

# Business Process Redesign/Reengineering: Introduction

Based on: Malhotra, Business Process Redesign: An  
Overview, <http://www.brint.com/papers/bpr.htm>.

# What this Topic Focuses On

- What is a Business Process?
- What is Business Process Redesign?
- How does it differ from Business Process Reengineering?
- Power of IT/ICT
- Relationship between BPR and IT
- A BPR Methodology
- Other Organizational Devpt Approaches: Total Quality Management (TQM)
- Similarities and differences between BPR and TQM
- Summary

# What is a Business Process?

## Various Definitions:

- "a set of logically related tasks performed to achieve a defined business outcome."
- "a structured, measured set of activities designed to produce a specified output for a particular customer or market."
- "Implies a strong emphasis on how work is done within an organisation" (Davenport).
- Processes have two important characteristics:
  - 1 They have customers (internal or external),
  - 2 They cross organisational boundaries, i.e., they occur across or between organisational subunits.

# What is a Business Process? (cont'd)

Identified in terms of:

- beginning and end points,
- interfaces,
- organisation units involved, particularly the customer unit.

High Impact processes should have process owners.

Examples of processes include:

- developing a new product;
- ordering goods from a supplier;
- creating a marketing plan;
- processing and paying an insurance claim;
- etc.

# What is a Business Process? (cont'd)

Defined based on three dimensions:

- **Entities:**
  - + Processes take place between organisational entities.
  - + They could be Interorganisational, Interfunctional or Interpersonal.
- **Objects:**
  - + Processes result in manipulation of objects.
  - + These objects could be Physical or Informational.
- **Activities:** Processes could involve two types of activities:
  - + Managerial (e.g. develop a budget) and
  - + Operational (e.g. fill a customer order).

(Davenport & Short 1990)

# What is Business Process Redesign?

- "the analysis and design of workflows and processes within and between organisations" (Davenport & Short 1990).
- "the critical analysis and radical redesign of existing business processes to achieve breakthrough improvements in performance measures." Teng et al. (1994)

# How Do BP Redesign & Reengineering Differ?

- Often by very little; both entail improving BPs in hope of gaining radical improvements.
- Main difference is in improvement project *scope/scale*:
  - + Reengineering:
    - complete elimination of existing process & *ab initio* design of new one
  - + Redesign:
    - may leave existing BP intact
    - look at boosting measures such as customer satisfaction, cycle time etc
- Reengineering usually involves core BPs (e.g. recruitment) and may involve corporate continents
- Redesign may involve a more local process/subprocess
- Often the terms are used interchangeably.

# Hammer's Principles of Reengineering

- a Organise around outcomes, not tasks;
- b Have those who use the output of the process perform the process;
- c Subsume info processing work into real work that produces the info;
- d Treat geographically dispersed resources as tho they were centralised;
- e Link parallel activities instead of integrating their results;
- f Put decision point where work is performed, & build control into process;
- g Capture information once and at the source



# Power of Information Technology (aka ICT)

IT creates a “public good” i.e. a resource that can be accessed by many functions.

- Shared info resource is not “used up” by usage, and retains its value for other users.
- Provides comprehensive info that facilitates accomplishment of process objectives on a more global basis.
- Caveat: have to be very careful of data (not the same as info!):
  - + Nowadays data can be huge (TB), multi-dimensional and noisy
  - + So information from this is a huge challenge to draw conclusions from even for modern computing resources (cloud, HPC)
  - + Also lots of messy ethical, proprietorial issues around data use, storage

# Relationship between BPR & Information Technology?

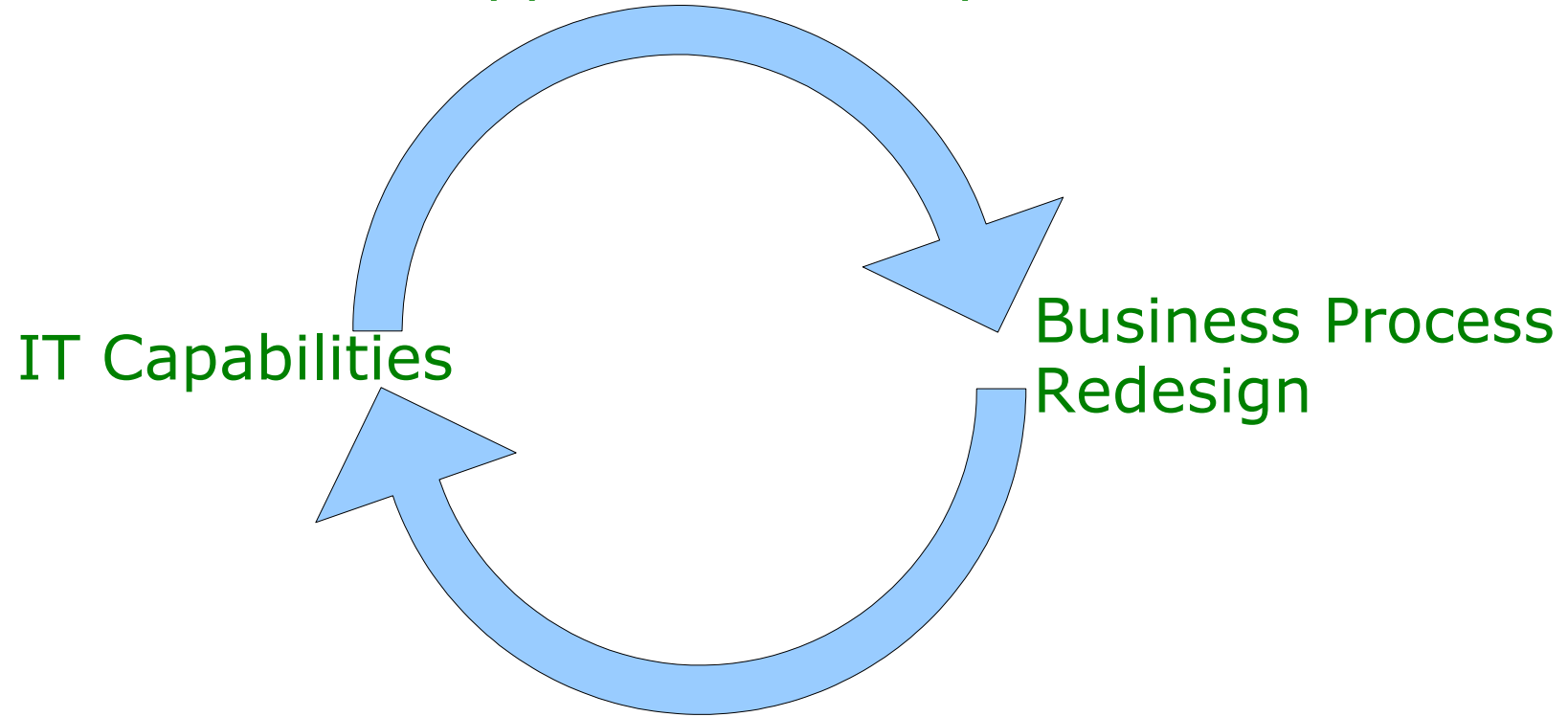
- IT is the key enabler of BPR (Hammer).
- Use IT to challenge the inherent assumptions from before the advent of modern ICT developments.
- Core of reengineering is "discontinuous thinking -- or recognising and breaking away from the outdated rules and fundamental assumptions underlying operations... These rules of work design are based on assumptions about technology, people, and organisational goals that no longer hold."

# BPR and IT: A Recursive relationship

- BPR requires broader view of both IT and business activity, and relationships between them.
  - + **IT** – more than automation/mechanisation: used to fundamentally reshape the way business is done: (“don't pave the cow path”)
  - + **Business activities** – more than a collection of individual or even functional tasks.
- IT and BPR have a recursive relationship
  - + IT capabilities should support business processes, and
  - + business processes should be in terms of the capabilities IT can provide.

# Recursive relationship between BPR and IT (cont'd)

How can IT support business processes?



How can business processes be transformed using IT?

IT impact is as a tool for reducing the costs of coordination

# BPR and IT

Awareness of IT capabilities can – and should – influence process design.

How IT capabilities affect the organisation – 1

- Transactional** – can transform unstructured processes into routinised transactions
- Geographical** – can transform information with rapidity and ease across large distances
- Automational** – can replace or reduce human labour in a process
- Analytical** – can bring complex analytical methods to bear on a process

# BPR and IT (cont'd)

## How IT capabilities affect the organisation – 2

### **Informational**

- can bring vast amounts of detailed info into a process

### **Sequential**

- can enable changes in the sequence of tasks

### **Knowledge Management**

- allows capture and dissemination of knowledge

### **Tracking**

- allows detailed tracking of task status

### **Disintermediation**

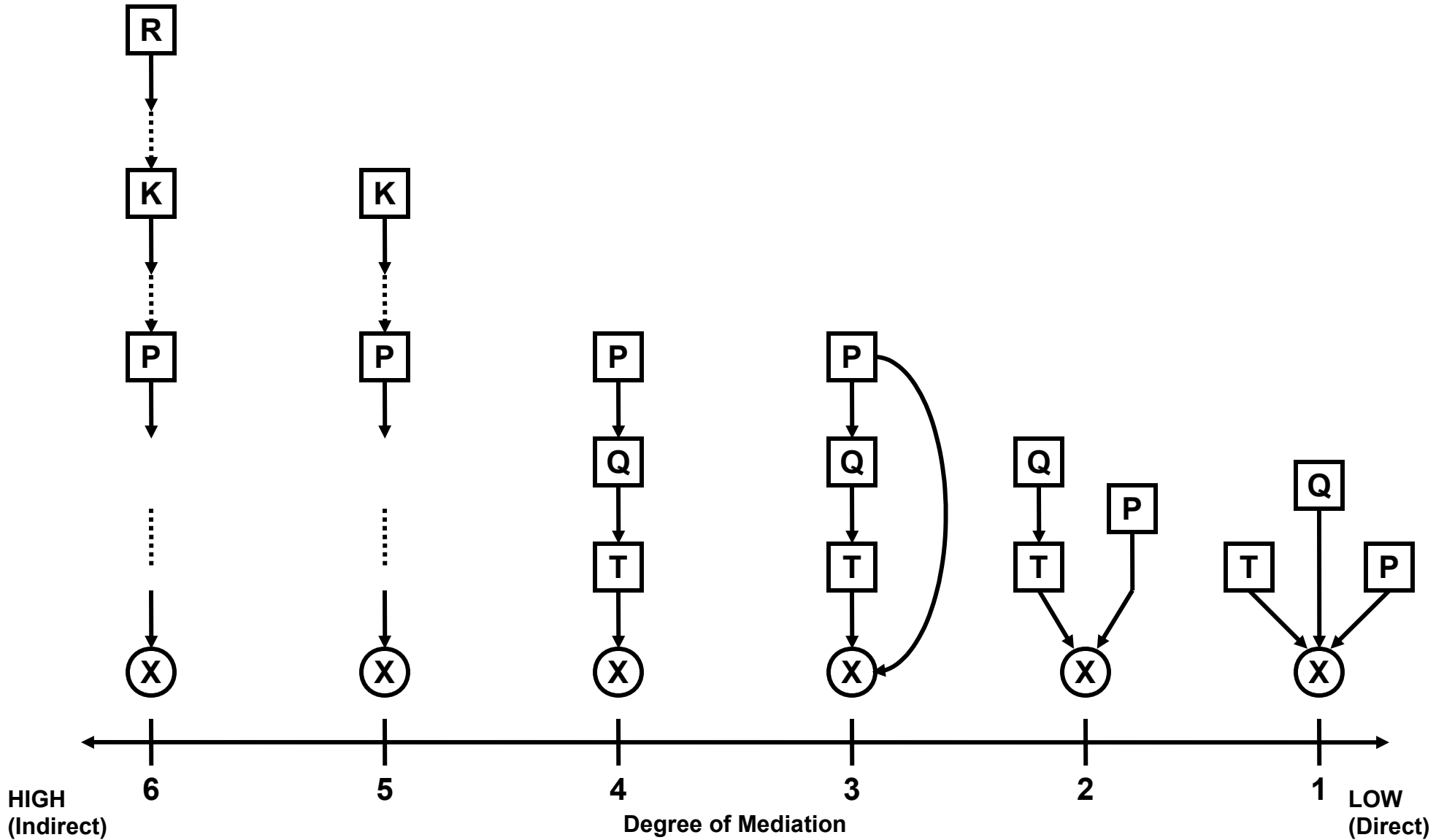
- can be used to connect two parties within a process that would otherwise communicate through an intermediary

## BPR & IT (cont'd)

The way related functions participate in a process (functional coupling of a process) can be differentiated along two dimensions:

- degree of mediation - the extent of sequential flow of input and output among participating functions
- degree of collaboration - the extent of information exchange and mutual adjustment among functions when participating in the same process.

# Degree of Mediation (Teng)

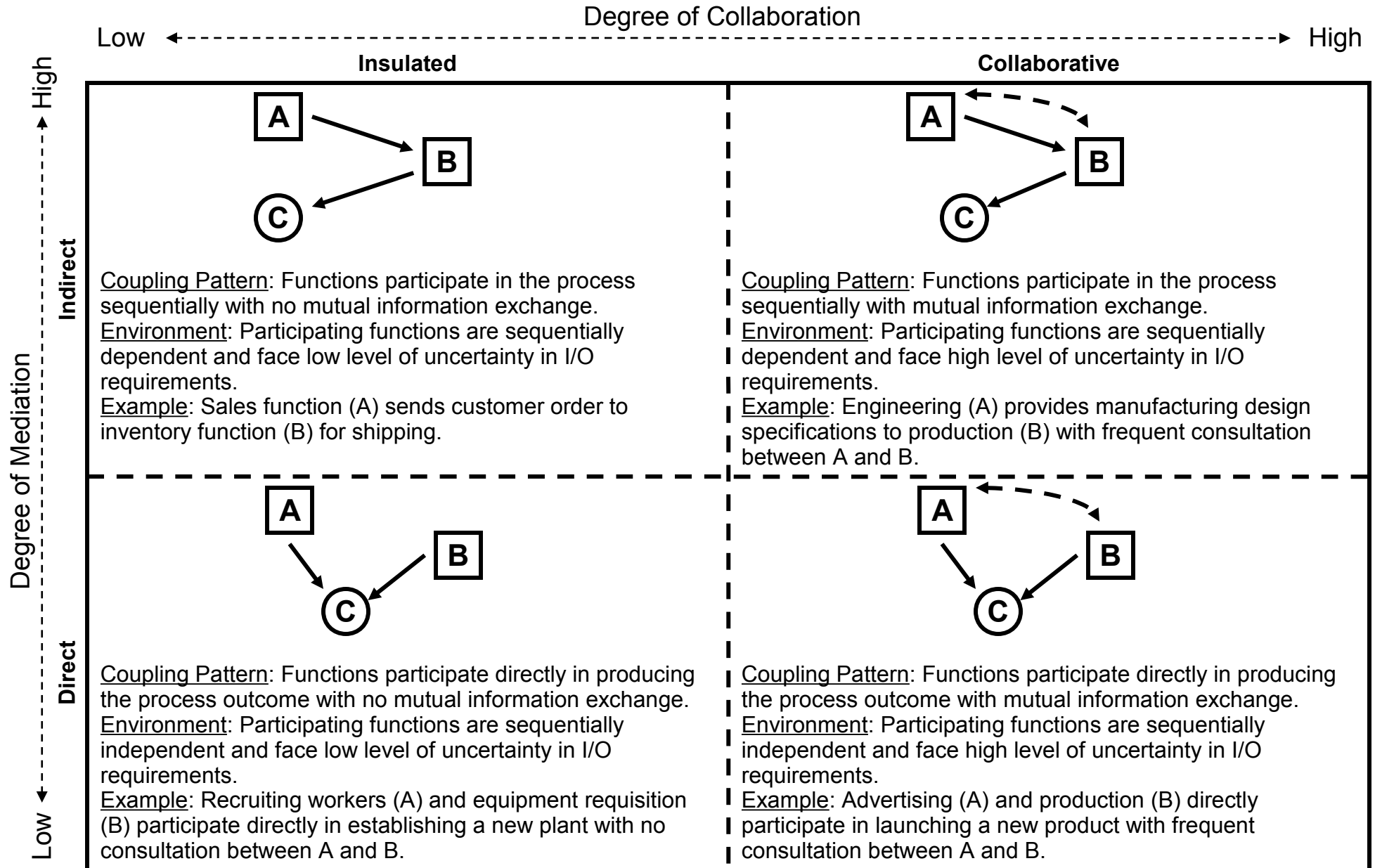




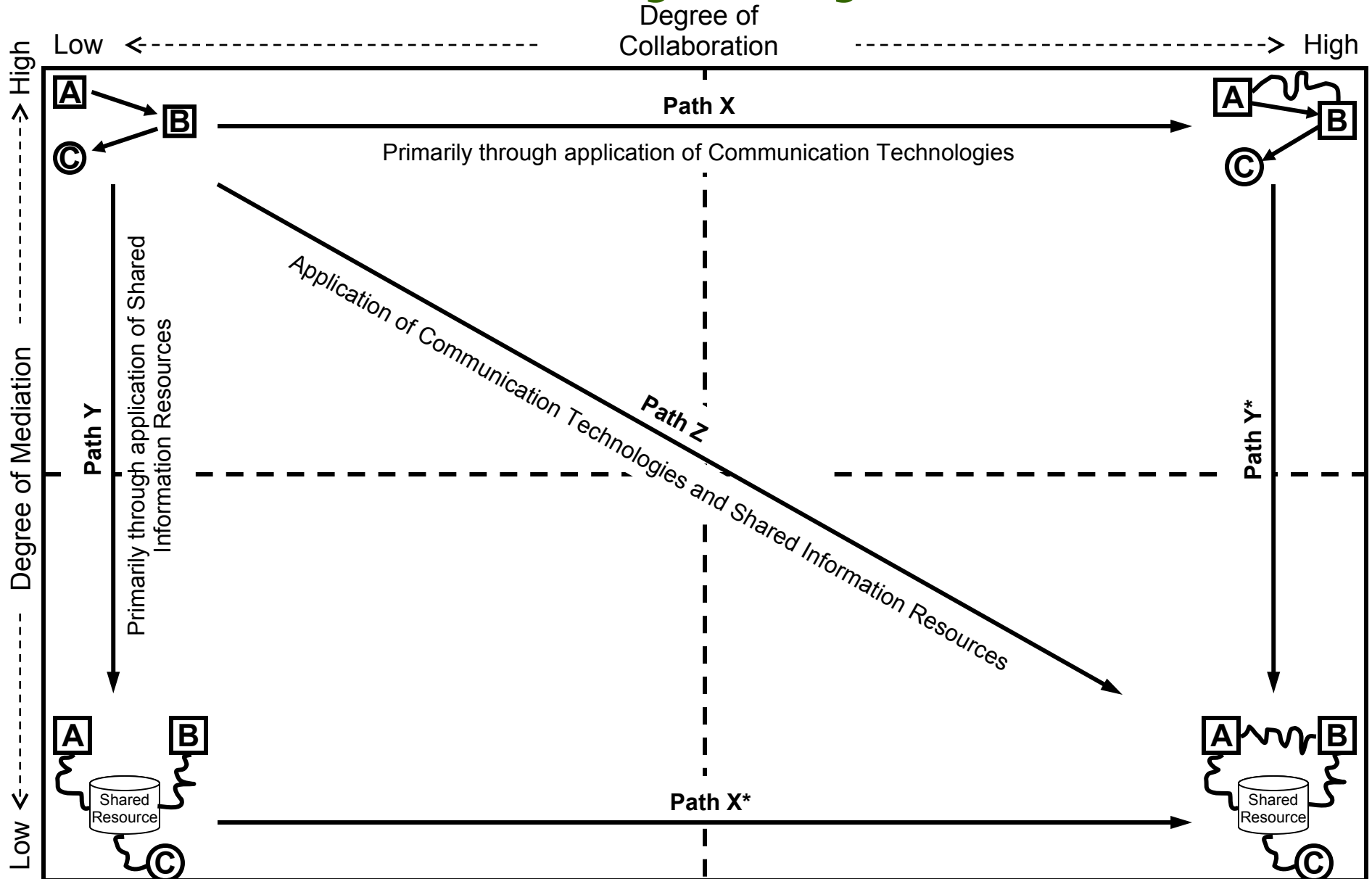
# Degree of Collaboration

- Frequency and intensity of information exchange between two functions ranges from *none* (completely insulated) to *extensive* (highly collaborative).
- Many process can be improved by increasing the degree of collaboration.

# Functional Coupling Framework of Business Processes



# Application if IT in Alternative Paths for Process Reengineering



# BPR & IT (Teng)

- IT reduces the Degree of Mediation and enhances the Degree of Collaboration.
- Innovative uses of IT leads many firms to develop new, coordination-intensive structures, enabling the coordination of their activities in ways not hitherto possible before.
- Such coordination-intensive structures may raise the organization's capabilities and responsiveness, leading to potential strategic advantages.
- In a later lecture will look at how this has happen in the context of BPM with Service Oriented Architectures.

# A Methodology for BPR. (Davenport and Short)

## Five-step approach to BPR:

- **Develop the Business Vision and Process Objectives:**
  - + prioritise objectives and set stretch targets
- **Identify the Processes to be Redesigned:**
  - + Identify critical or bottleneck processes
- **Understand and Measure the Existing Processes:**
  - + Identify current problems and set baseline for future efforts
- **Identify IT Levers:**
  - + Brainstorm new process approaches
- **Design and Build a Prototype of the New Process:**
  - + Implement organisational and technical aspects

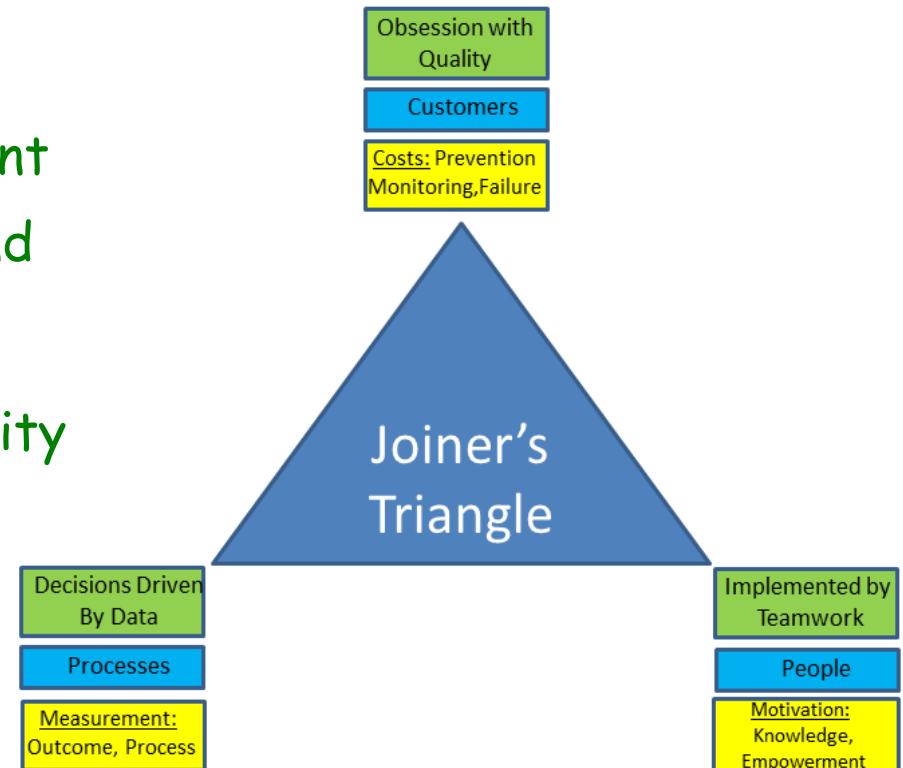
## Ideally after that should come:

- **Process Implementation**
- **Continuing (re)evaluation**

# Other Organizational Devpt Approaches: Total Quality Management (TQM)

## TQM:

- Historically preceded & inspired BPR
- An integrative philosophy of management for continuously improving products and process quality.
- Assumes that product and process quality is responsibility of all involved in building/consuming the products or services offered by an organization.
- => requires participation of management, workforce, suppliers, and customers



# How Does BPR Differ from TQM?

- In recent years, increased attention to business processes is largely due to the TQM. TQM and BPR share a cross-functional orientation. (Teng)
- Quality specialists tend to focus on incremental change and gradual improvement of processes, while BPR advocates often seek radical redesign and drastic improvement of processes. (Davenport)

# BPR vs. TQM

- *Quality management* (TQM or continuous improvement), refers to programs & initiatives that emphasise incremental improvement in work processes & outputs over an open-ended period of time.
- *Reengineering*, also known as *business process redesign* or *process innovation*, refers to discrete initiatives that are intended to achieve radically redesigned and improved work processes in a bounded time frame. (Davenport)



# Process Improvement (TQM) versus Process Innovation (BPR)

From Davenport (1993, p. 11)

	<b><u>Improvement</u></b>	<b><u>Innovation</u></b>
Level of Change	Incremental	Radical
Starting Point	Existing Process	Clean Slate
Frequency of Change	One-time/Continuous	One-time
Time Required	Short	Long
Participation	Bottom-Up	Top-Down
Typical Scope	Narrow, within functions	Broad, cross-functional
Risk	Moderate	High
Primary Enabler	Statistical Control	Information Technology
Type of Change	Cultural	Cultural/Structural

# Summary

Have seen in this topic:

- What is a Business Process?
- Differences between BP Redesign & Reengineering
- Uses of Information Technology (aka ICT) in BPR
- Degree of Mediation & Collaboration in BPR
- A Methodology for BPR. (Davenport and Short)
- Other Organizational Devt Approaches: Total Quality Management (TQM)
- Differences BPR Differ from TQM

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