Lecture 8

Business Process Redesign

Part 1: Business Process Reengineering

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Process Redesign

- Process discovery
- Process identification
- Process analysis
- Process monitoring
- Process implementation
- To-be process model
- Process redesign
- Insights on weaknesses and their impact
- Conformance and performance insights
- As-is process model
- Executable process model
- Manage Risk
- Manage Information
- Procure Materials
- Procure Products
- Market Products
- Deliver Products
- Manage Customer Service
- Define Vision
- Develop Strategy
- Implement Strategy
- Management Processes
- Core Processes
- Support Processes
- Manage Personnel
- Manage Assets

Examples for BPM lifecycle and process mining

- A
- B
- C
- D
- E

1.5h
15h
2h
3m
3.5h
30h
15m
10m
10min
5m
5m
10m
30m
Process Redesign

Identify possibilities for improving the design of a process

AS-IS: Descriptive modelling of the real world

TO-BE: Prescriptive modelling of the real world

• No silver-bullet: requires **creativity**

• *Redesign heuristics* can be used to generate ideas
Process redesign approaches

**Transformation Redesign**
- Puts into question the fundamental assumptions and principles of the existing process structure
- Aims to achieve **breakthrough innovation**
- Example: Business Process Reengineering (BPR)

**Transactional Redesign**
- Doesn’t put into question the current process structure
- Seeks to identify problems and resolve them incrementally, one step at a time
- Example: Heuristic redesign (next week)
Business Process Reengineering (BPR)

- **Transformative**: Puts into question the fundamental assumptions of the “as is” process

- **Analytical**: Based on a set of principles that foster:
  - Outcome-driven processes
  - Integration of information gathering, work and decisions
The Ford Case Study

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

(Hammer, 1990)
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

Mazda’s accounts payable team was about 15 people, versus a department of over 500 in Ford.

Even after taking into account differences of size, this was 6-7 times smaller than Ford.
How the process worked? ("as is")
How the process worked? ("as is")
How the process worked? ("as is")
How the process worked? ("as is")
How the process worked? (“as is”)
How the process worked? ("as is")
Reengineered Process (“to be”)
Reengineered Process (“to be”)
Reengineered Process ("to be")
Reengineered Process ("to be")
Reengineered Process ("to be")
Reengineered Process ("to be")
• 75% reduction in head count
• Simpler material control
• More accurate financial information
• Faster purchase requisition
• Less overdue payments

Lessons:
• Why automate something we don’t need to do at all?
• Automate things that need to be done.

“Don’t Automate, Obliterate!” (Hammer, 1990)
Some principles of BPR

1. Capture information once and at the source
2. Subsume information-processing work into the real work that produces the information
3. Have those who use the output of the process drive the process
4. Put the decision point where the work is performed, empower workers to decide, and build control into the process
5. Treat geographically dispersed resources as though they were centralized.
Principle 1

Capture information once and at the source

- Shared data store
  - All process workers access the same data
  - Don’t send around data, share it!

- Self-service
  - Customers capture data themselves
  - Customers perform tasks themselves (e.g. collect documents)
Principle 2

Subsume information-processing work into the real work

- Evaluated receipt settlement: when receiving the products, record the fulfillment of the PO, which triggers payment
Principle 3

*Have those who use the output of the process drive the process*

- Vendor-managed inventory
- Scan-based trading
- Push work to the actor that has the incentive to do it
Example: problematic claims process

- **Client**
  - Request quote
  - Pay
  - **Claim**
  - Pay
  - Insurer
    - Authorize
    - Pay
    - Approved glass vendor
      - Pay
Redesigned claims process

Client -> Approved glass vendor

Approved glass vendor -> Insurer

Insurer -> Claim

Claim -> Pay

Pay -> Drop

Drop -> Client
Principle 4

*Put the decision point where the work is performed, empower workers to decide, and build control into the process*

- Empower the process workers
- Provide process workers with information needed to make decisions themselves
- Replace back-and-forth handovers between workers and managers (transportation waste) with well-designed controls
Equipment rental process

1. New Equipment Needed
2. Submit equipment rental request
3. Select suitable equipment
4. Check availability
5. Create PO
6. Review rental request
7. Approved
   - PO Created
8. Rejected
   - Request Rejected
Self-service-based redesign

**Principles 1 & 2**

- When equipment is needed, site engineer queries the suppliers’ catalogue, selects equipment and triggers PO

**Principle 3**

- Supplier stocks frequently used equipment at construction site, site engineers scan to put them into use

**Principle 4**

- Site engineer is empowered with the authority to rent the equipment; works engineer performs statistical controls
**Principle 5**

Treat geographically dispersed resources as though they were centralized.

- If same people perform the same function in different locations, integrate and share their work wherever possible

- Larger resource pools → less waiting times even with relatively high resource utilization
Next week

- Transactional process redesign
- Redesign heuristics