



Lecture 12: Modelling Enterprises

→ Modeling business processes

- ↳ Why business processes?
- ↳ Modelling concurrency and synchronization in business activities
- ↳ UML Activity Diagrams

→ Modelling organisational intent

- ↳ i* modelling language
- ↳ Modelling agents and the strategic dependencies between them
- ↳ Explaining these dependencies in terms of agents' goals



Business Processes

→ Business Process Automation

- ↳ Leave existing business processes as they are
 - Look for opportunities to automate parts of the process
- ↳ Can make an organisation more efficient; has least impact on the business

→ Business Process Improvement

- ↳ Make moderate changes to the way the organisation operates
- ↳ E.g. improve efficiency and/or effectiveness of existing process
 - Techniques: Duration analysis; activity-based costing; benchmarking

→ Business Process Reengineering

- ↳ Fundamental change to the way the organisation operates
- ↳ Techniques:
 - Outcome analysis - focus on the real outcome from the customer's perspective
 - Technology analysis - look for opportunities to exploit new technology
 - Activity elimination - consider each activity in turn as a candidate for elimination



Modelling Business Processes

→ Business processes involve:

- ↳ Multiple actors (people, business units,...)
- ↳ Concurrent activities
- ↳ Explicit synchronization points
 - E.g. some task cannot start until several other concurrent tasks are complete
- ↳ End-to-end flow of activities

→ Choice of modelling language:

- ↳ UML Activity diagrams
 - ...based on flowcharts and petri nets
 - Not really object oriented (poor fit with the rest of UML)
- ↳ Business Process Modelling Notation (BPMN)
 - New (emerging) standard, loosely based on pi calculus



Refresher: Petri Nets

→ Petri net syntax:

- ↳ Places and transitions
- ↳ Tokens (possibly coloured)





