ICT393
Advanced Business Analysis and Design

Topic 4
Introduction to Business Process Management

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Readings and Resources

- Havey, M. (2005) **Chapter 1** in *Essential Business Process Modeling,* O'Reilly Media Inc. Electronic copy available from library

- Online video: *What is BPM (Business Process Management) in 3 minutes.* Also available from: https://www.youtube.com/watch?v=XtvIU0ZCwjE

- Online video: *BPM vs Lean and Six Sigma*. Also available from: https://www.youtube.com/watch?v=t8pS5fxRv8Y
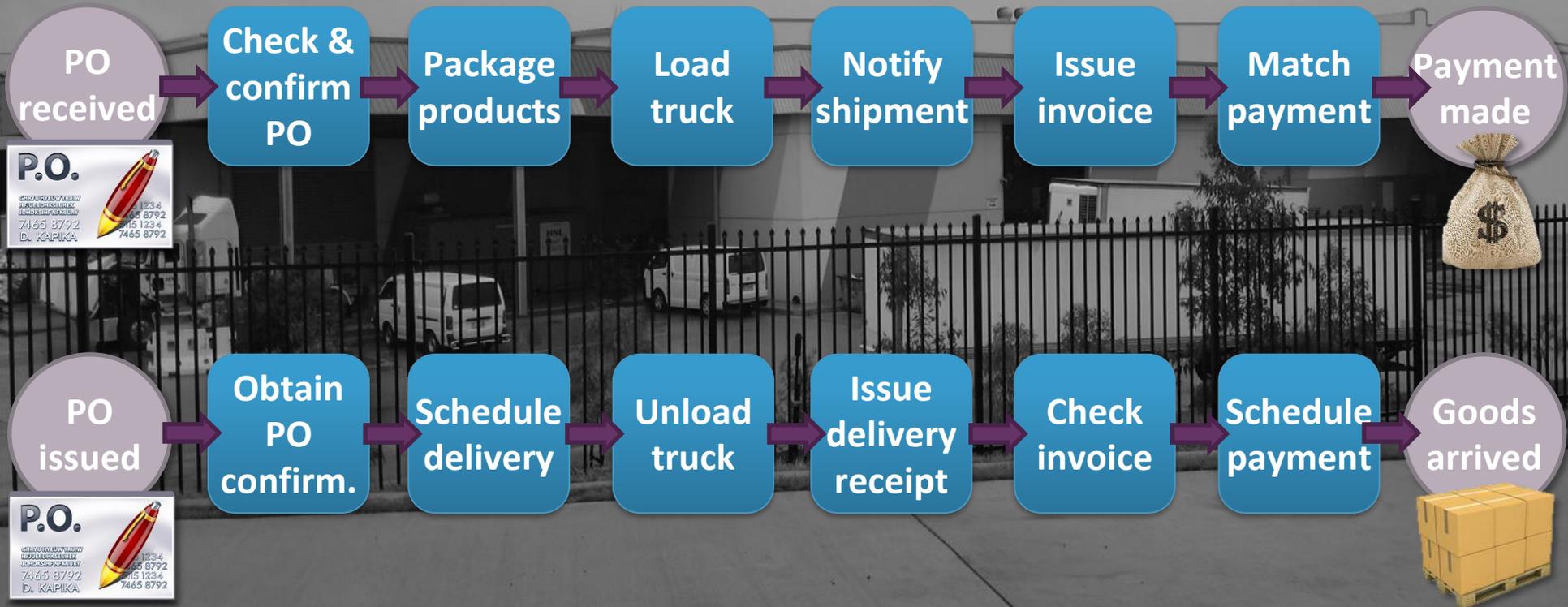
Learning Objectives

After completing this topic you should be able to:

- Define the term business process
- Describe what business process modelling is
- Explain why business process modelling is undertaken
- Be aware of several techniques used for business process modelling
- Describe the business process management lifecycle
- Describe common approaches that have been taken to business process improvement
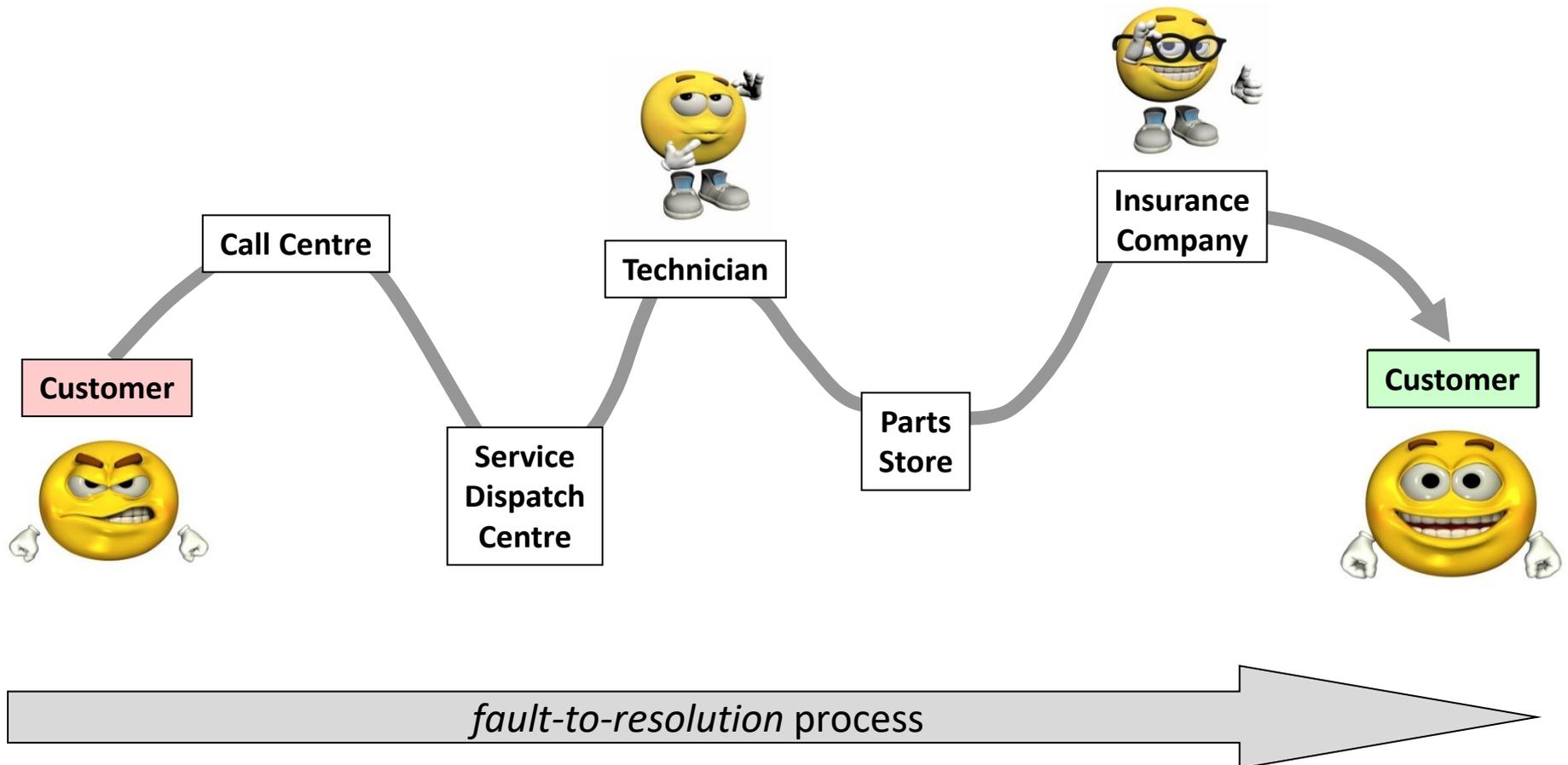
Business Processes

- What is a business process?

- What are some examples of business processes?

Top flow:

PO received → Check & confirm PO → Package products → Load truck → Notify shipment → Issue invoice → Match payment → Payment made

Bottom flow:

PO issued → Obtain PO confirm. → Schedule delivery → Unload truck → Issue delivery receipt → Check invoice → Schedule payment → Goods arrived

"My washing machine doesn't work…"

Customer → Call Centre → Service Dispatch Centre → Technician → Parts Store → Insurance Company → Customer

fault-to-resolution process

Classifications of Business Processes

Business processes can be classified as:

- **Primary** (or core) processes – initiated from outside - processes associated with delivery of product to customer

  Can you provide an example of a primary process?
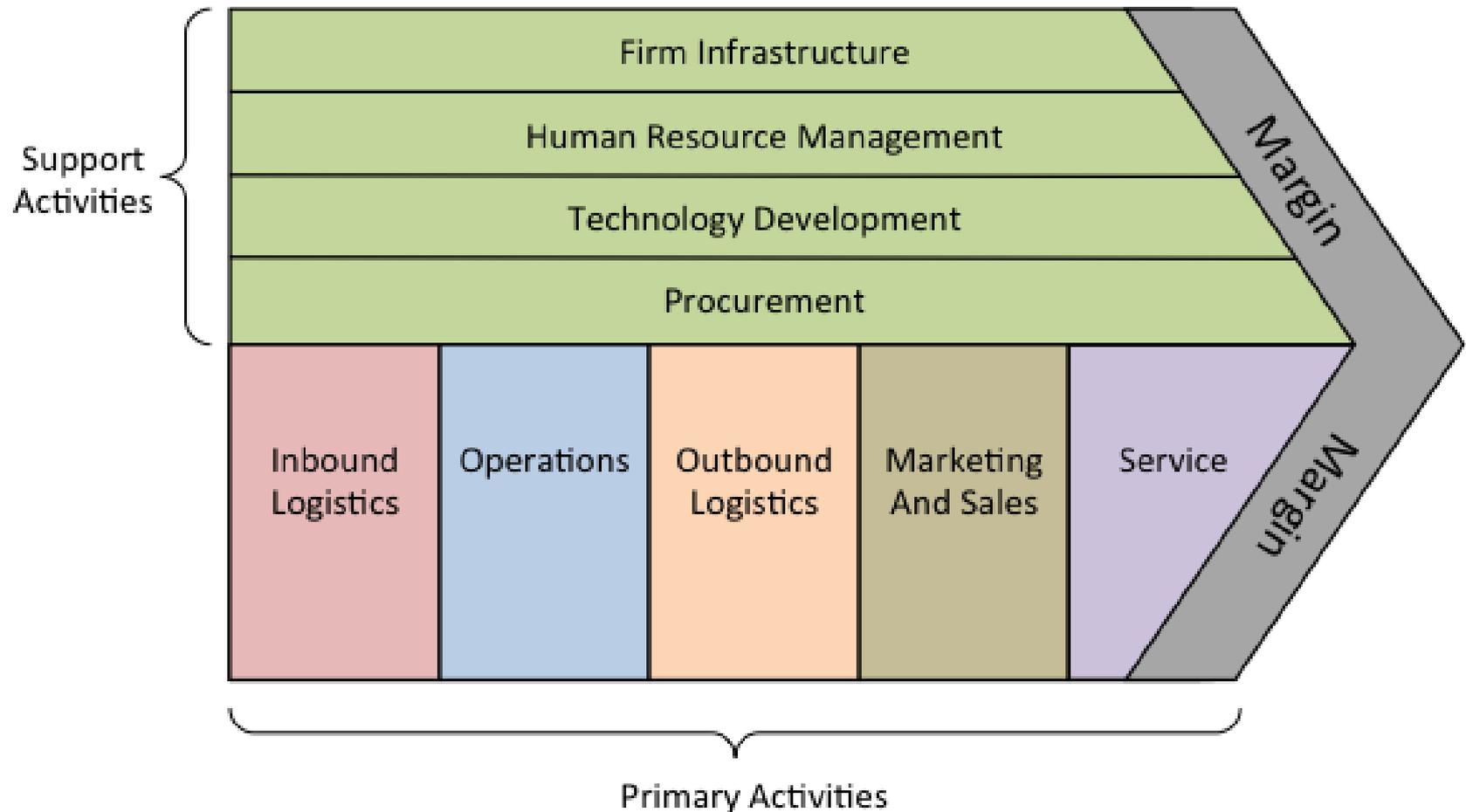

- **Support** processes – create conditions for primary processes to be carried out

  Can you provide an example of a support process?

Porter's Value Chain Model

Ref: Porter, M, Competitive Advantage: *Creating and Sustaining Superior Performance*. Free Press, 1985.

One Definition ….

A business process is…*a chain of events, activities and decisions*
…involving a number of actors and objects,
….triggered by a need
and leading to an outcome that is of value to a customer.

What is Business Process Modelling?

- **Business process modelling** is the activity of representing the processes of an organisation

- Business process models describe how a business works – that is, how it accomplishes activities or tasks

- A single model shows how a business accomplishes a single process

Why Model Processes?

Business process models are primarily used to:
- Support software development
- Help restructure business processes

Why else might organisations model their business processes?

Business Process Modelling Tools

Types of models used to represent organisational processes include:

- Flowcharts

- UML activity diagrams

- Business process modelling notation (BPMN) – a graphical representation for specifying business processes in a workflow
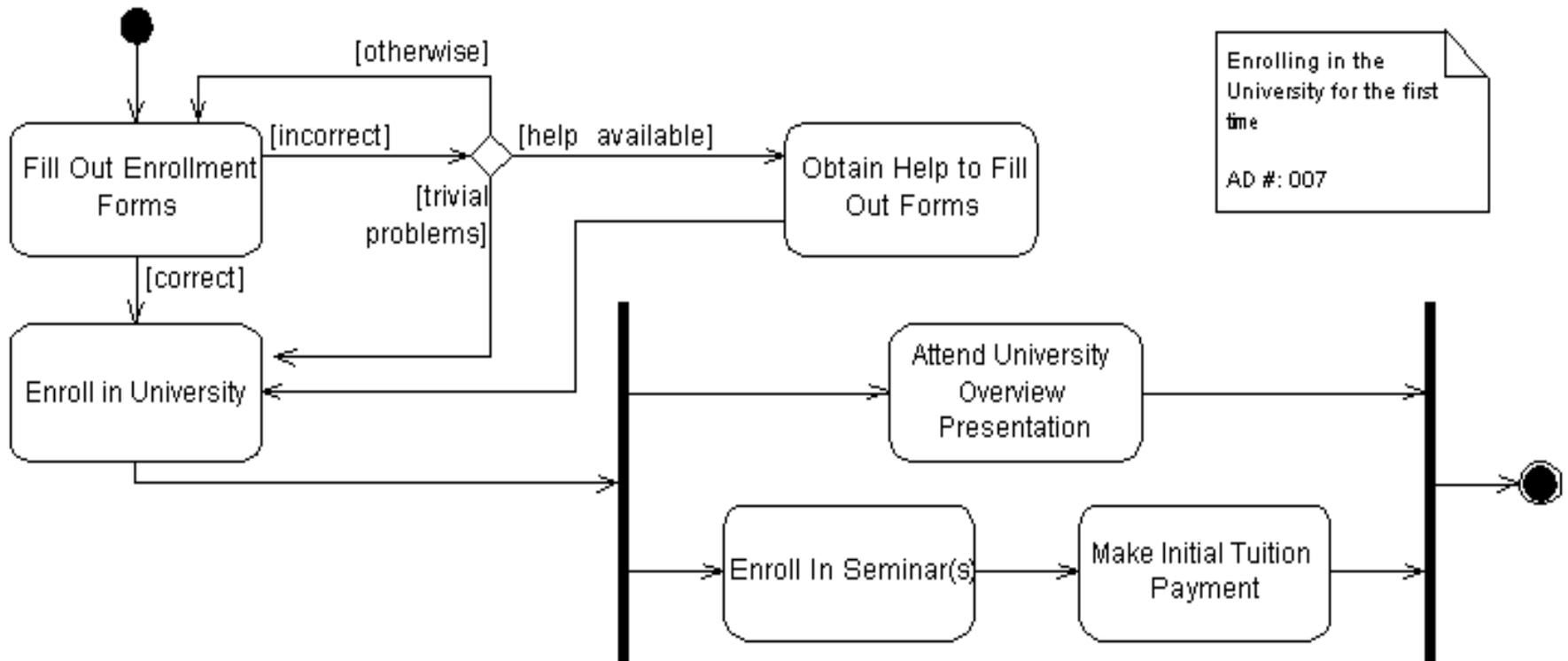
Flowchart example

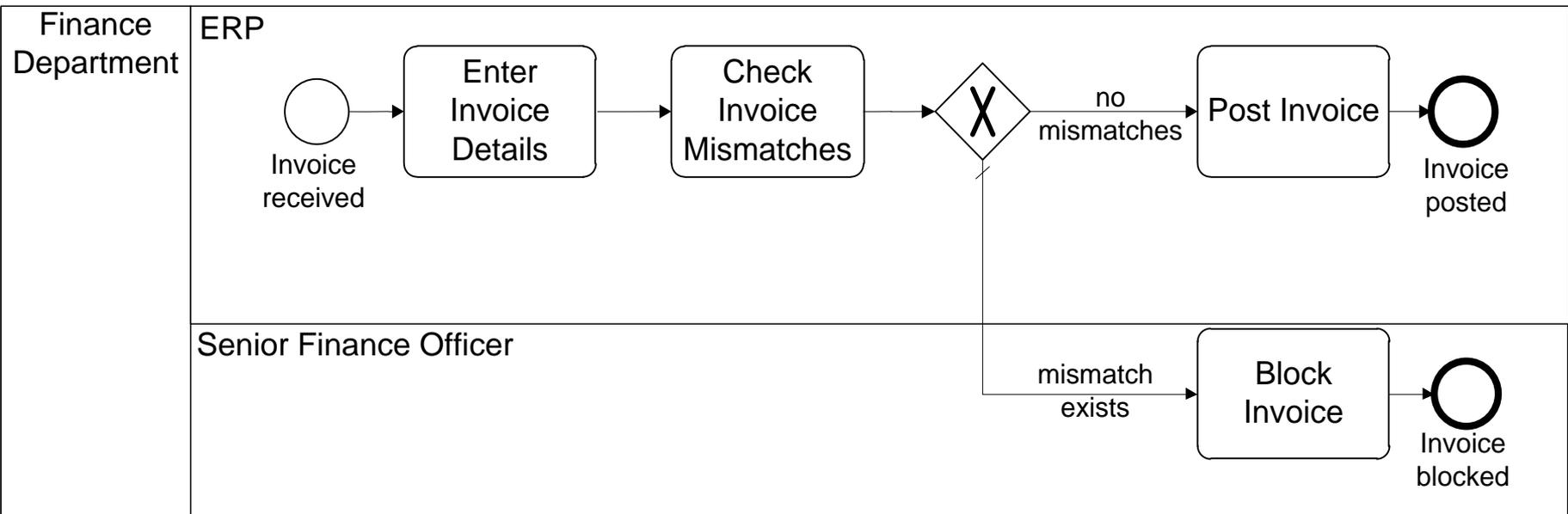Difficult to represent parallel actions and conditions for merging of branches
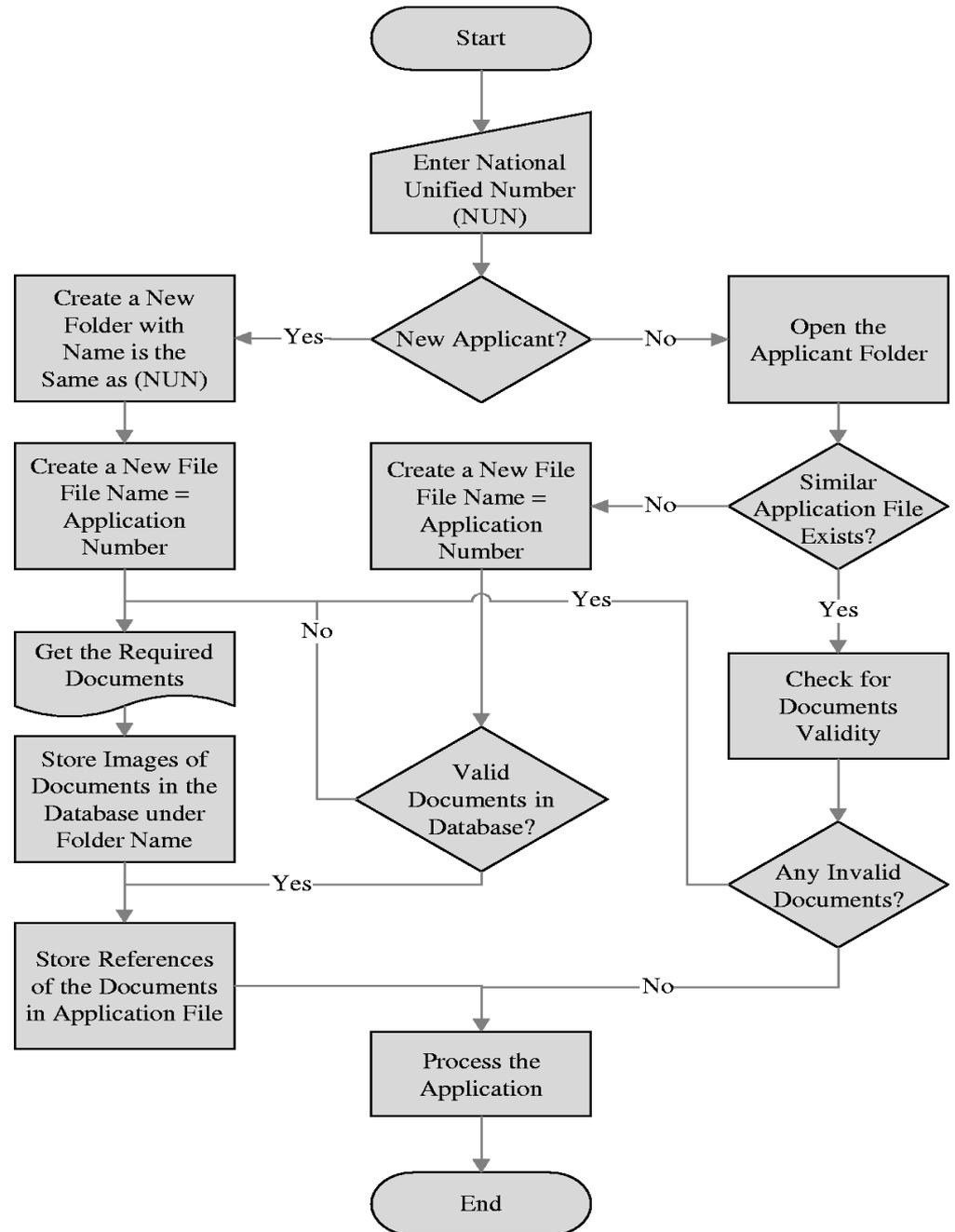
UML activity diagram example

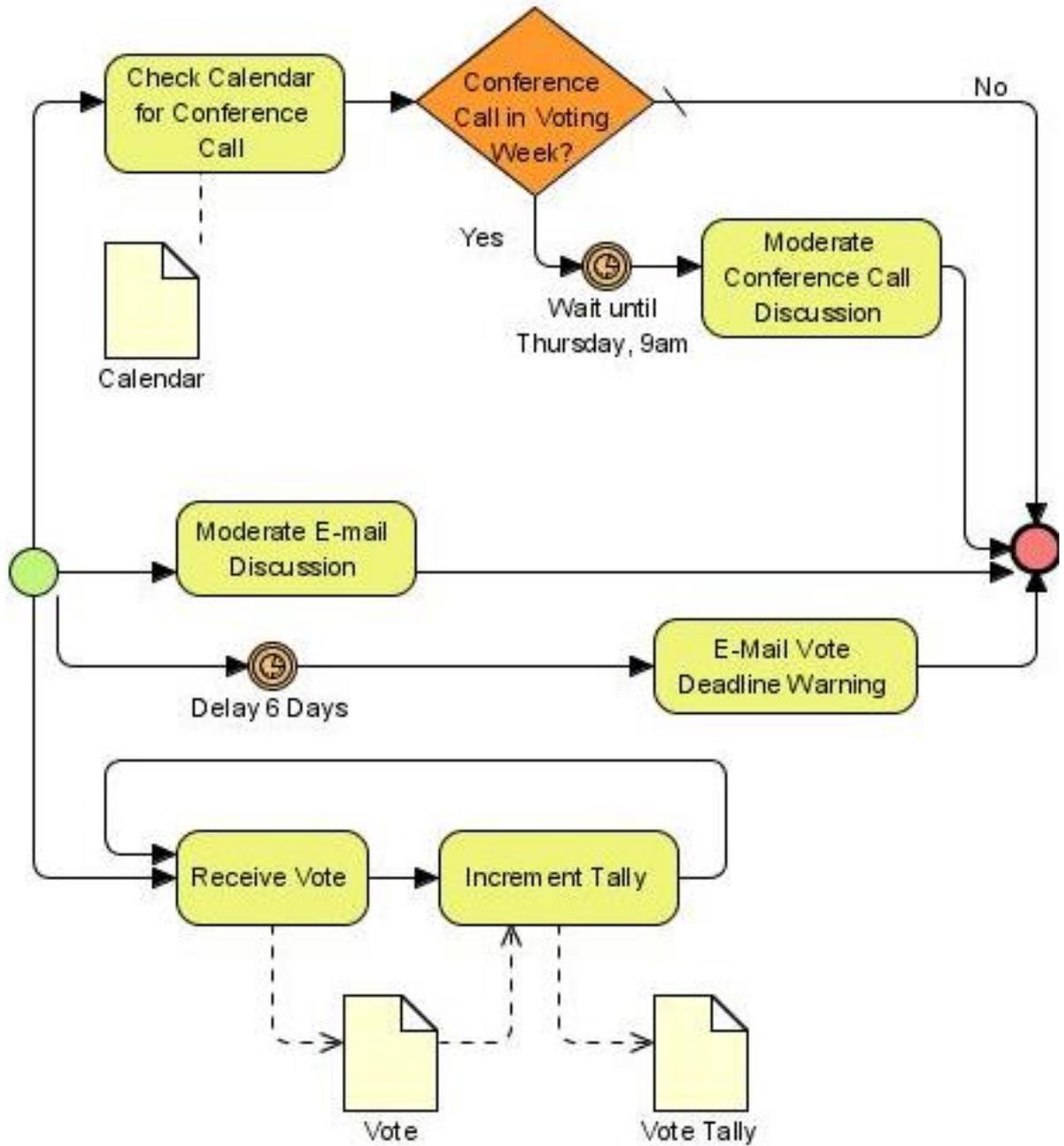Q: Can you identify activities? Decisions? Merging?

BPMN example

Q: Can you identify actors? Activities? Decisions? Events?

BPMN example

What additional constructs are illustrated in this example?

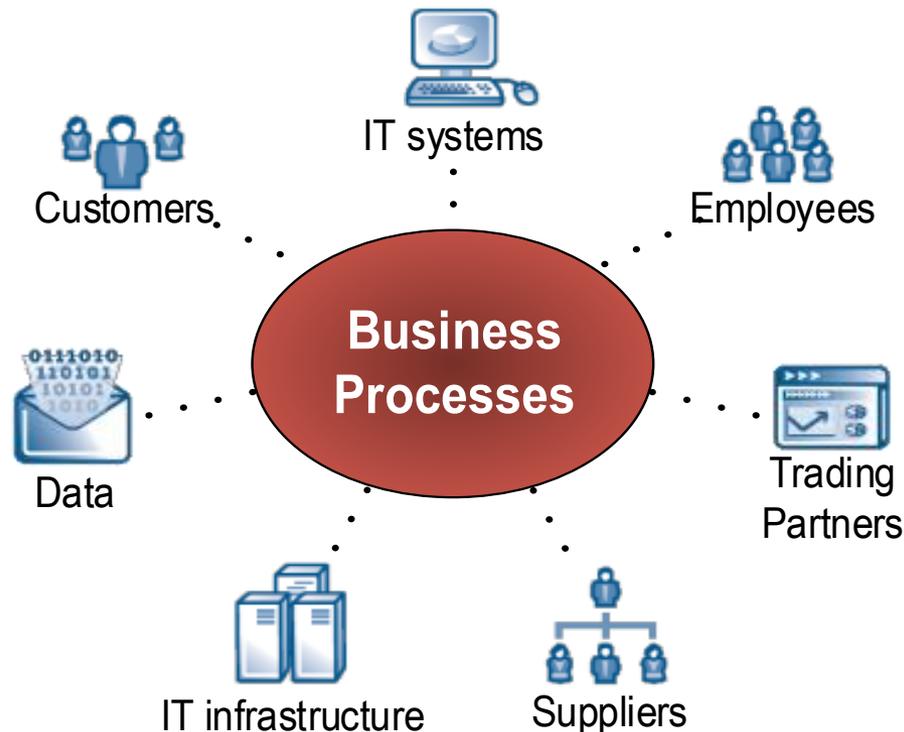# Process Modelling to Restructure Business Processes

Why do organisations want to restructure their processes? Reasons might include:

- Reduce costs
- Improve productivity
- Improve customer service
- Fit commercial software
- Streamline the supply chain (better collaboration with business partners)

Business Process Management (BPM)

Business process management involves principles, methods and tools to design, analyze, execute and monitor business processes, with the aim of improving their performance
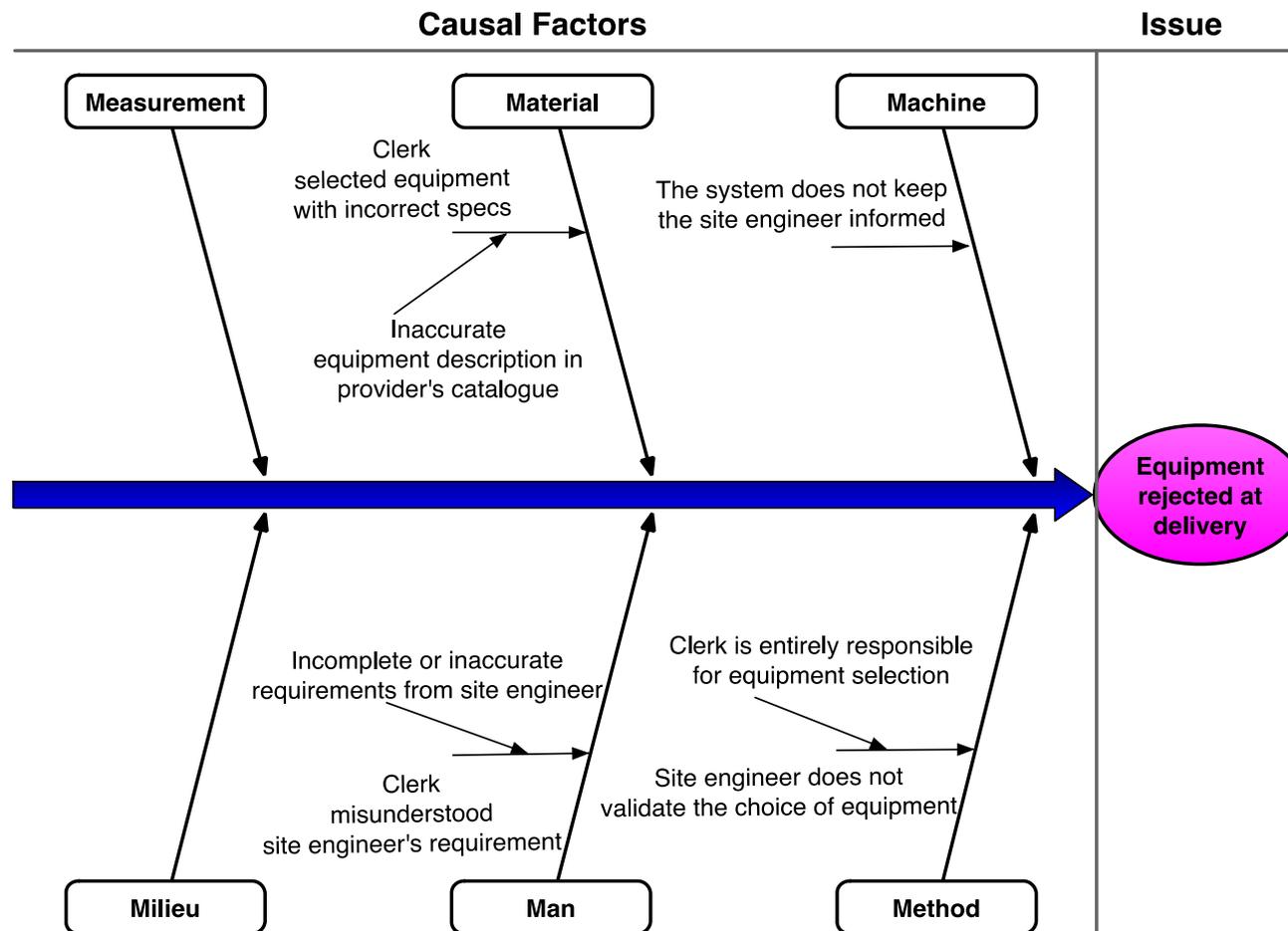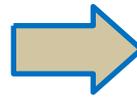
The BPM Lifecycle

Process identification

Process architecture

Process discovery

As-is process model

Conformance and performance insights

Process monitoring and controlling

Process analysis

Insights on weaknesses and their impact

Executable process model

Process implementation

To-be process model

Process redesign

Qualitative Process Analysis

Cause-effect analysis example

Causal Factors   **Issue**

Measurement   Material   Machine

Clerk selected equipment with incorrect specs

The system does not keep the site engineer informed

Inaccurate equipment description in provider's catalogue

Equipment rejected at delivery

Incomplete or inaccurate requirements from site engineer

Clerk is entirely responsible for equipment selection

Clerk misunderstood site engineer's requirement

Site engineer does not validate the choice of equipment

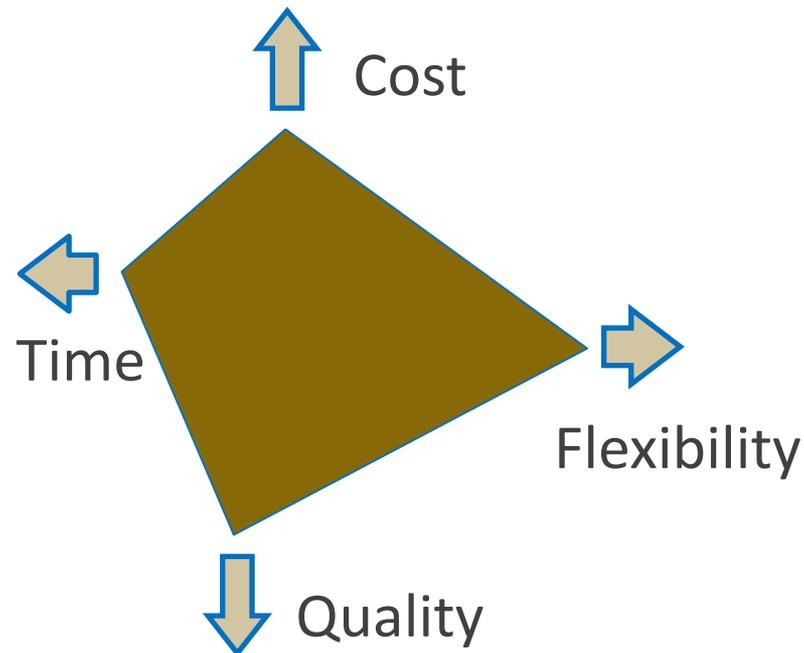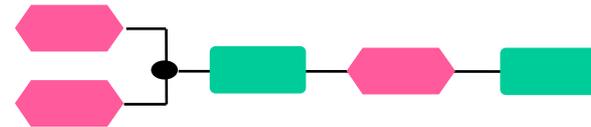Milieu   Man   Method

Process Redesign

AS-IS process model **TO-BE process model**

Cost

Time

Flexibility

Quality

Process Implementation

Both people and technology are important

Process automation
- Executable process design
- Configuration & coding
- Testing
- ...

Process change management
- Job redesign
- Training
- Performance management plan
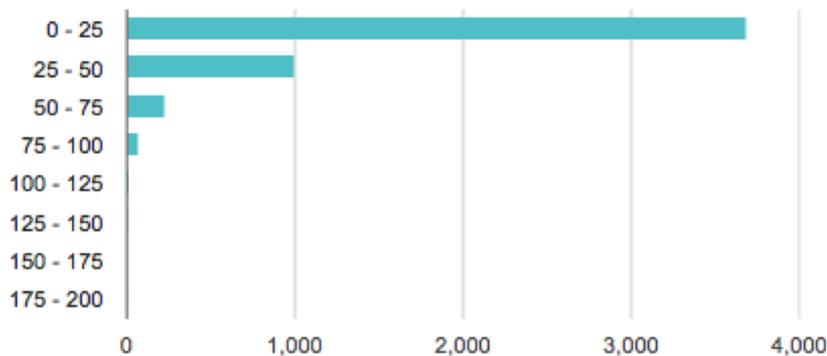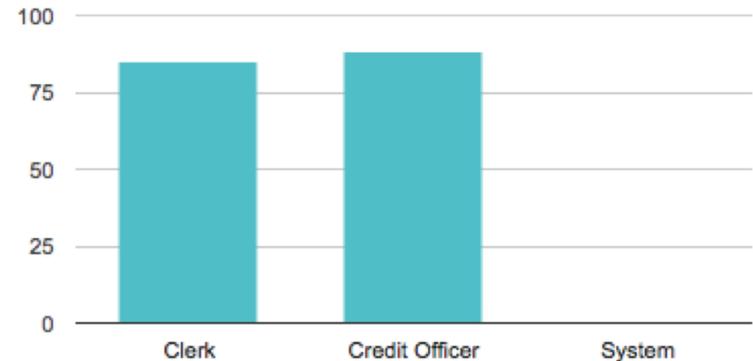- ....

Quantitative Process Analysis

Process durations
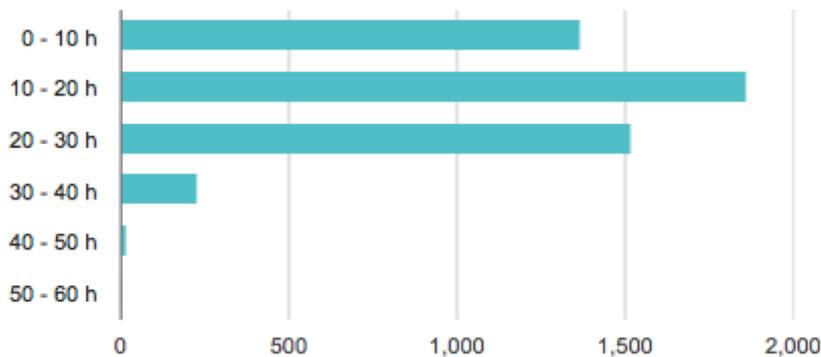
Process waiting times
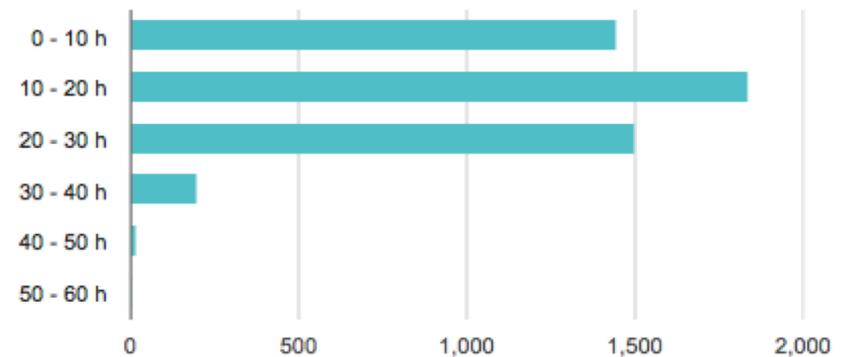
Process costs (EUR)

Resource utilization %

Approaches to Business Process Improvement
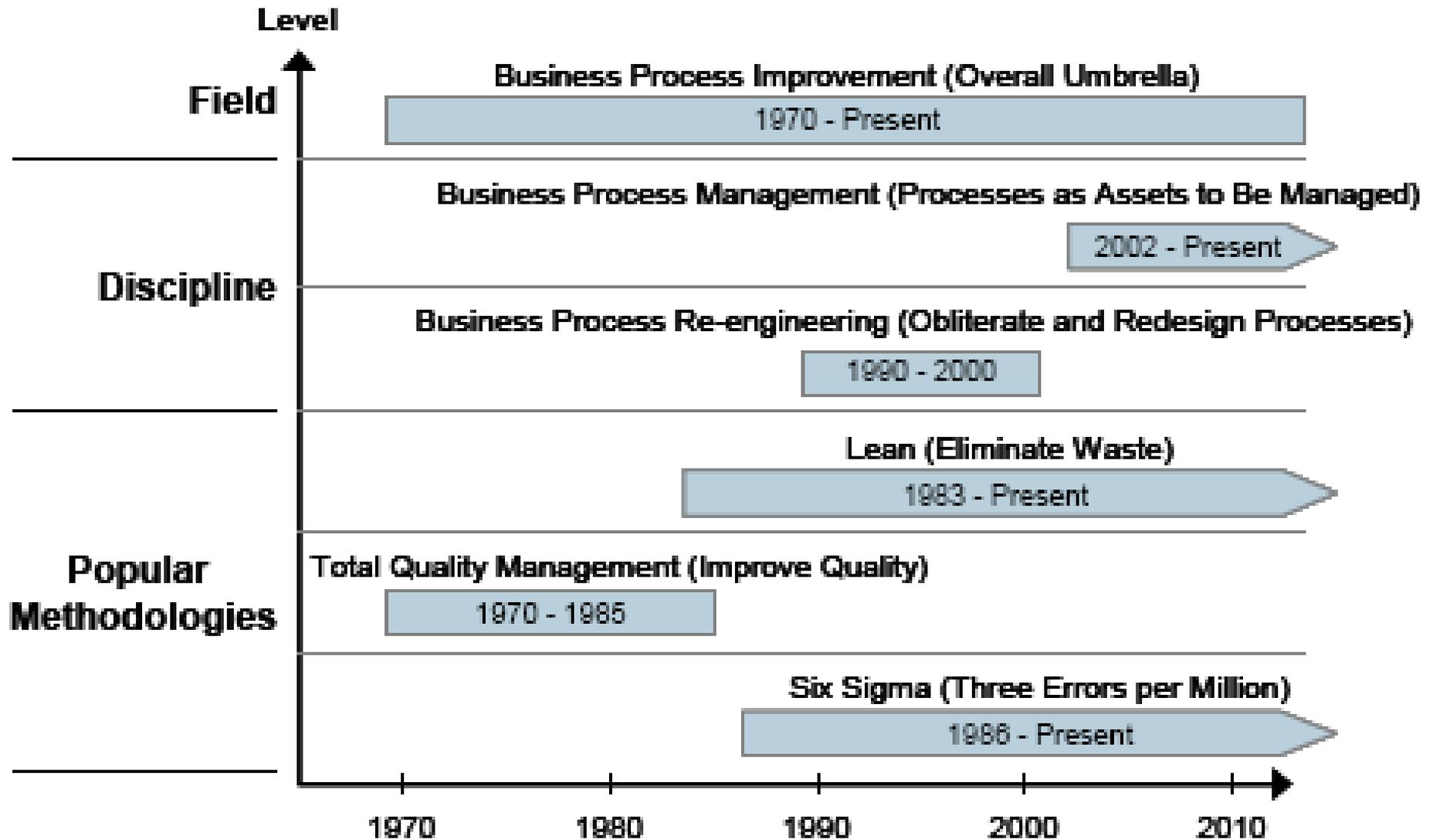
Total Quality management (TQM)

- TQM was an early methodology that involved business process improvement

- It originated in Japanese industry in the 1950's and was popular in the West in the 70s & 80s

- TQM is a set of management practices throughout the organisation, geared to ensure the organisation consistently meets or exceeds customer requirements. TQM places strong focus on process measurement and controls as means of continuous improvement

Six Sigma

- Six Sigma is an approach that seeks to improve the quality of process outputs by identifying and removing the causes of defects and variability in manufacturing and business processes

- It uses a set of quality management methods, including statistical methods, and requires people within the organization who are experts in these methods

- Each Six Sigma project carried out within an organisation follows a defined sequence of steps and has quantified financial targets (cost reduction or profit increase)

Lean

- Lean is an approach that considers the expenditure of resources for any goal other than the creation of value for the customer to be wasteful, and hence a target for elimination

- Working from the perspective of the customer, "value" is defined as any action or process that a customer would be willing to pay for. Lean is centred around creating *more value with less work*

- Focus is on eliminating waste along entire value streams, instead of at isolated points, and creating processes that need less human effort, less space, less capital, and less time to make products and services at less cost

Business Process Reengineering vs Business Process Management

- There has been a shift from **business process reengineering** (BPR) to **business process management**

- With **BPR** organisations radically changed business processes in an attempt to achieve dramatic improvements. There were many failures (many studies suggest >50%)

- **Business process management** considers processes as strategic assets of an organization that must be understood, managed, and improved to deliver value added products and services to clients. It attempts to improve processes continuously

Business Process Management (ctd)

- Business Process Management is intended to produce direct, near-term and visible business performance improvements

- BPM focuses on existing business processes as assets that can be analysed and designed to be better

- BPM is a joint business and IT effort

- A BPM best practice is to find the areas of high value and leverage those to gain the biggest possible results

Learning Objectives Revisited

- What is a business process?
- What are the components of a business process?
- What is business process modelling?
- Why do organisations undertake business process modelling?
- What are several techniques that can be used to model a business process?
- What is business process management?
- What is the business process management lifecycle?
- What are some approaches that have been taken to business process improvement?

Other Resources

- Dumas, M., La Rosa, M., Mendling, J. & Reijers, H. A. (2013) *Fundamentals of Business Process Management.* Chapter 1*.* Springer

- Harmon, P. (2007) *Business Process Change: A Guide for Business Managers and BPM and Six Sigma Professionals* (2nd edition). Chapter 8. Morgan Kaufmann Publishers.

- BPM Resource Centre - http://www.what-is-bpm.com/videos/bpm-videos-and-tutorials.html