Business Process Modeling Notation (BPMN)

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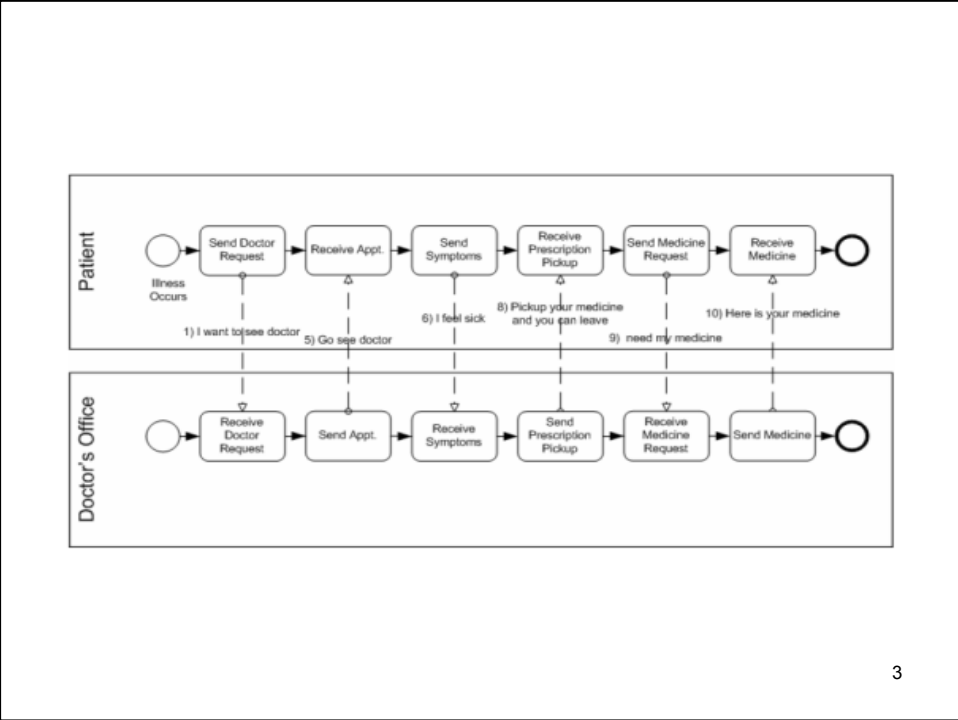alain.wegmann@epfl.ch
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What is BPMN?

- Developed by the Business Process Management Initiative (BPMI) (www.bpmn.org)

- Notation readily understandable by all business users

- **Business Process Diagram** (BPD) that represents:
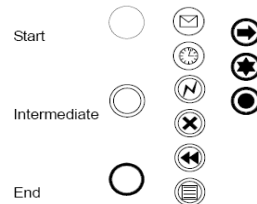 – activities
  – flow between activities

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BPD

- Four categories of elements:

  - Flow Objects
  - Connecting Objects
  - Swimlanes
  - Artifacts

Flow Objects (1)

- **_Event -_** something that "happens" during the course of a business process.

- Three types of Events:
  - Start, Intermediate, End
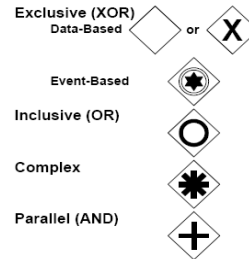
- Many triggers:
  - Message, timer, error, etc.

Start

Intermediate

End

Flow Objects (2)

- **Activity -** generic term for work that company performs.

- An Activity can be atomic or non-atomic (compound).

- The types of Activities are:
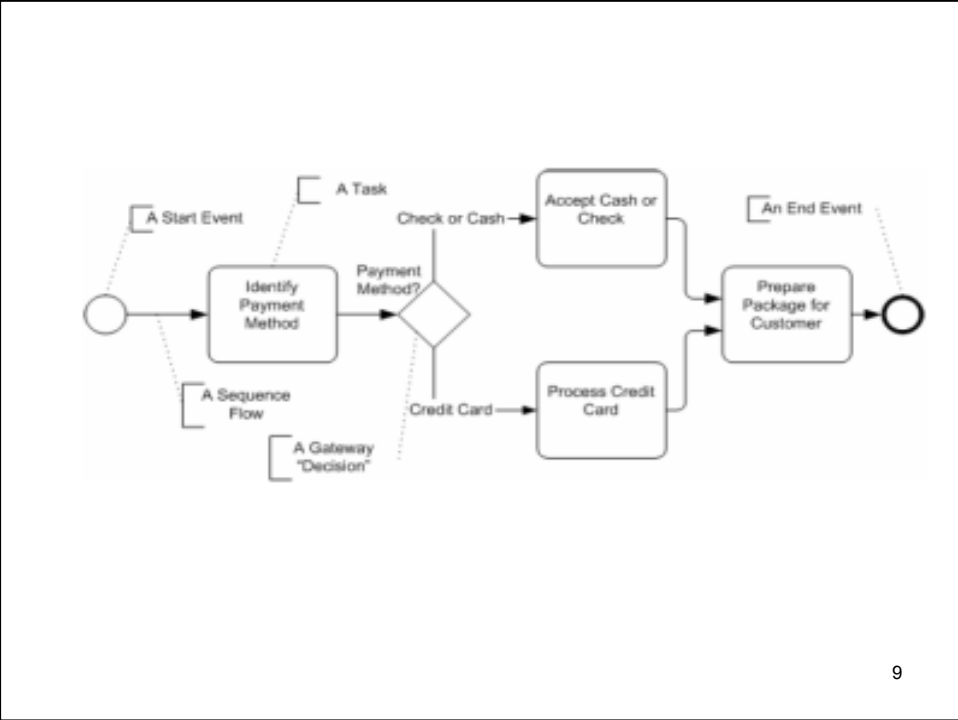 - *Task*
  - *Sub-Process*.

Flow Objects (3)

- *Gateway* - control the divergence and convergence of Sequence Flow.

- A gateway can determine traditional decisions, as well as the forking, merging, and joining of paths.

Exclusive (XOR) Data-Based   or

Event-Based

Inclusive (OR)

Complex

Parallel (AND)

Connecting Objects

- *Sequence Flow* – sequence of activities in a process (in a pool)

- *Message Flow* – flow of messages between processes (between pools).

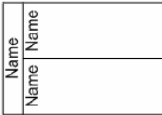- *Association* - associate data, text, and other artifacts with flow objects (input and output of activities).

A Start Event · A Task · Check or Cash → Accept Cash or Check · An End Event · Identify Payment Method · Payment Method? · Prepare Package for Customer · A Sequence Flow · Credit Card → Process Credit Card · A Gateway "Decision"

Swimlanes

- *Pool* : a Participant in a Process (in general B2B situations).

- *Lane* : a sub-partition within a Pool. Lanes are used to organize and categorize activities.

Artifacts

- ***Data Objects*** – represent data.
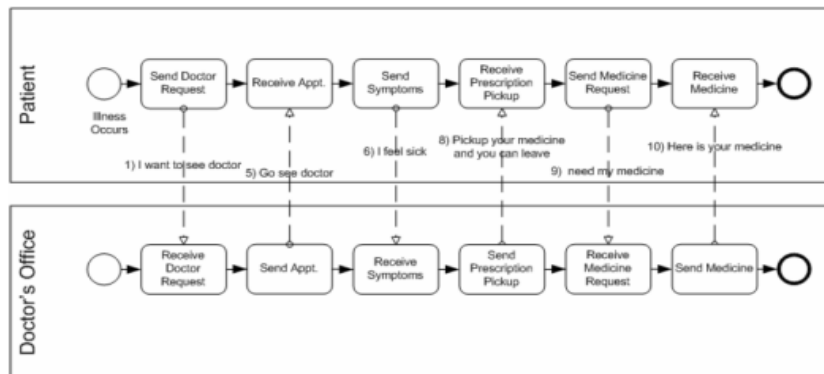
- ***Annotations*** - comments

Name
[State]

Text Annotation Allows
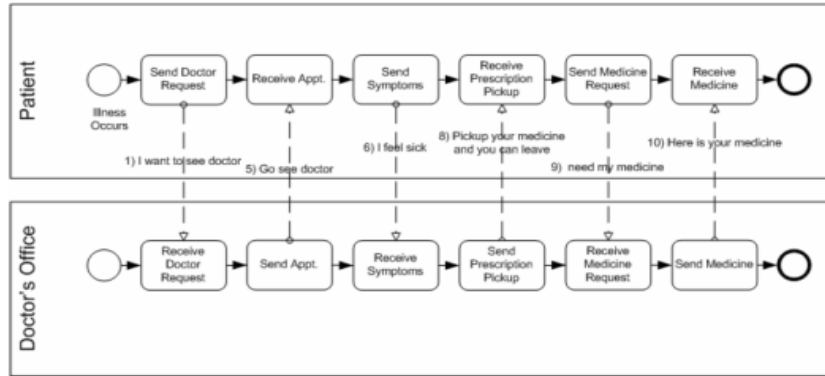a Modeler to provide
additional Information

Tips… (1)

- **Pools** are used when the diagram involves two separate business entities or participants.

- The activities within separate Pools are considered self-contained **Processes**.
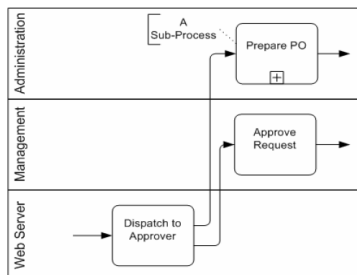
Tips… (2)

- **T**he <u>Sequence Flow may not cross the boundary of a Pool</u>.

- Message Flow is defined as being the mechanism to show the communication between two participants, and, thus, must connect between two Pools (or the objects within the Pools).

Tips.. (3)

- **Lanes** are often used to separate the activities associated with a specific company function or **role**.

- <u>Sequence Flow may cross the boundaries of Lanes within a Pool, but Message Flow may not be used between Flow Objects in Lanes of the same Pool.</u>

References

- **Introduction to BPMN**,
  Stephen A. White IBM Corporation
  http://www.bpmn.org/Documents/Introduction_to_BPMN.pdf

- **Business Process Modeling Notation (BPMN)**
  Version 1.0 (or later)
  http://www.bpmn.org

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