Using TOC Thinking Process Tools to Enhance the Effectiveness of Business System Optimization

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Agenda

- Introduction
- What is wrong with the practice of Business Process Reengineering and Optimization (BPR/BPO)?
- A Generic CRT of BPR/BPO
- TOC-Based Business System Optimization (BSO)
- Application of BSO

Introduction
Who am I?

- MBA (Clemson University), Diplom-Kaufmann (University of Essen, Germany)
- Various positions across the supply chain with organizations such as the German Red Cross, Duesseldorf Trade Fairs, Hewlett-Packard, Monroe, and ASCAD
- Consultant with CSC Ploenzke and independent
- Consulted to companies such as GM (Opel), Henkel, Karstadt and others
- Member of APICS (CM SIG), Beta Gamma Sigma, German Association of Economics and Business Administration (BDVB)

The Goal of Business Process Reengineering and Optimization

BPR and BPO promise to

- ”achieve dramatic improvements in critical contemporary measures of performance, such as cost, quality, service, and speed“

through

- “the fundamental rethinking and radical redesign of business processes” (BPR)

resp. through

- the optimization of existing business processes (BPO)

The Current Practice of BPR/BPO
A Failure Rate of 70%!

- BPR/BPO projects often did not yield the expected results
- All applications where no drastic improvements have been reached can be considered a failure
- Several authors compiled long lists of reasons for these failures

A Generic CRT of BPR/BPO-Failures For a Better Understanding

A Current Reality Tree (CRT):

- can help to gain a better understanding of the problems associated with the practice of BPR/BPO
- can answer the question ”Why are almost 70% of BPR/BPO-projects a failure?”

A Generic CRT of BPR/BPO-Failures
UDEs to Start With

- Many BPR/BPO-projects don‘t yield lasting improvements of the business system (#1)
- Many BPR/BPO-projects don‘t lead to a global improvement of the business system (#2)
- There is no system‘s approach to BPR/BPO (#5)
- Many employees resent the way they are treated in BPR/BPO-projects (#6)
- Often, the BPR/BPO-team has only little trust in the capabilities of other employees (#9)

A Generic CRT of BPR/BPO-Failures
The Current Reality Tree

- The CRT is on an extra slide!

A Generic CRT of BPR/BPO-Failures
A Closer Look at the Constraints

- BPR/BPO is not constraints-focused (Entity 550)
- In BPR/BPO an organization is not viewed as a system (Entity 630)
- BPR/BPO is no process of ongoing improvement (Entity 470)
- BPR/BPO-projects are cost-world driven (Entity 700)

A Closer Look at the Constraints: BPR/BPO is Not Constraints-Focused (550)

- Focus on core business processes
- No identification of system constraints
- Focus on constraints only “by chance”
- High risk not to improve high leverage areas
- Improvement during and following the project will therefore be only marginal and temporary

A Closer Look at the Constraints
No Systems View of an Organization (630)

- Local instead of global focus
- Interdependencies within the system and systems constraint(s) are ignored
- Local improvements
- Global optimum is not the sum of the local optima
- Results will be less than optimal

A Closer Look at the Constraints BPR/BPO is no POOGI (470)

- Open systems in a changing environment: solutions deteriorate over time
- One-time efforts are not sufficient for optimal system performance
- A process of ongoing improvement is necessary to maintain optimal performance over time

A Closer Look at the Constraints BPR/BPO are Cost-World Driven (700)

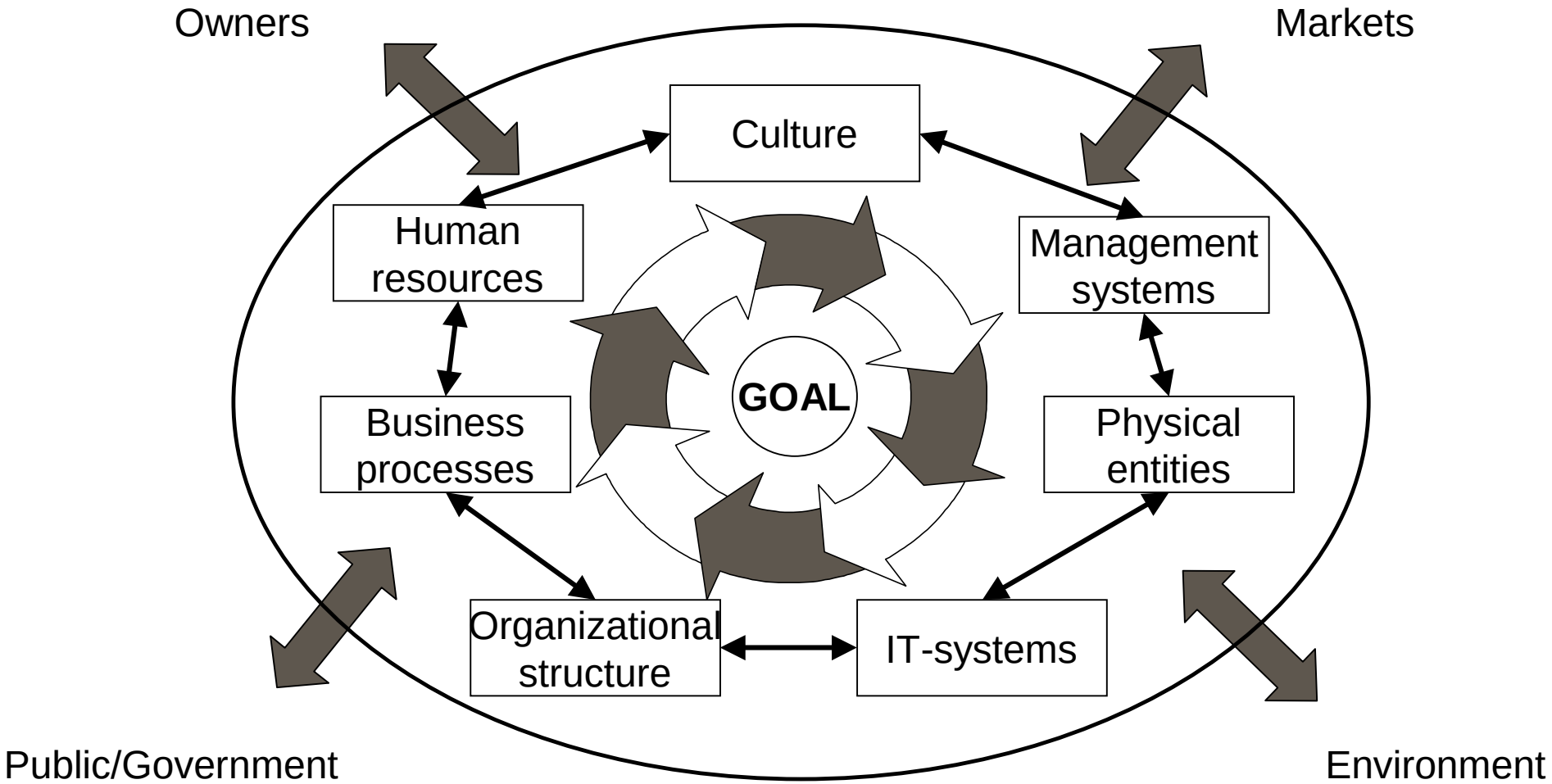
Cost-World:

- Cost-cutting is often the primary focus of BPR/BPO-activities
- Possibilities to improve throughput are neglected

The BPR/BPO-CRT Serves Three Purposes

1) Illustrating BPR/BPO's current reality and the need for a different approach to the improvement of a business system
2) Pinpointing the weaknesses of BPR/BPO and thereby helping to improve the concept
3) Cautioning against core problems of BPR/BPO-projects

Focusing on the Business System



Business System Optimization (BSO)

BSO is characterized by:

- Systems view of the business (global focus)
- Any business system has one or more constraint(s)
- Improvement means the business system is more successful achieving its goal
- Improvements need global focus and constraints focus

The BSO Process (I)

TOC's Five Focusing Steps:

- A process of continuous system improvement (Process of Ongoing Improvement – POOGI)
- A roadmap to sustainable global improvement
- The BSO Process is based on the Five Focusing Steps

The BSO Process (II)
Steps to Define the System Environment

1) **Define the business system**: especially, the business system's boundaries, the interfaces to its environment, traffic on these interfaces, the limits of control of the business system's owner
2) **Define the system's goal**: in a business system it will almost always be to "make more money now and in the future"
3) **Determine appropriate measurements**: The prime measurement will be financial throughput or Throughput Value Added (TVA); additional measurements can be used to assess necessary conditions

The BSO Process (III)
Five Focusing Steps

4) **Identify the system's constraint(s)**: Use TP tools (especially CRT and Evaporating Cloud) to analyze business system and identify constraint(s) and conflict(s).

5) **Decide how to exploit the constraint(s)**: Use TP tools to determine how best to progress towards the goal within the given constraint(s).

6) **Subordinate everything else to the above decision(s)**: Adjust the entire business system to the constraint(s), i.e. maximize system throughput under the given constraint(s).

7) **Elevate the constraint(s)**: Use TP tools to develop a strategy for removing one or more constraint(s). Implement that strategy.

8) **Return to step 4 and beware of inertia**

Why is BSO an Improvement over Traditional BPO/BPR?

- A clear and logic TOC-based analysis increases knowledge of the business system as a whole
- All members of the business system can participate in BSO activities, regardless of rank or title, power, and politics
- Identification of constraint(s) reveal the true (hidden) problems within the business system
- Improvement projects focus on high leverage areas
- BSO allows to integrate all entities of the business system
- BSO is a process of continuous improvement
- Throughput world thinking ensures continuing growth in TVA
- TOC provides tools and conceptual background for BSO

PART II
Applying the Concept

Applying the Concept
The Company: DEG

- wholesaler of roof construction equipment
- mutual benefit association
- many customers are associates (i.e., owners)
- customers are buying at DEG and other sources
- DEG experienced problems with order fulfillment, customer satisfaction and unsatisfying market demand
- Instead of a traditional BPR/BPO a BSO was suggested to senior management
- Introduction of TOC thinking wit the BPR/BSO-CRT and a workshop on some basic concepts of TOC

The Eight-Step BSO Process at DEG
Step 1 – Define the Business System

- **System**: DEG's sales organization
- **Interfaces**: points of interaction with customers, suppliers and other parts of DEG
- **Traffic**: flow of goods, information, and money
- **System Owners**: DEG associates, direct control by DEG's senior management which in turn is controlled by a board of associates; the system owners' span of control exceeds the system, what allows us to work on constraints that possibly lie outside of this system.

The Eight-Step BSO Process at DEG
Step 2 – Define the Business System's Goal

The Goal of DEG's sales organization is to:

- generate revenue for DEG through the sales of DEG's products

The Eight-Step BSO Process at DEG
Step 3 – Determine Measurements

- **Prime measurement:**

  TVA := Sales – Totally Variable Costs
  Sales – Purchase Price

- **Necessary conditions:**
  - Accuracy of shipments (i.t.o. time, product, place)
  - Lead time for shipments from own warehouses
  - Customer satisfaction

The Eight-Step BSO Process at DEG
Step 4 – Identify the B. System's Constraint(s)

A CRT reveales some core problems:

- There is no clear, mandatory, and results-oriented description of processes (Entity 190)
- The IT system (especially the software) has reached its technical limits (Entity 300)
- The organizational structure is not results-oriented (Entity 17)

Step 5 – Exploit the Constraint(s) (I) Injection to Entity 190

- Develop a results-oriented, clear and mandatory description of business processes, taking into account all relationships with other entities of the business system, especially describing tasks, roles, responsibilities, organizational structure, and IT support of processes.

Step 5 – Exploit the Constraint(s) (II)
Injection to Entity 17

- Restructure the organization to make sure that decision-making power and execution are combined, that responsibilities are clear.

- Injections to 190 and 17 should make sure that the respective entities of the business system act together to satisfy the customers so that they continue doing (more) business with DEG.

Step 5 – Exploit the Constraint(s) (III) Injection to Entity 300

- A replacement of the IT system was only due in 2001 when DEG planned to merge its IT department with other companies of the same branch.
- The CRT has shown that only some changes to the IT system would be possible.
- All improvement efforts had to take into account that the IT-system would remain a significant constraint to the business system.

The Eight-Step BSO Process at DEG
Step 6 – Subordinate the Bus. System

- The insufficient IT-support of processes (entity 3) can not be totally removed

- A good elevation of entity 190 can reduce the impact of entity 3.

The Eight-Step BSO Process at DEG
Step 7 – Elevate the Constraint(s)

- Develop a plan to implement the changes
  (I.e., deploy the optimized business system)

- DEG started with two pilot sites,
  then rolled out to 25 locations across Germany

The Eight-Step BSO Process at DEG
Step 8 – Return to Step 4; Inertia!

- As the business system has been fundamentally changed (and will continue to change), it is necessary to analyze the new current reality and to start the next improvement circle

- DEG: Review workshop scheduled for May, 2000
- Agenda: develop (“new” CRT); address a larger business system

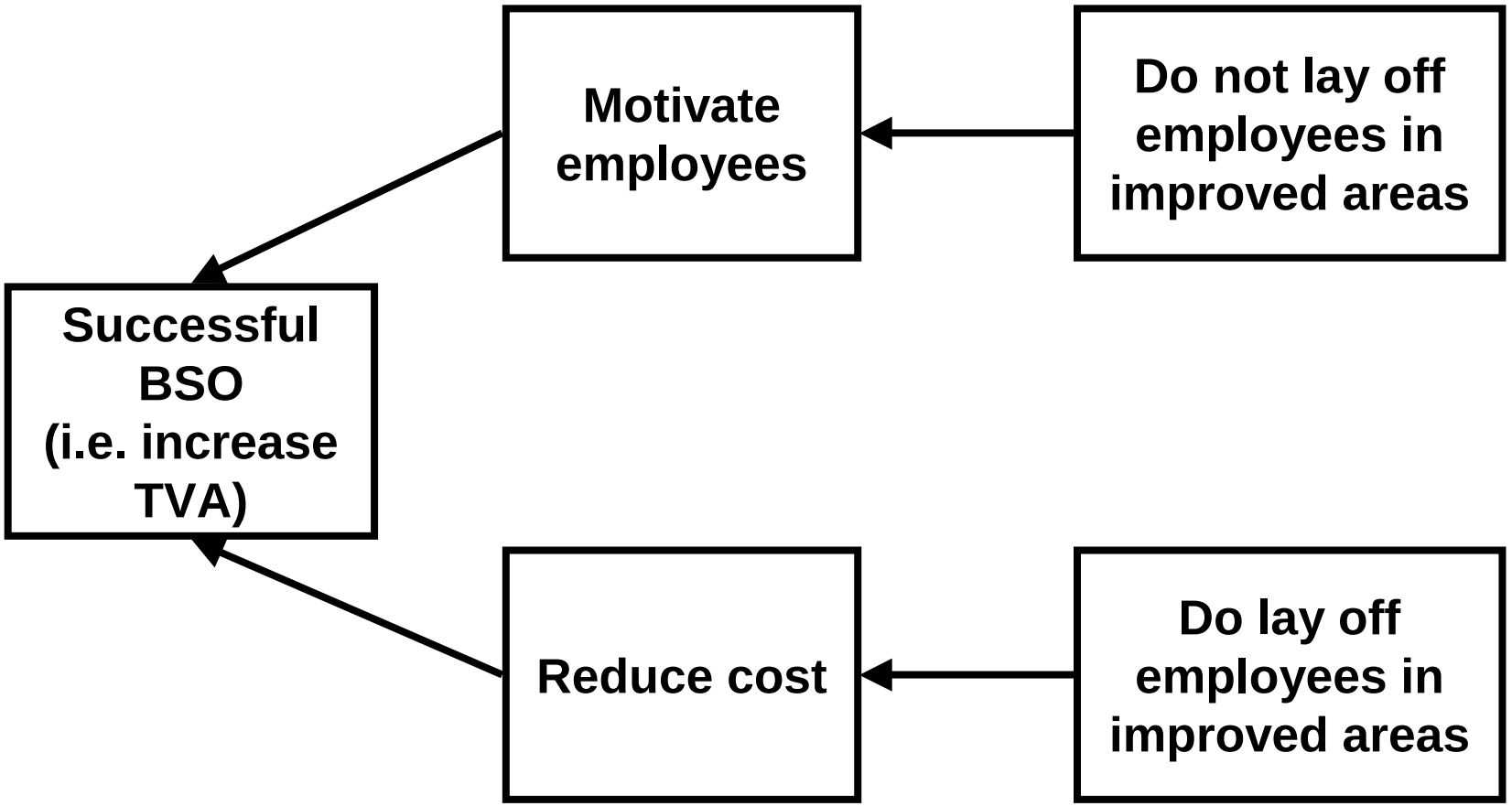
Benefits to DEG

- Business Case: about € 530,000 per year
- Duration of order fulfillment process (from customer's order to shipment) cut in half
- Additional sales (TVA) through:
  - Higher quality of shipments
  - Increased customer satisfaction
  - Higher motivation of employees
  - Better position in the market place

A Challenge Common to Many Change Projects...

- At an early stage the typical rumors appeared that people should be laid off
- Injection:
  - Use the CRT to explain DEG's situation and the scope of the BSO
  - Use Evaporating Cloud to show that there is no need to lay people off in order to improve bottom line results but rather to re-deploy them to sales and marketing departments in order to generate more sales and increase TVA

An Evaporating Cloud Shows that there is no Need for Lay-Offs



BSO at DEG: Types of Results

Type of Result	Content
Business System's Handbook	• **Description and explanation of CRT and injections** • **Description of entities important to the current improvement project** • **Description of future processes, tasks, roles, and organizational structure**
Changes to IT system	• **Specification of changes**
"Business Case"	• **Expected changes in TVA, quality, and durations**
Implementation Plan	• **Responsibilities, time line**
Communication Plan	• **Content (CRT, EC), responsibilities, time line, audiences**

