Introduction to Business Process Management

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1632

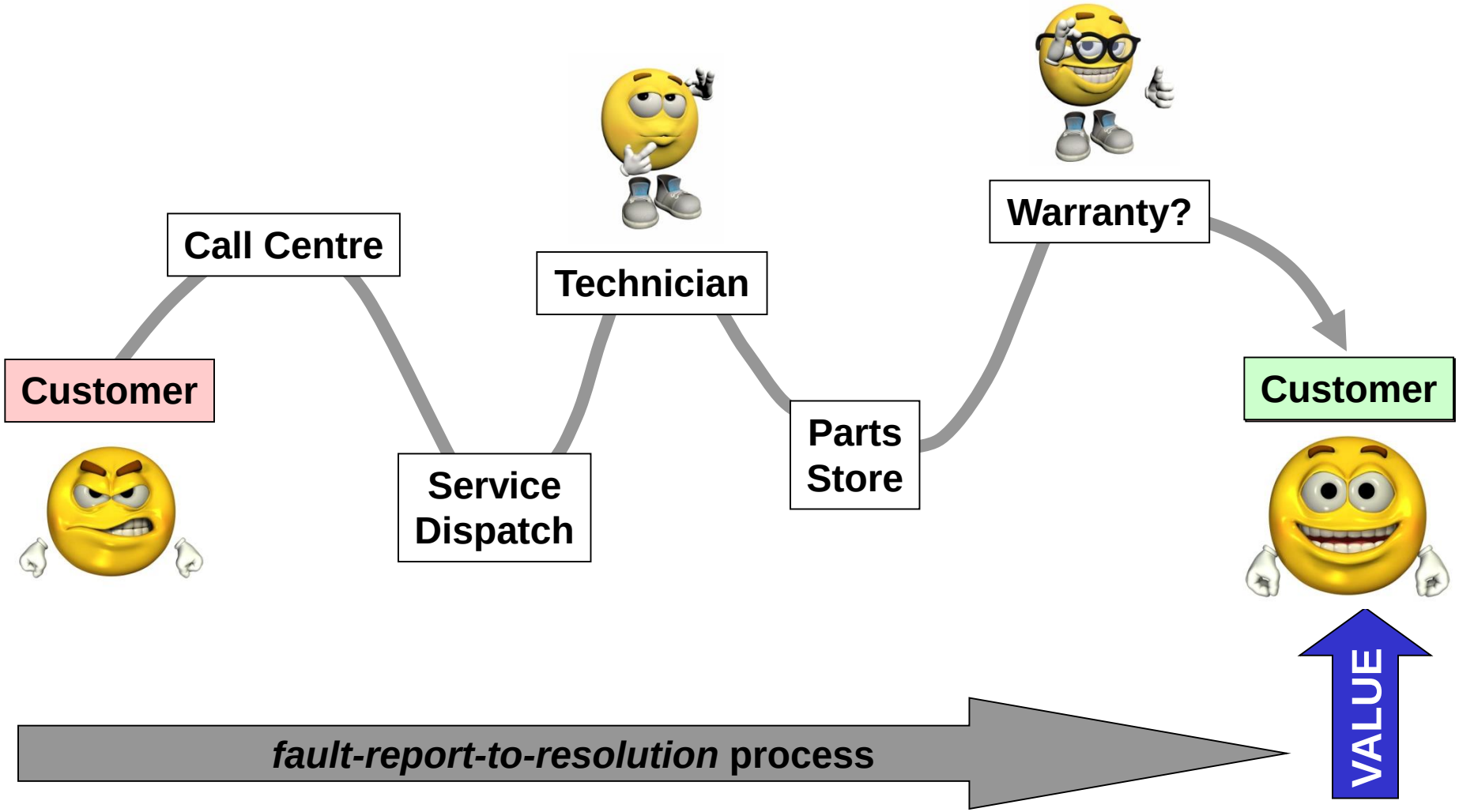
What is a (Business) Process?

Collection of related events, activities and decisions, that involve a number of actors and resources, and that collectively lead to an outcome that is of value to an organization or its customers.

Examples:

- Order-to-Cash
- Procure-to-Pay
- Application-to-Approval
- Claim-to-Settlement
- Fault-to-Resolution (Issue-to-Resolution)

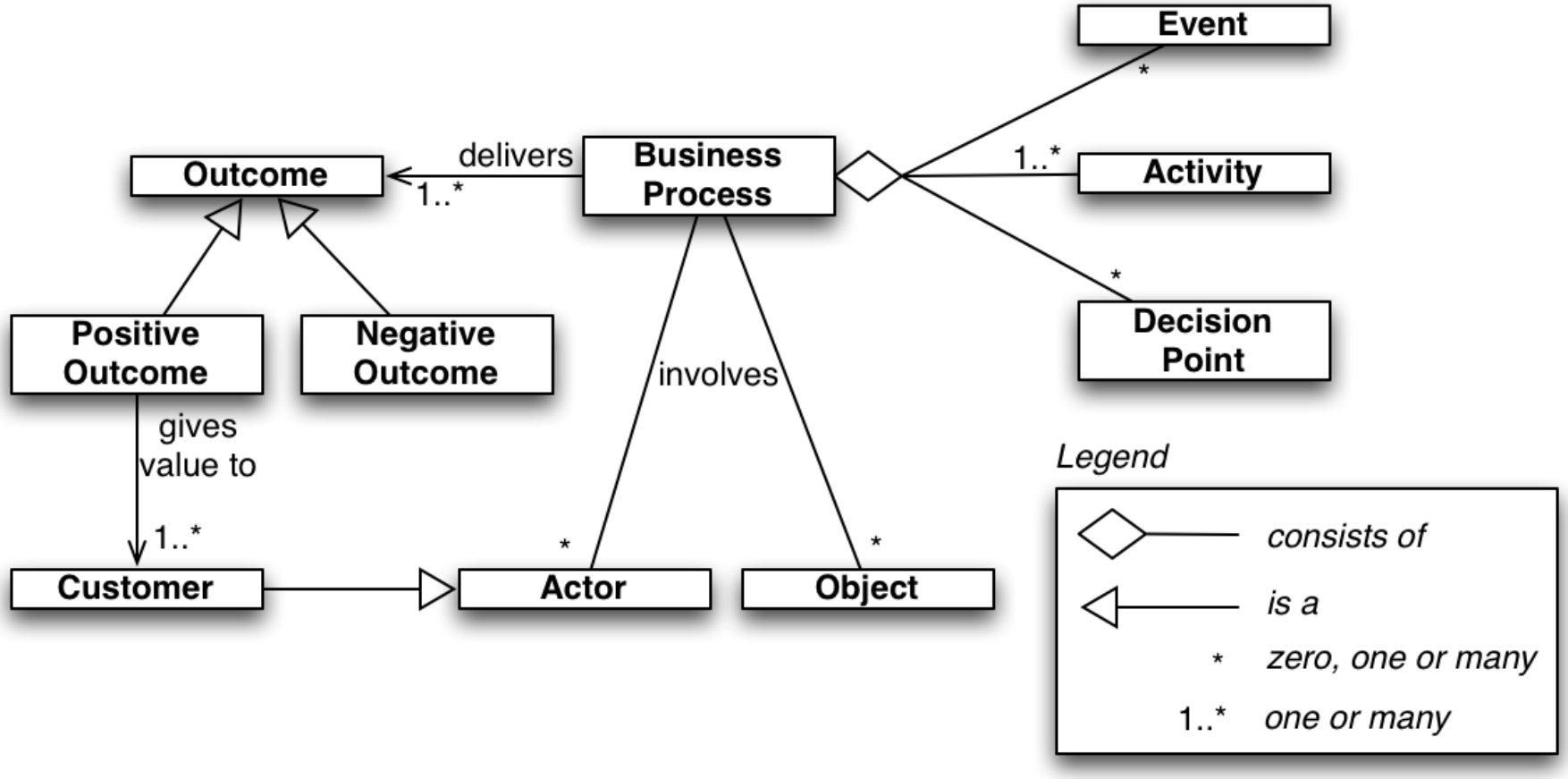
“My washing machine won’t work!”



Processes and Outcomes

- Every process leads to one or several outcomes, positive or negative
  - Positive outcomes deliver value
  - Negative outcomes reduce value
- Fault-to-resolution process
  - Fault repaired without technician intervention
  - Fault repaired with minor technician intervention
  - Fault repaired and fully covered by warranty
  - Fault repaired and partly covered by warranty
  - Fault repaired but not covered by warranty
  - Fault not repaired (customer withdrew request)

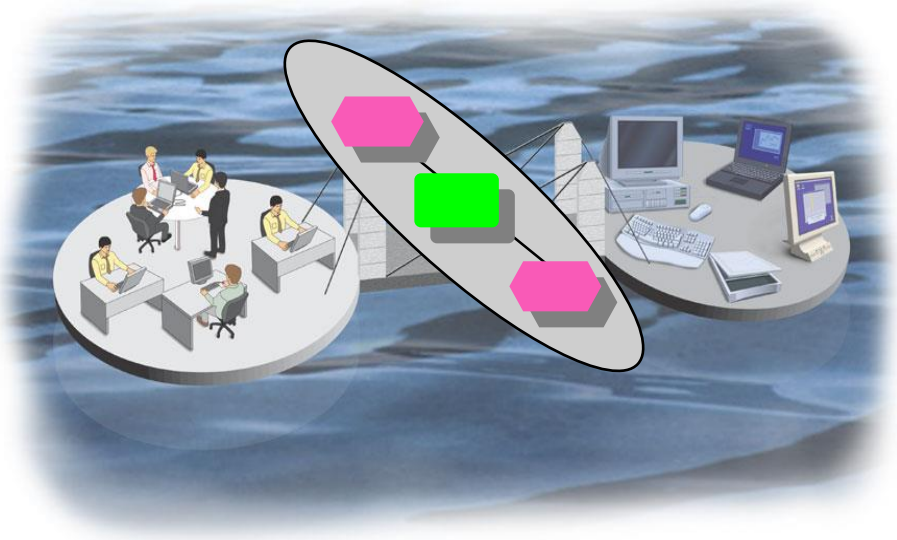
What is a Business Process: Recap



BPM: What is it?

Body of principles, methods and tools to design, analyze, execute and monitor business processes

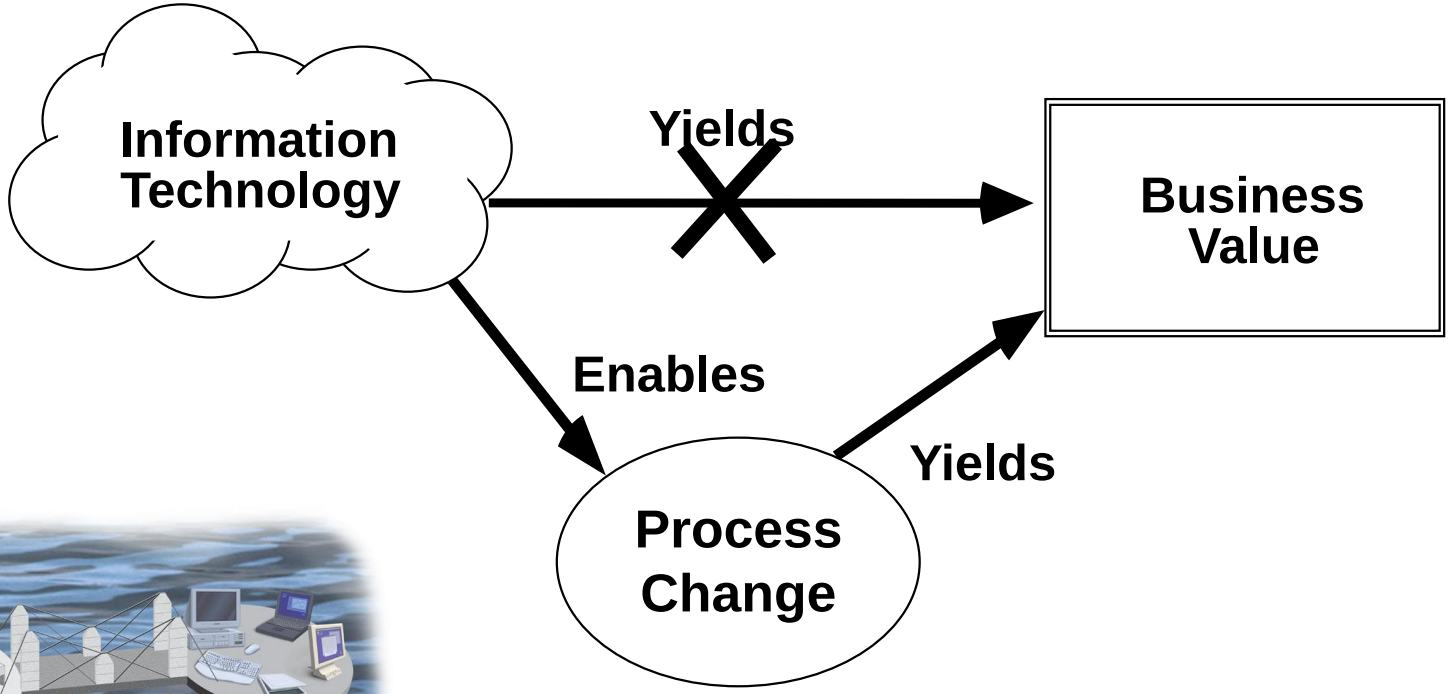
In this course, we will focus on BPM based on process models.

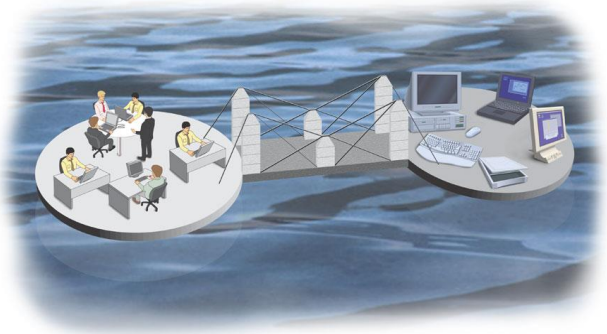


Why BPM?

"*The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency.*
The second is that automation applied to an inefficient operation will magnify the inefficiency."

Why BPM?





Index Group (1982)

How to engage in BPM?

Continuous Process Improvement (CPI)

- Does not put into question the current process structure
- Seeks to identify issues and resolve them incrementally, one step at a time and one fix at a time

Business Process Re-Engineering (BPR)

- Puts into question the fundamental assumptions and principles of the existing process structure
- Aims to achieve breakthrough, for example by removing costly tasks that do not directly add value

The Ford Case Study (Hammer 1990)

Ford needed to review its procurement process to:

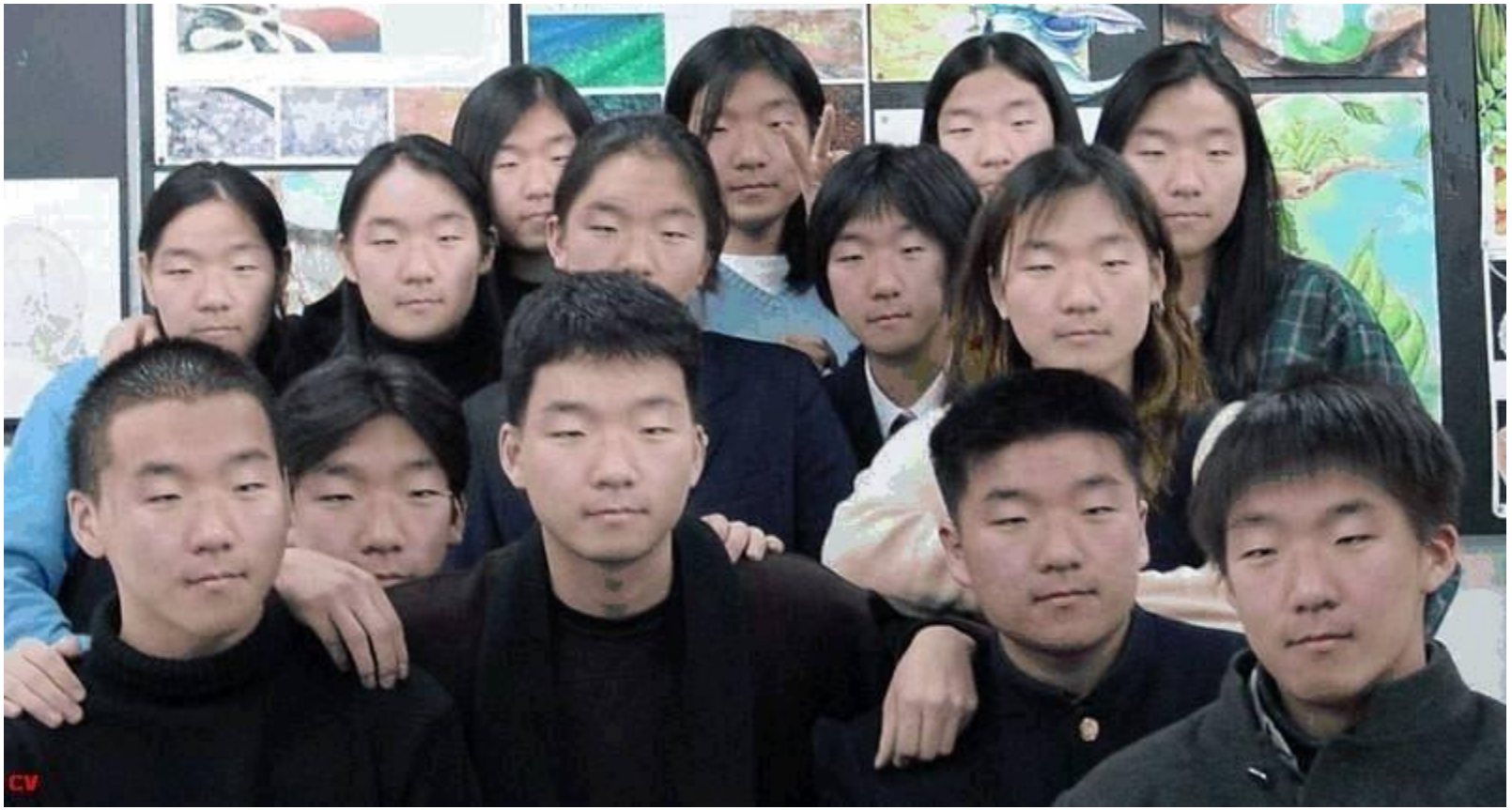
- Do it cheaper (cut costs)
- Do it faster (reduce turnaround times)
- Do it better (reduce error rates)

  Accounts payable in North America alone employed > 500 people and turnaround times for processing POs and invoices was in the order of weeks

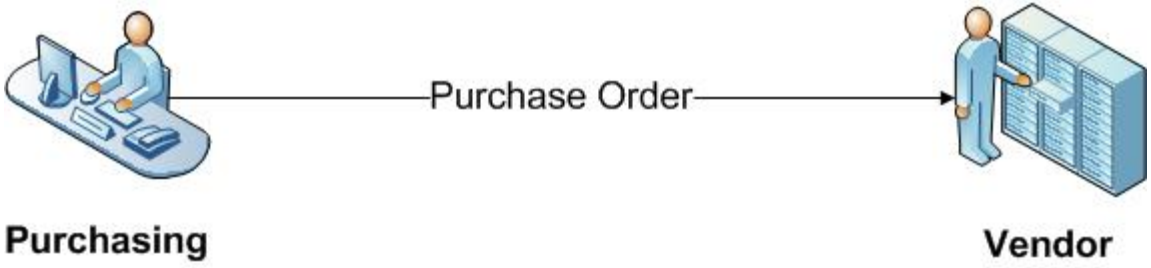
The Ford Case Study

- Automation would bring some improvement (20% improvement)
- But Ford decided not to do it… Why?
  a) Because at the time, the technology needed to automate the process was not yet available.
  b) Because nobody at Ford knew how to develop the technology needed to automate the process.
  c) Because there were not enough computers and computer-literate employees at Ford.
  d) None of the above

The correct answer is …
Mazda's Accounts Payable Department



How the process worked? (“as is”)



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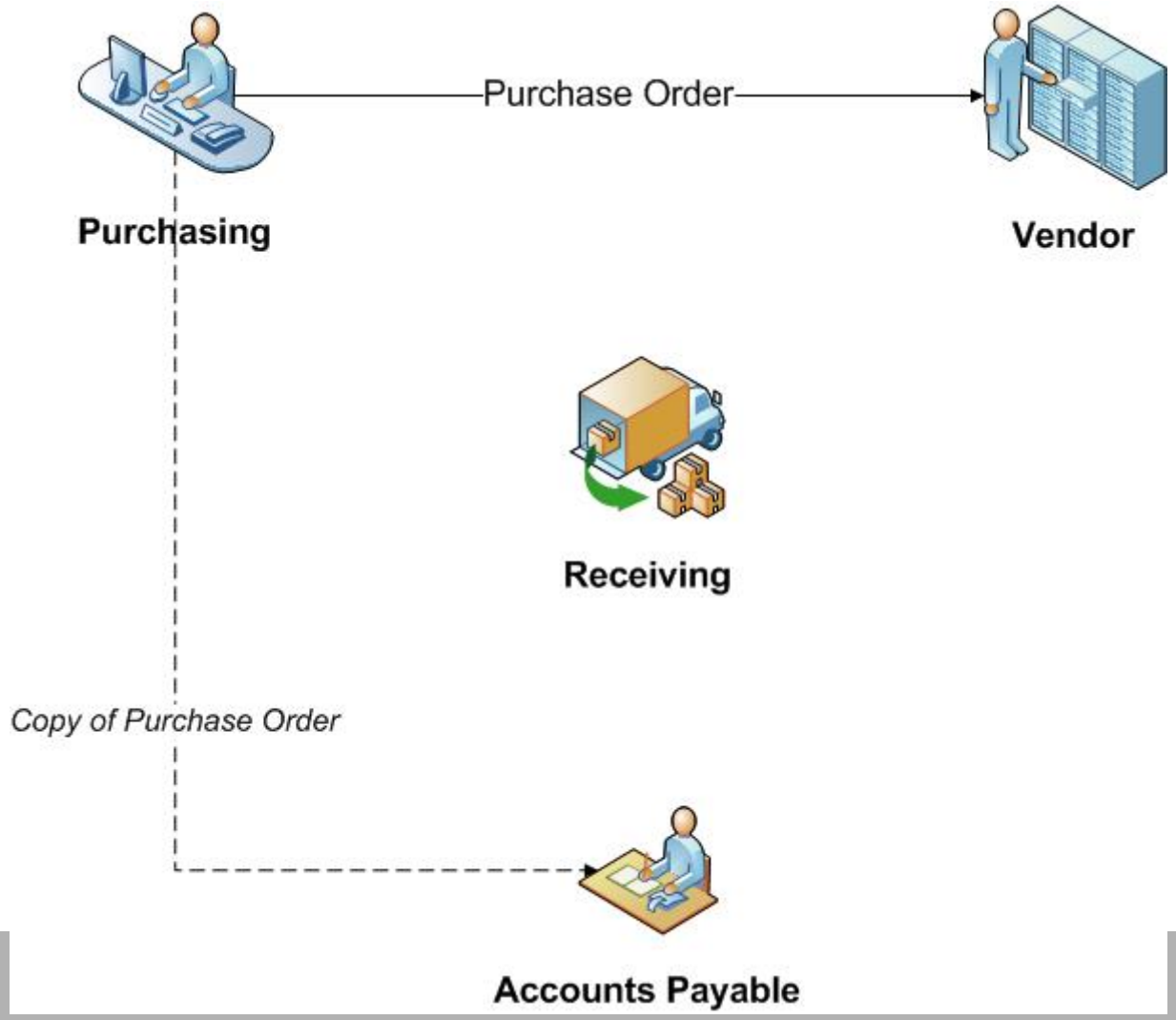

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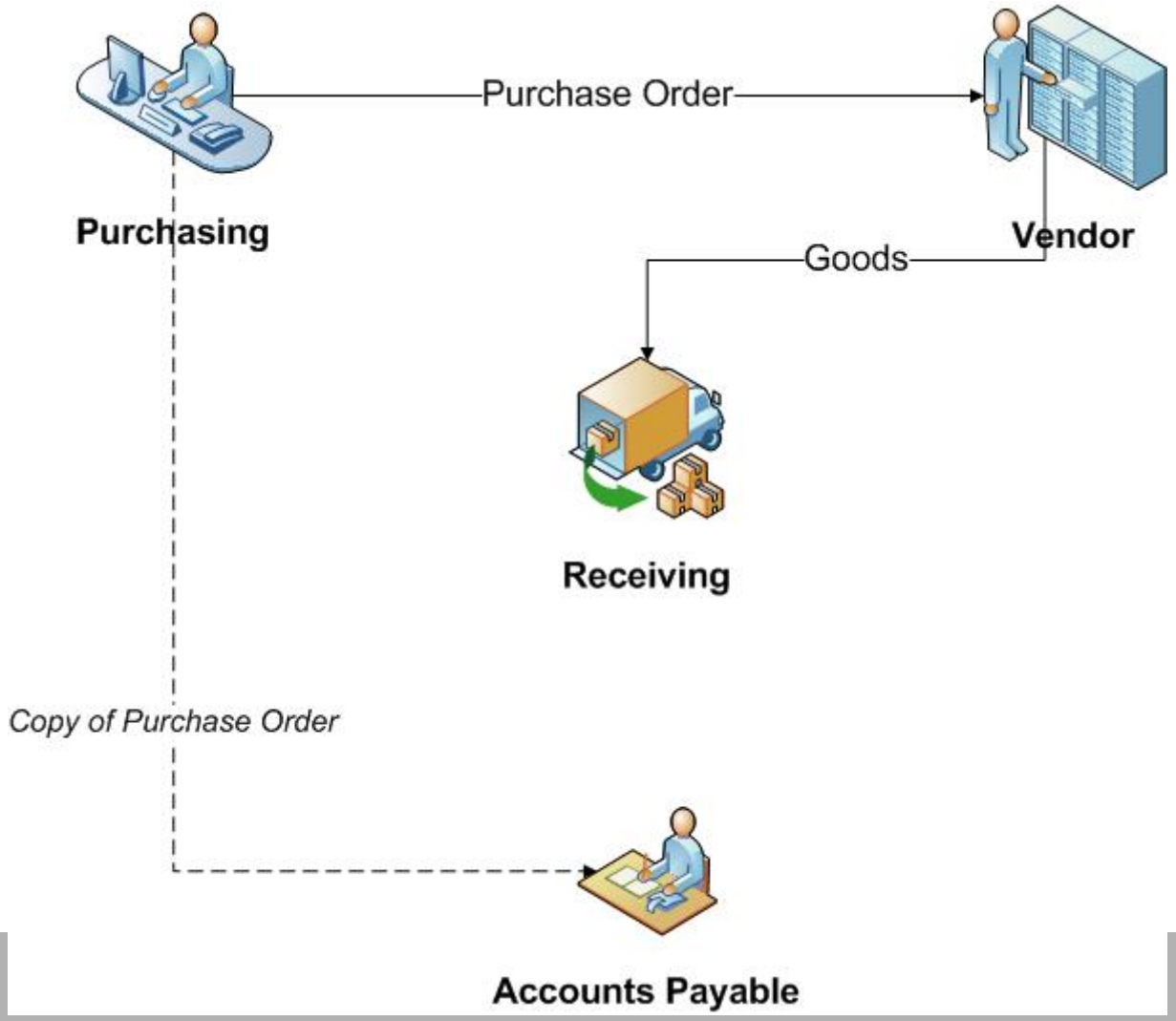

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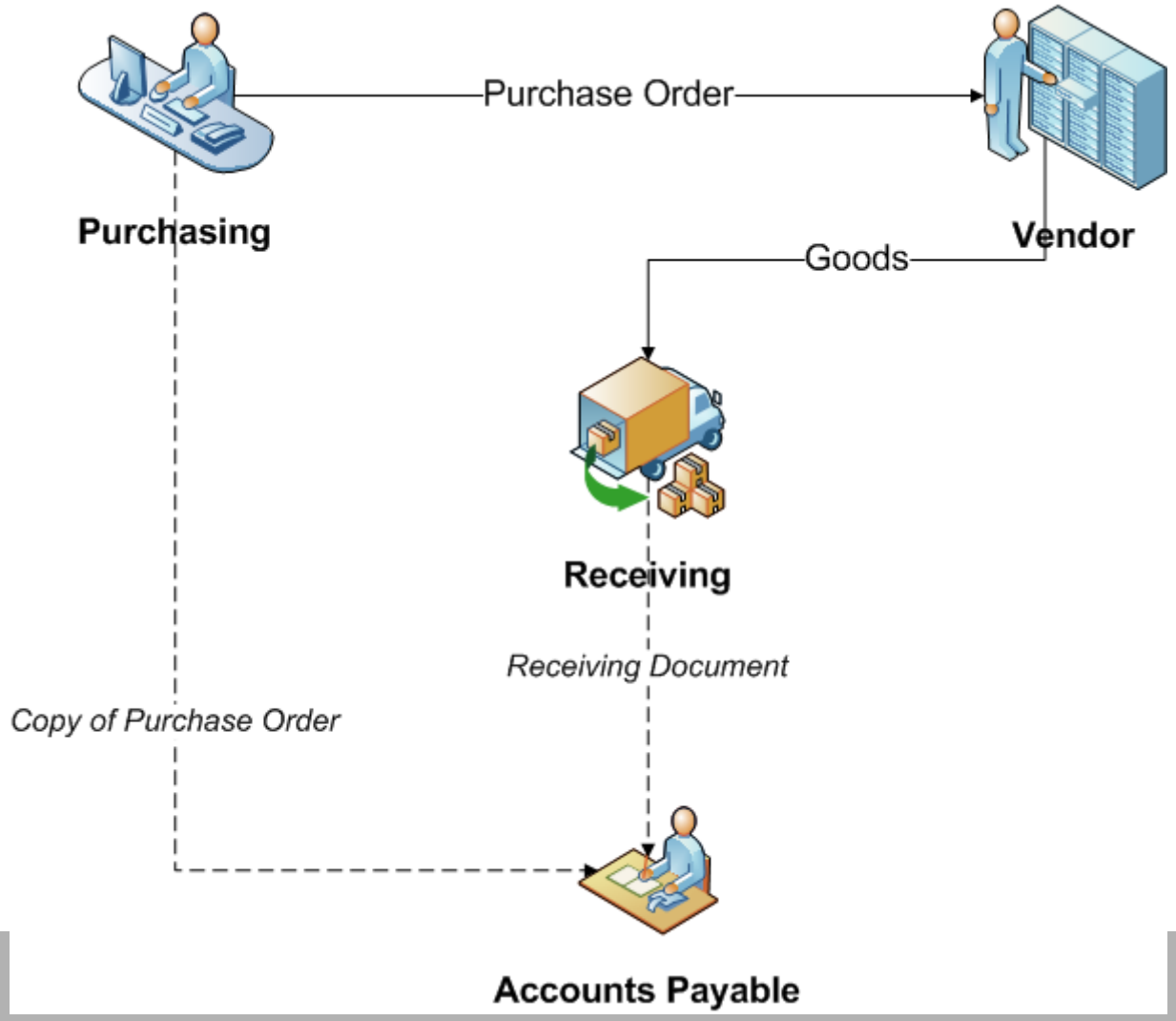

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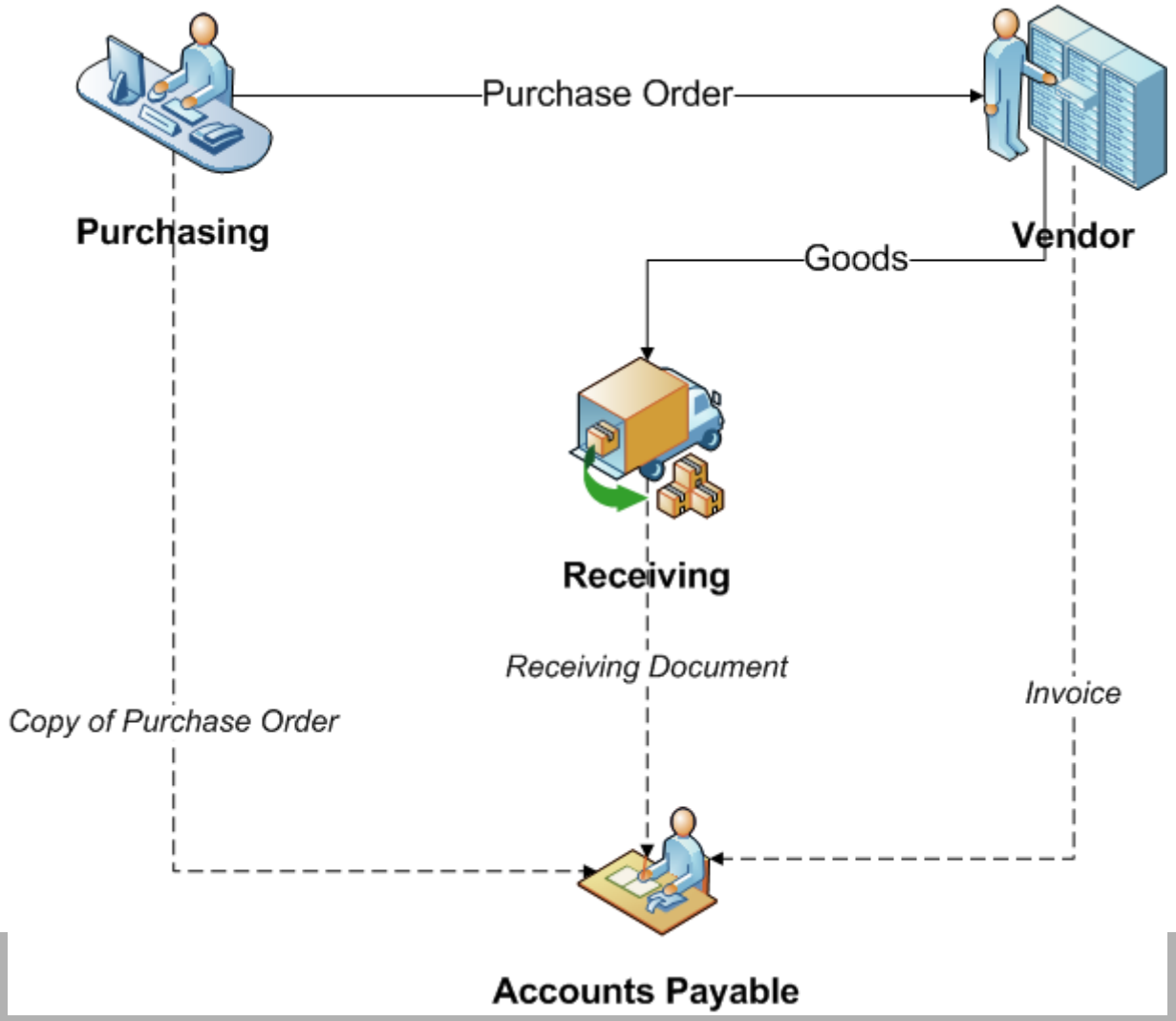

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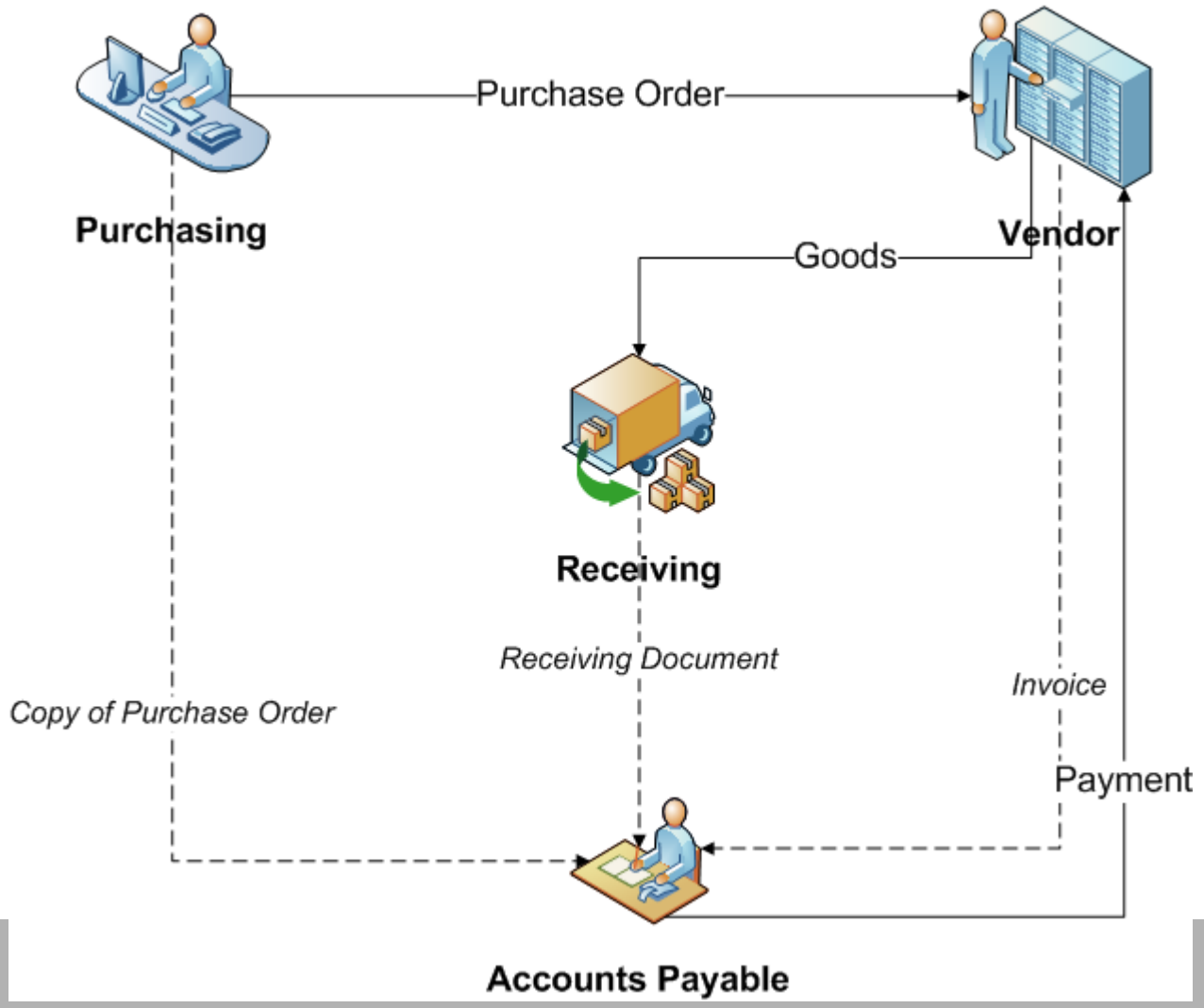


Reengineering Process (“to be”)

Purchasing

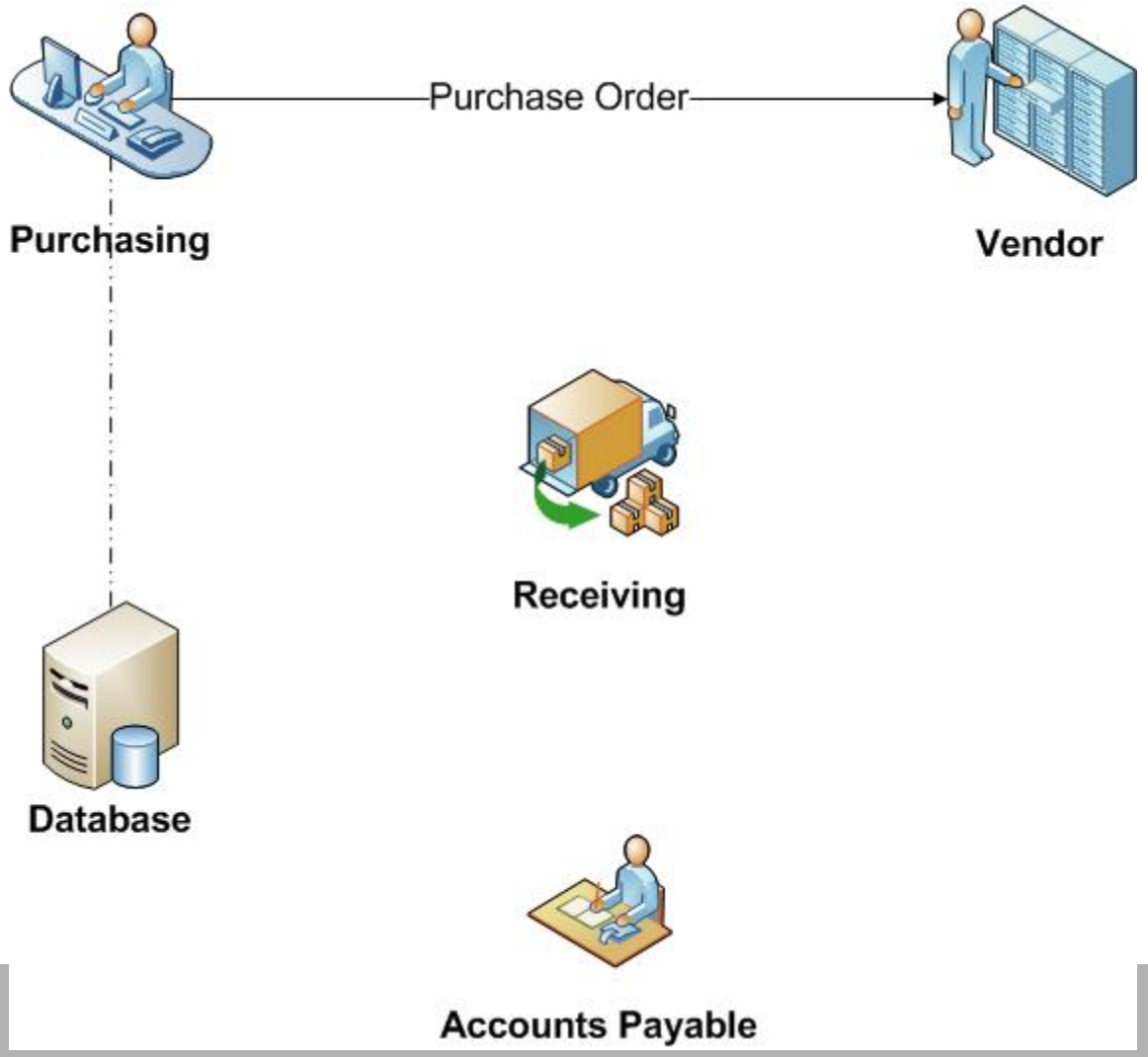
Vendor

Receiving

Database

Accounts Payable

Reengineering Process (“to be”)



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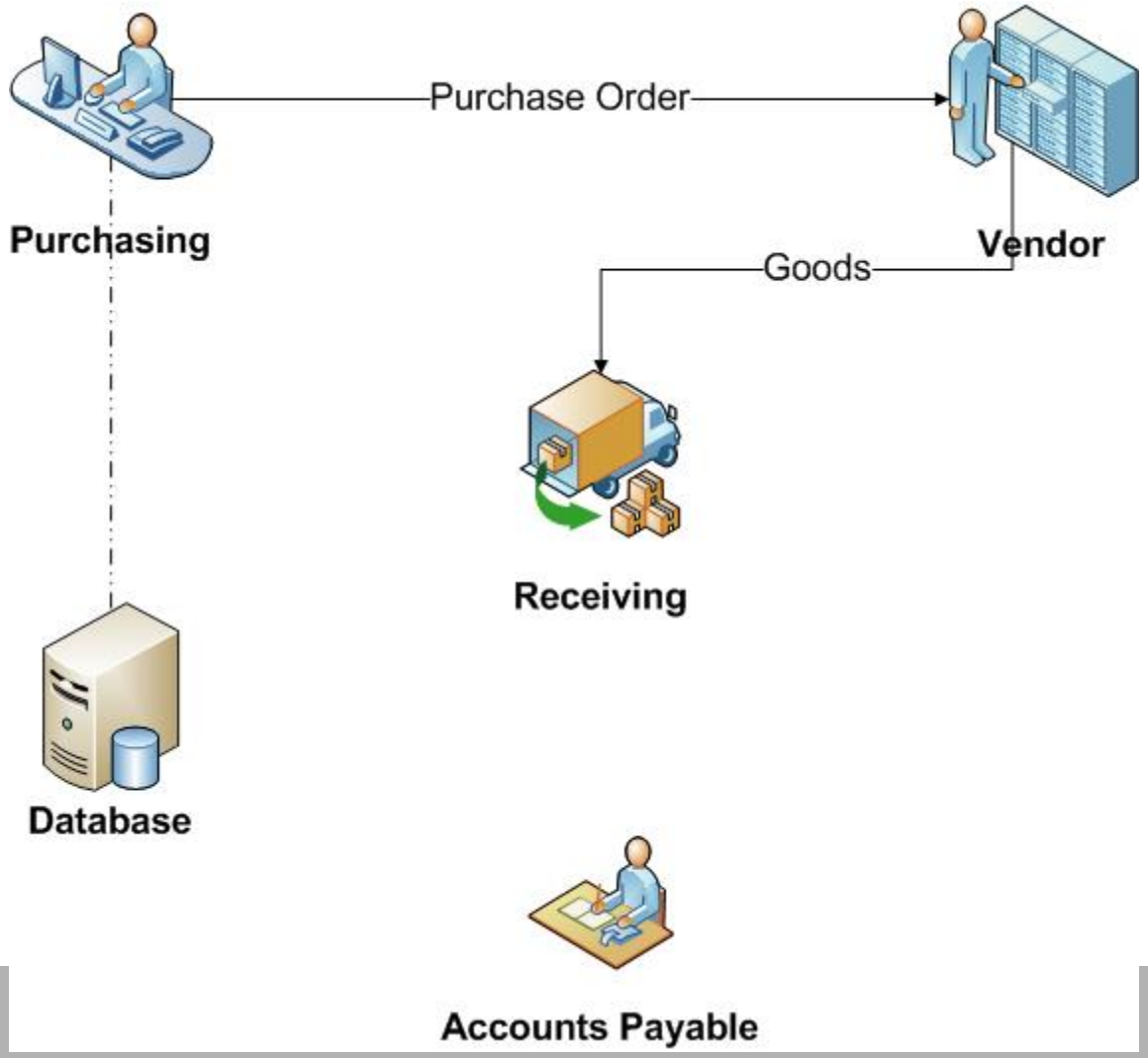

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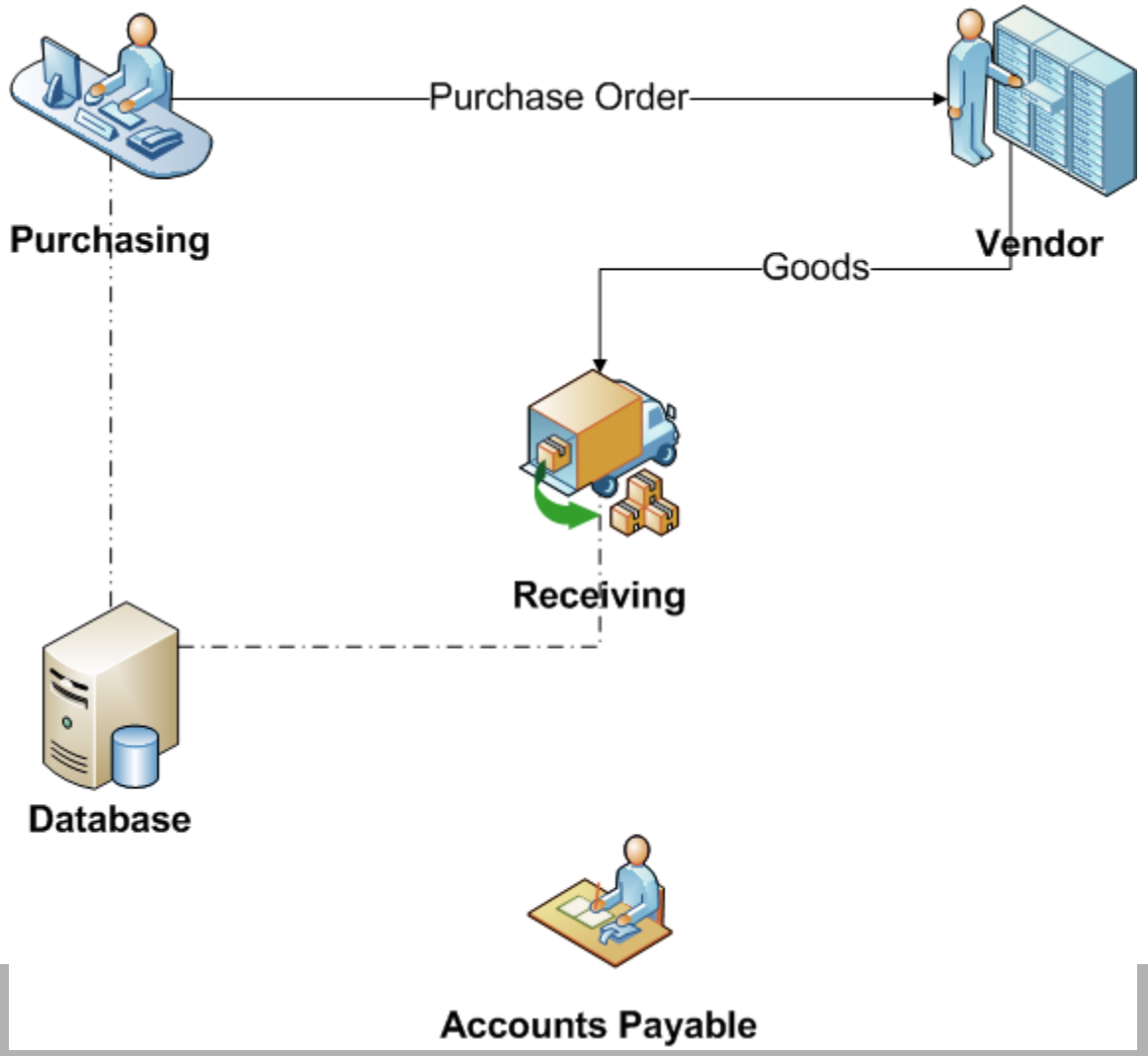
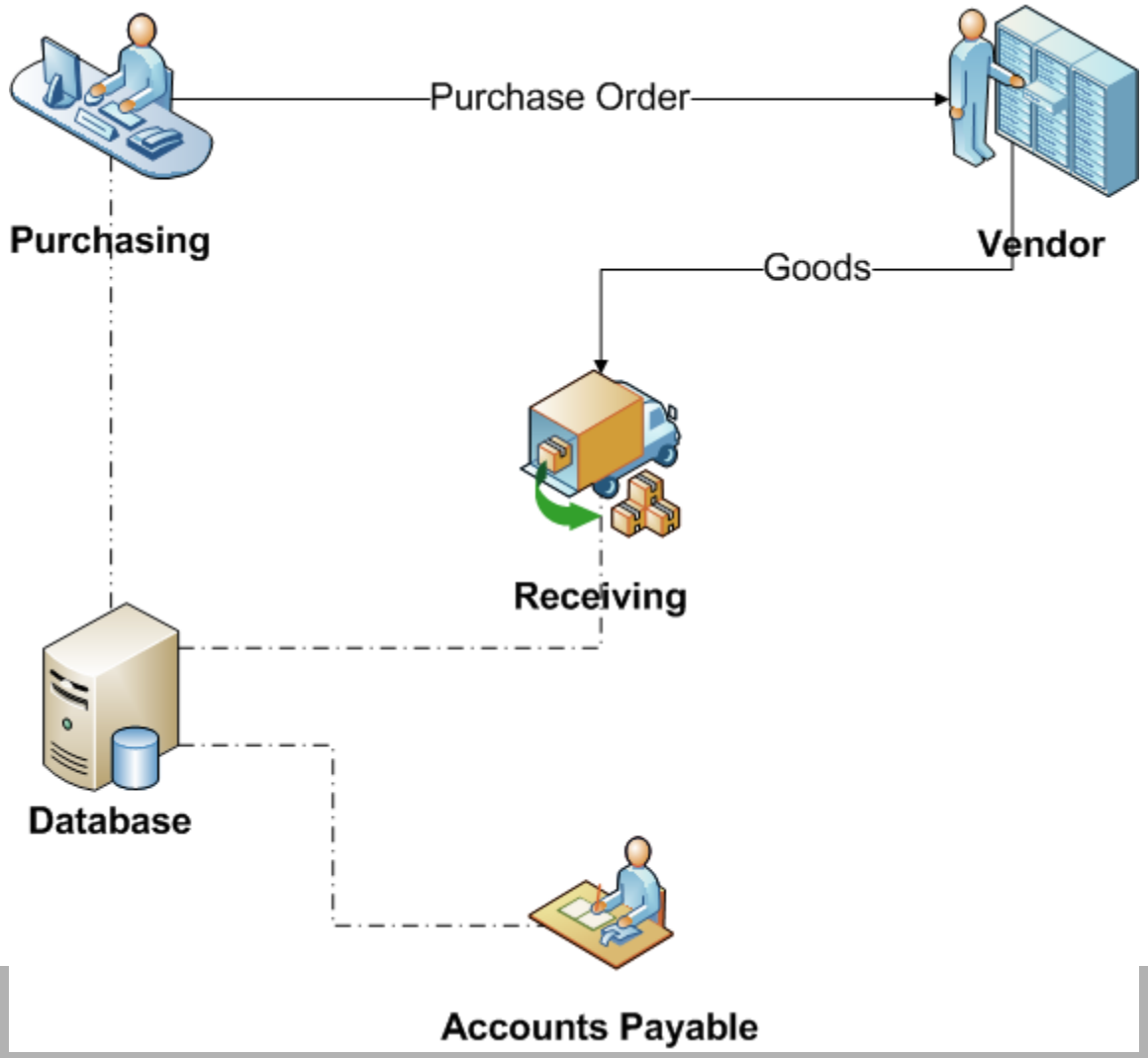
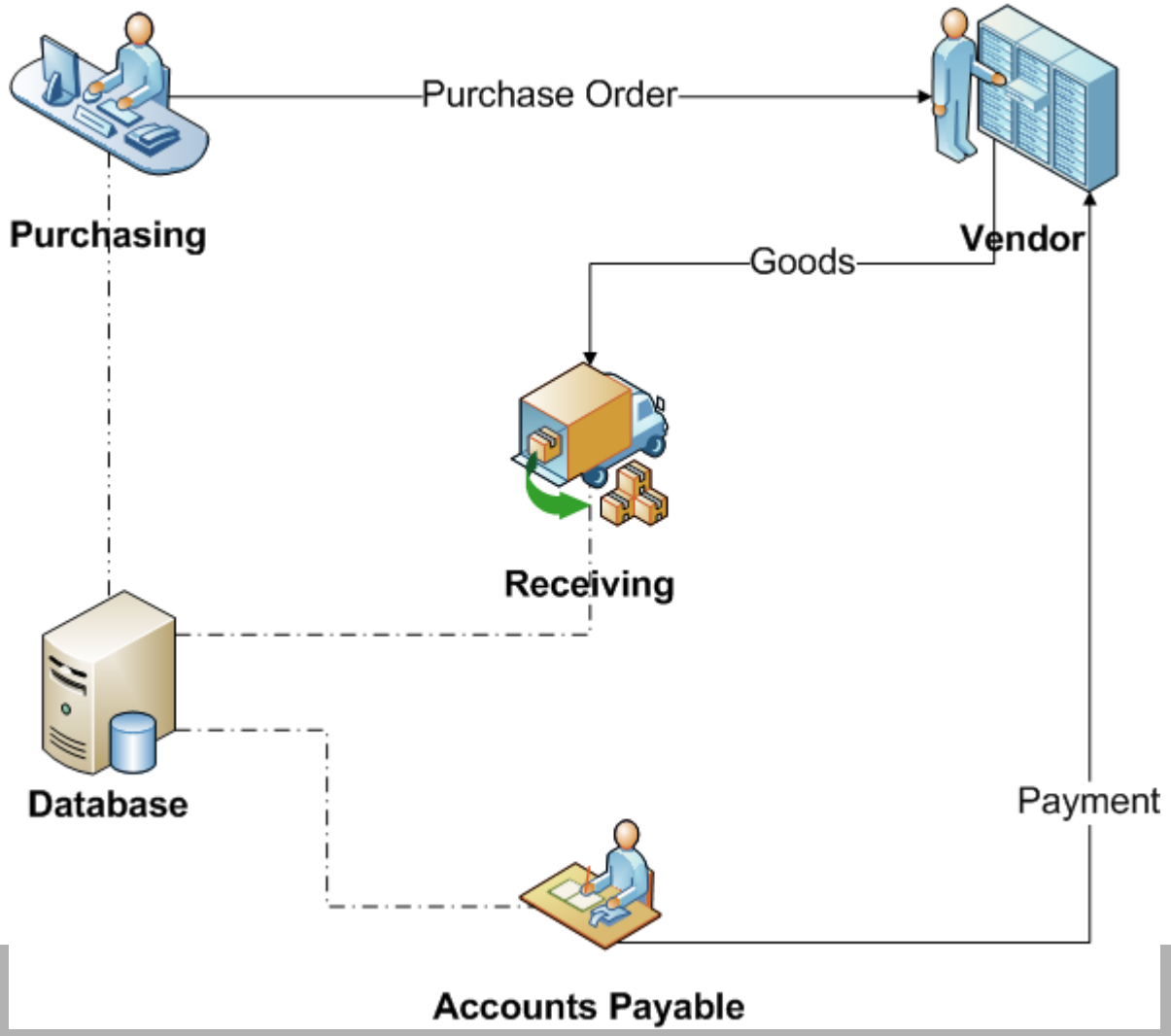


Reengineering Process (“to be”)



Reengineering Process (“to be”)



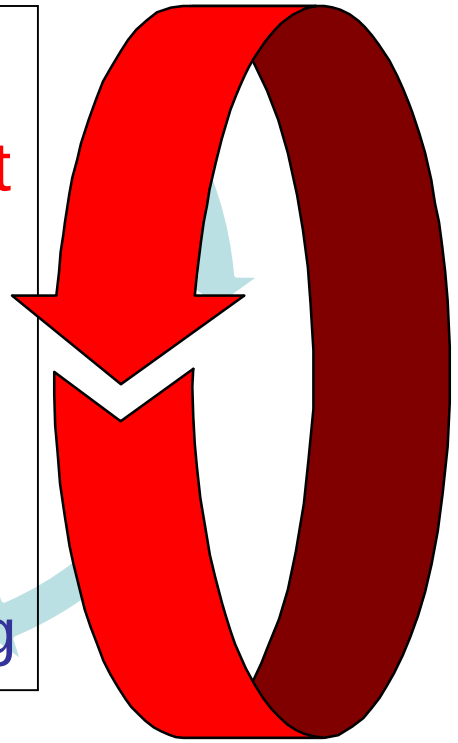
The result…

- 75% reduction in head count
- Material control is simpler and financial information is more accurate
- Purchase requisition is faster
- Less overdue payments

➔ Why automate something we don't need to do? Automate things that need to be done.

How to engage in BPM?

1. Process identification and opportunity assessment
2. Process discovery (as-is)
3. Process analysis
4. Process re-design (to-be)
5. Process implementation
6. Process monitoring/controlling



Process Modeling Tools

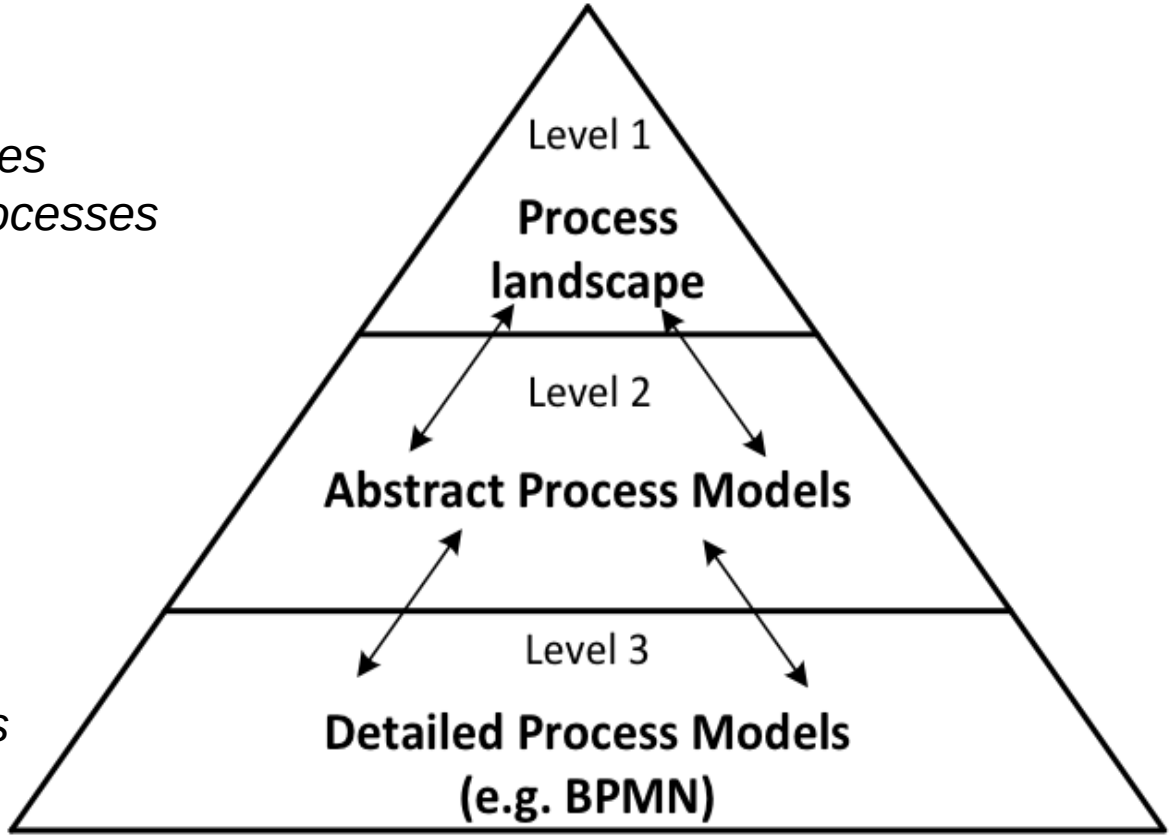
Process Management Systems

Process Identification

Core processes
Support processes
Management processes

Quote handling
Product delivery
Invoice handling

Detailed quote handling process



Phase 1: Performance Measure Identification and Selection

Cost

- Cost per execution
- Resource utilization
- Waste

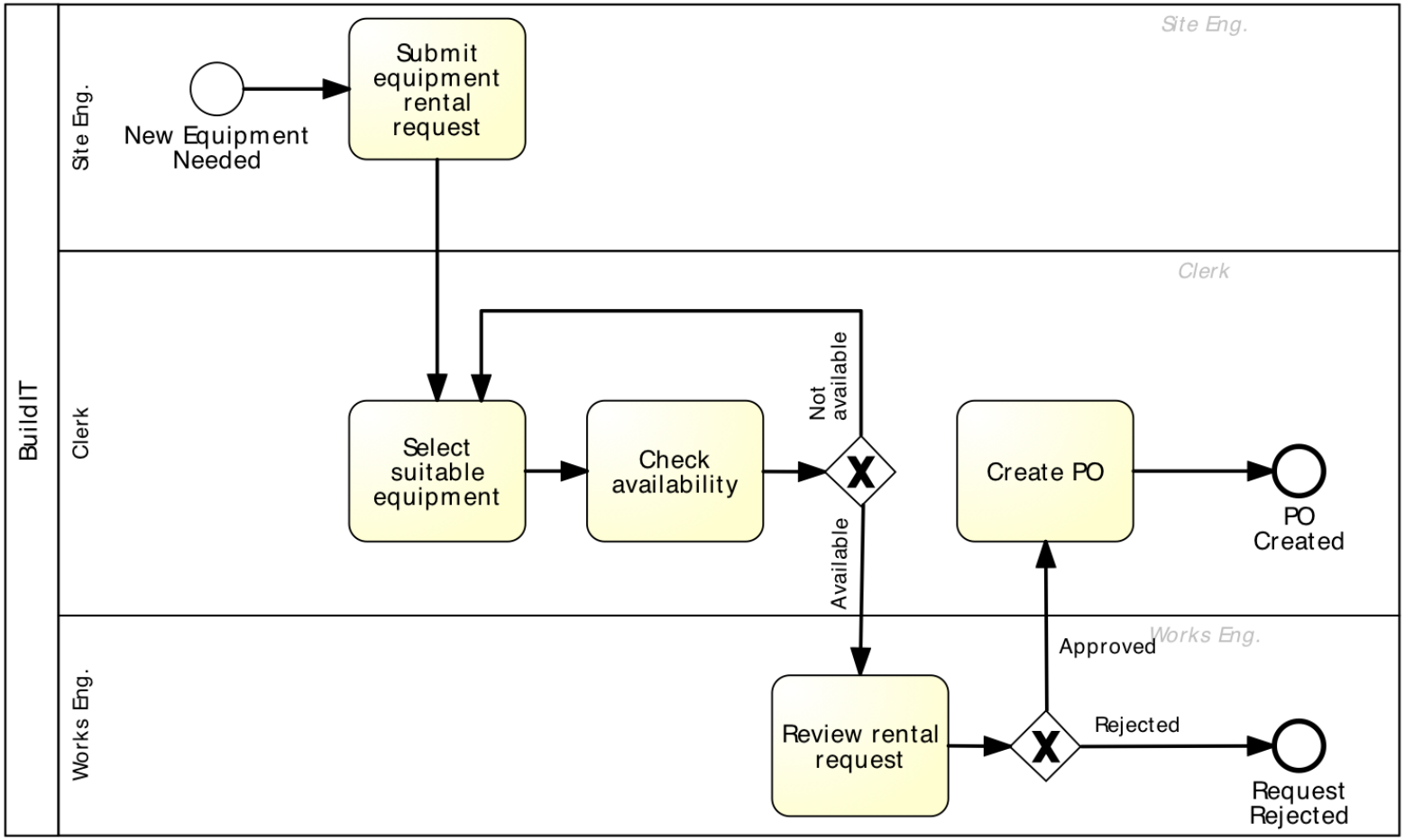
Time

- Cycle time
- Waiting time
- Non-value-adding time

Quality

- Error rates
- SLA violations
- Customer feedback

Phase 2: Process Discovery



Phase 3: Analysis

Qualitative analysis

- Root-cause analysis
- PICK charts
- Issue register

Quantitative Analysis

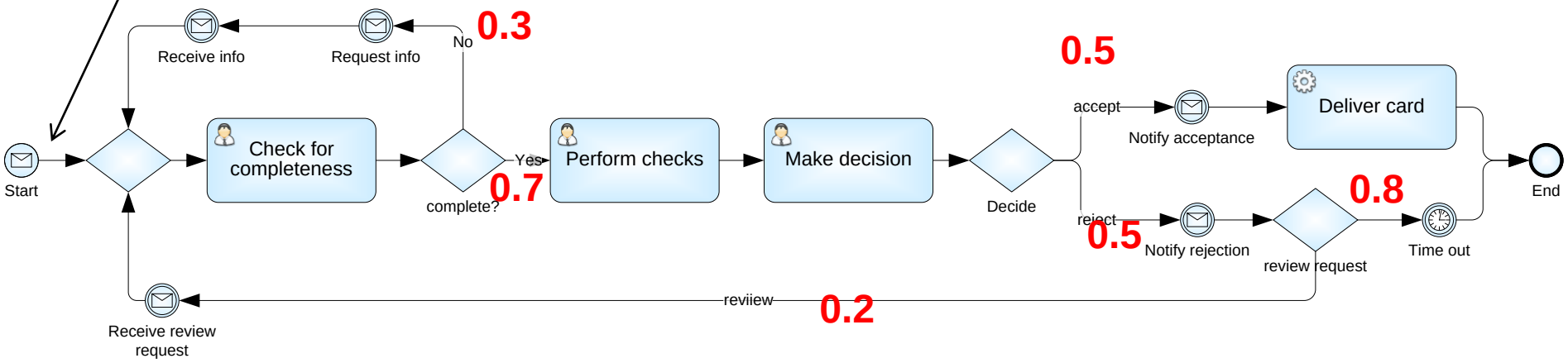
- Flow analysis
- Queuing analysis
- Process simulation

Issue Register

Issue No.	Short Description	Issue Explanation	Broad Consequence	Assumptions	Impact
2	Information regarding units does not match	Units in Relocation system do not match information provided by ...	Wrongly calculated entitlements cause manual calculation...	5% of cases go to the wrong queue, 5 minutes to sort queue and redirect. 5% recalculating on average 10 minutes per calculation.	28,000x0.05x15 = 21,000 minutes 350 hours/7.5 47 hrs 9.5 working days
5	Protected/ Mandatory data entry fields	Not all fields in data entry forms are relevant but mandatory. So "fuzzy" information is entered	Resource intensive, incorrect data. Cases in Clarify need to physically be closed.	5% of cases taking 2 minutes to locate and close. 5% of relocations requiring entry that is not needed taking 30 minutes each.	28,000x0.05x32 = 44,800 minutes 477 hours/7.5 99.5 hrs 20 working days
11	Information on posting orders	Time consuming to sort through posting orders to identify relocations....	MBR does not get Info pack therefore cannot process move. More information could be provided which could be used later in process ...	Only 1/3 rd of postings and CIPC's are entitled to relocation. 28000 relocations then sorting through 84000 postings. 3 to 4 minutes on average to sort through each.	84,000x3.5 = 294,000 min/60/7.5 = 653 days /250 working days in year. 2.61 FTE

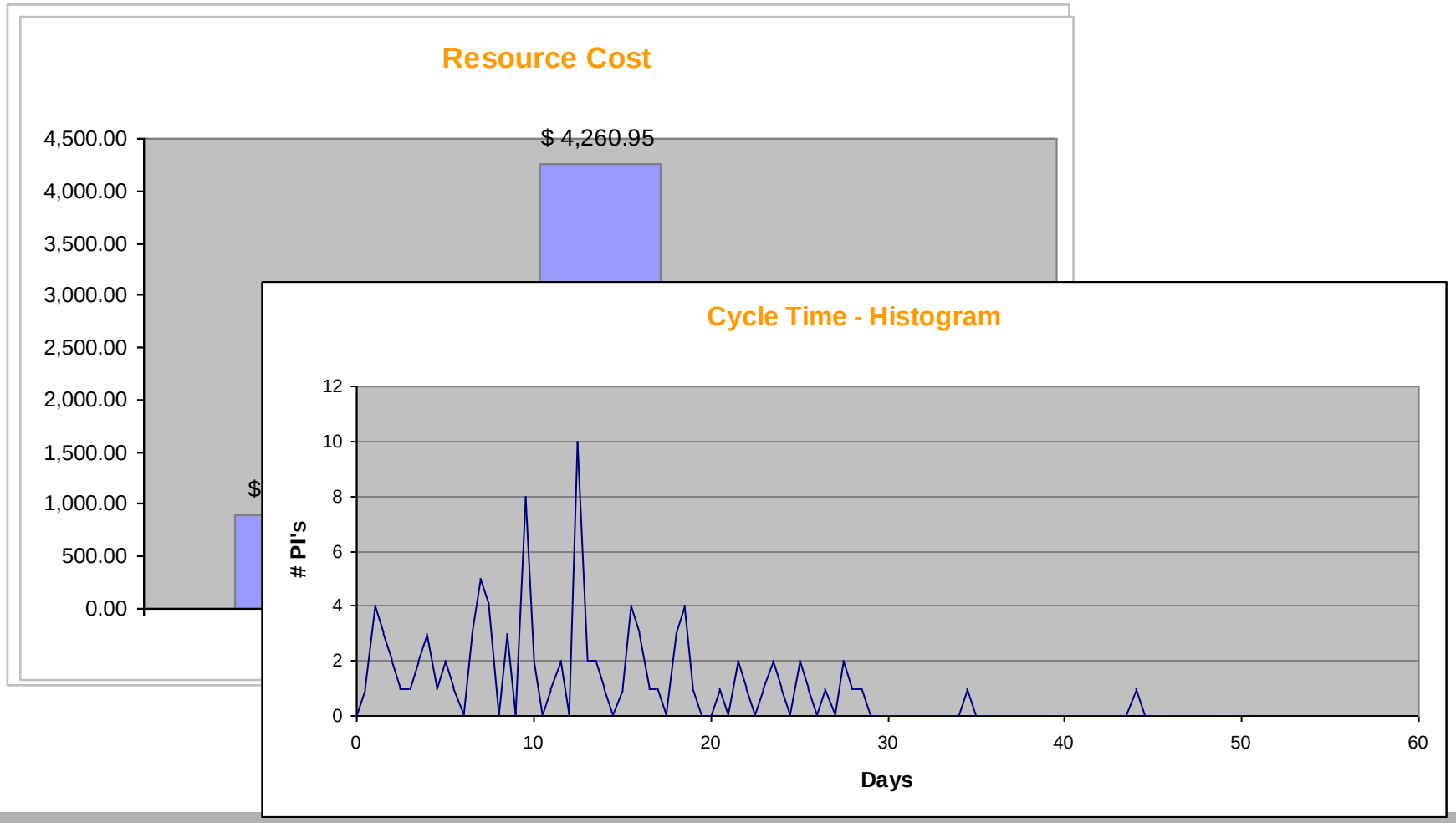
Simulation / What-If Analysis

10 applications per hour
Poisson arrival process (negative exponential)

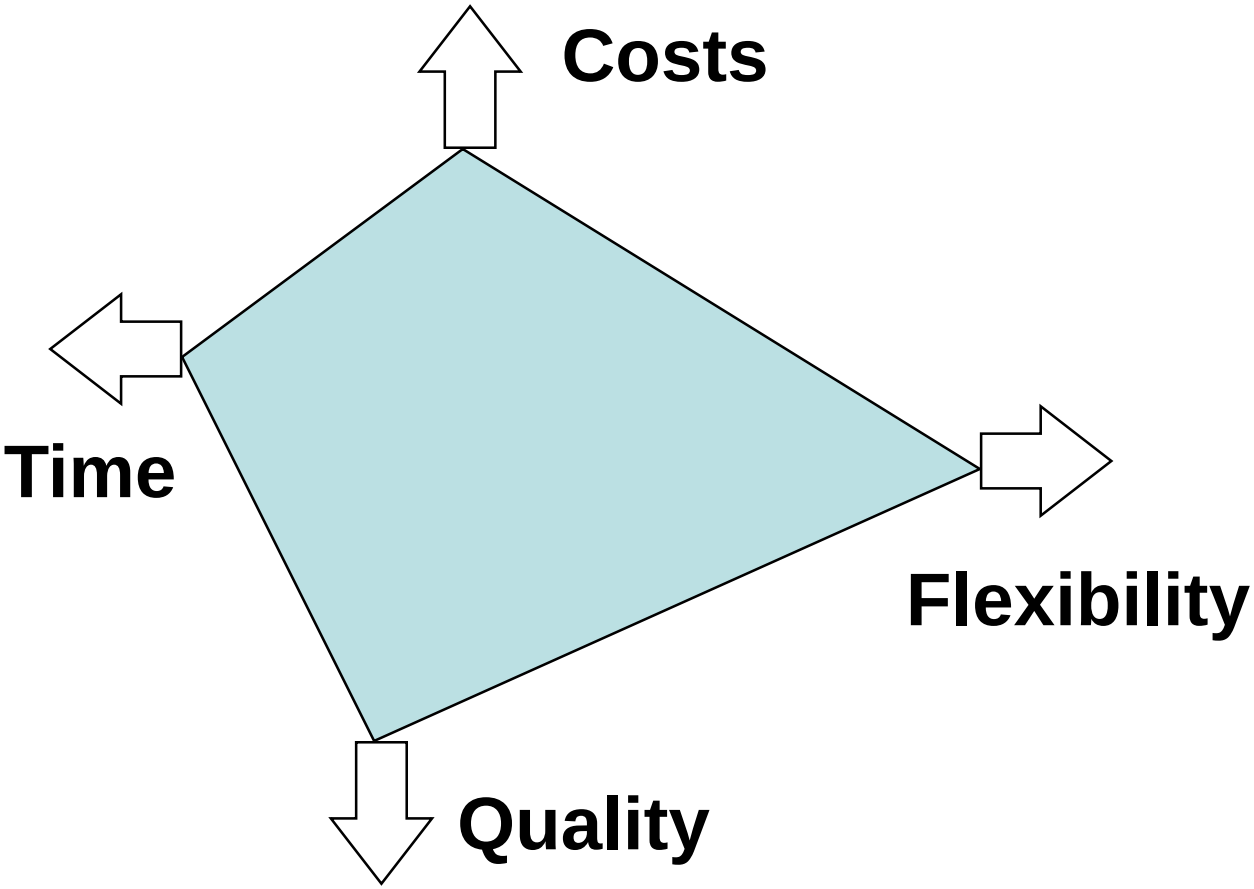


Task	Role	Execution Time (mean, dev.)	
Receive application	system	0	0
Check completeness	Clerk	30 mins	10 mins
Perform checks	Clerk	2 hours	1 hour
Request info	system	1 min	0
…	…	…	…

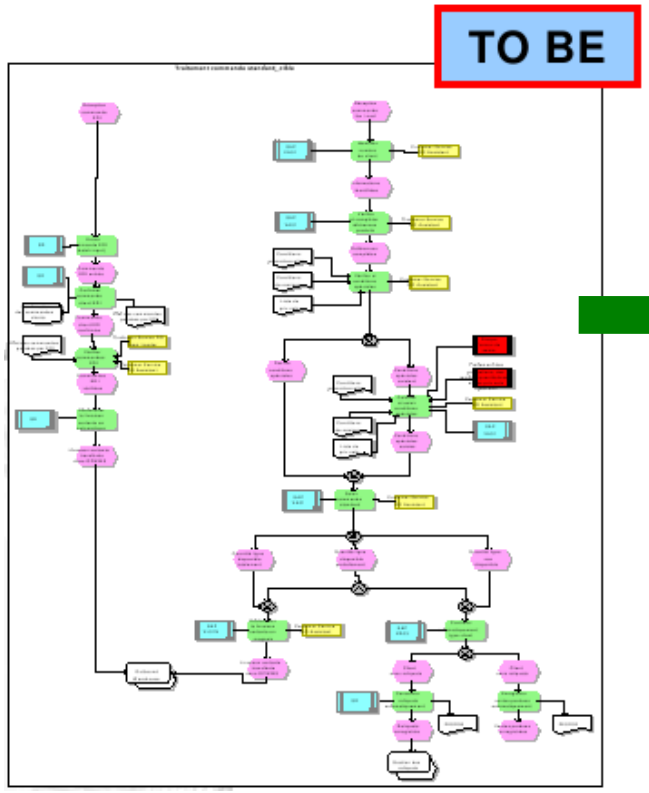
Simulation output: KPIs

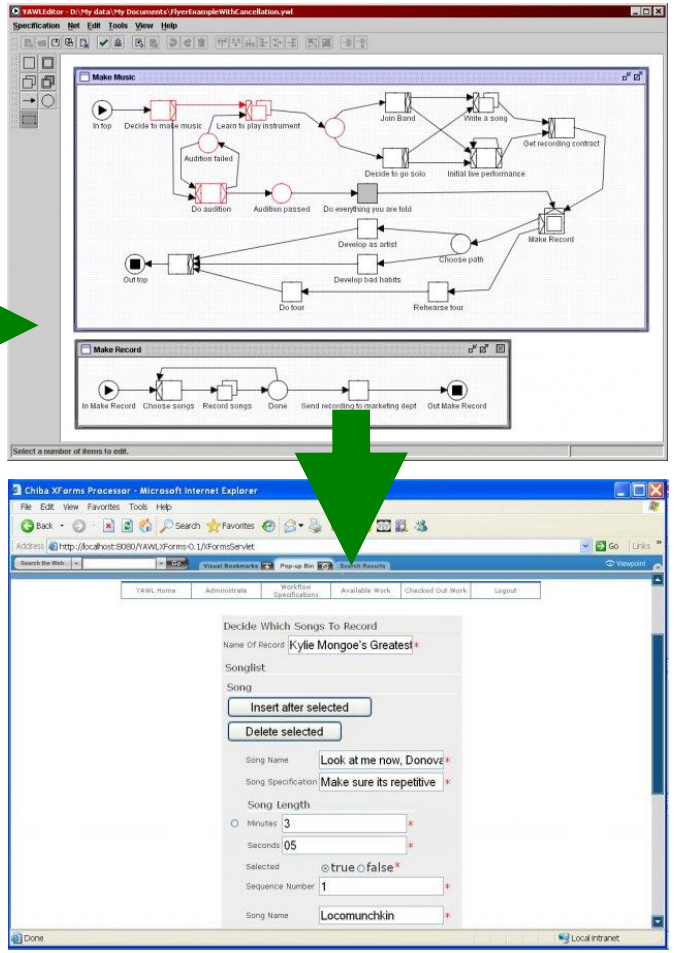


Phase 4: Process Re-Design



Phases 5-6. When technology Kicks in..





Process Execution Engines

- BPMN-based
  - BizAgi
  - Activiti
  - Progress Savvion
- BPEL-based
  - Oracle SOA Suite
  - ActiveVOS BPM
- IBM BPM
- Microsoft
  - BizTalk
  - Windows Workflow Foundation

Next Week

Introduction to Process Modeling