirected to other region or supplier]

Create proposal project plan

Prepare a quote

Create delivery project plan

Compile additional information

Analyze and finalize the proposal

Communicate with customer to obtain missing information

Present proposal

Obtain customer decision

Activity

- Processes involve a number of activities that are linked by a sequence flow

- An activity may be a single task or may be further decomposed into a sub-process (with its own activities, flow, and other process elements)

Event

- A process is initiated by an event
- Events may be:
  - Actions taken by a person
  - Change in a condition
  - Passage of a period of time
- Events may create, interrupt, or terminate processes

Decision

- Fork where the flow of work splits into multiple flows

OR

- Where separate flows merge together

Flow

- Indicate the direction of the step-by-step sequence of the workflow

- In general, diagrams are drawn from top to bottom or in the direction of reading to show the passage of time

- The process flow may split to allow for activities to occur simultaneously and later merge

Swimlanes

- Swimlanes can be used to group activities based on the actor (person, business unit, etc) who performs them.
- If an activity diagram is partitioned into swimlanes, then each activity must appear in exactly one swimlane.
- When the flow of work crosses the boundary of a swim lane, responsibility for that work then passes to another person or group within the organization
- .

Using Swim lanes

- Swim lanes identify the role or organizational unit responsible for the activity

- Named Vertical columns

- Derived from Rummler-Brache's Process modelling methodology
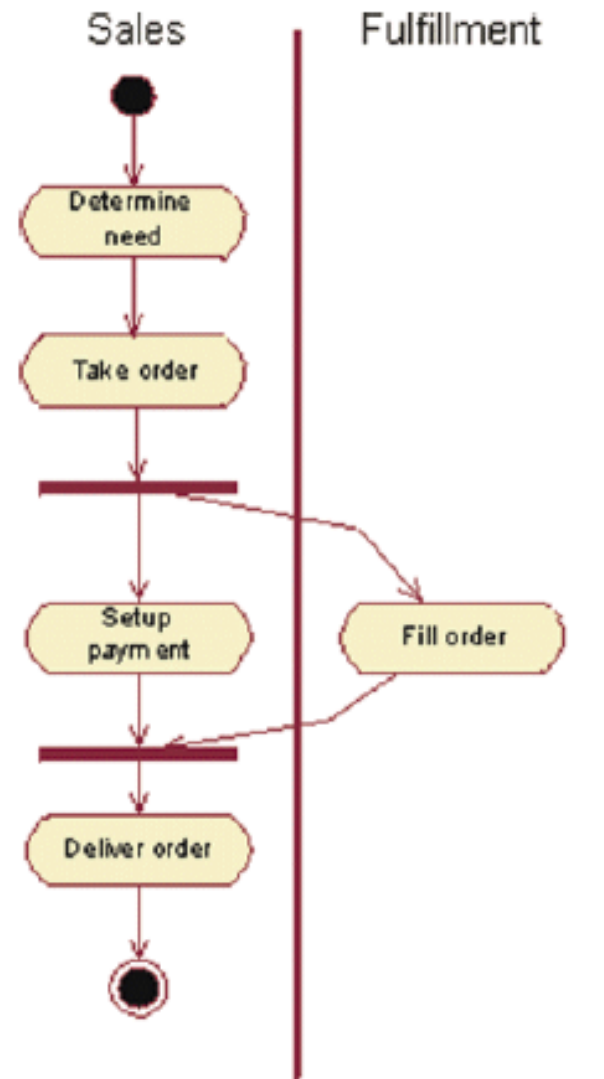
Exercise: Credit Card Application

A Client applies for a credit card. The Customer Service Department receives the application and requests a credit check from the Credit Bureau for the Client, which processes the request. The Customer Service Department receives the Client's credit rating from the Credit Bureau. If the Client's credit rating is unacceptable, it sends the Client a rejection letter. If the credit rating is acceptable, it sends the credit card to the Client. Upon receipt, the Client calls the Customer Service Department to activate the card, and the card is activated.