

# Gutenberg and Beyond

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2001 Constraints Management Technical Conference

San Antonio, TX, March 19 – 20, 2001

## Today's Agenda

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- Some thoughts, observations, and two clouds

- Constraints-Based Management Approaches in Germany:
  - ◆ Erich Gutenberg and the *Law of Balanced Planning*
  - ◆ Wolfgang Mewes' *Constraints-Focused Strategy*

- Bringing it all together

## Some thoughts and observations...

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- The market does not have sufficient awareness of TOC: marketing is the constraint [Eli Goldratt]
  
- Eli's flying pig injection:
- many large and respected companies (ERP-industry) aggressively push TOC to the market

## Some thoughts and observations...

### From recent CMSIG-list postings

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- The professors who churn out MBAs by the hundreds are still largely ignorant of TOC [Tony Rizzo]
- A respected professor at MIT... said that TOC is seen as not having enough of a theoretical underpinning to warrant study at major universities. [David Gilbert]
- TOC looks like common sense to [academicians] - they do not see themselves as teaching people common sense. They see themselves as teaching people the forefront, fringe knowledge that only a "select few" are privy to or have the "cognitive power" to understand.... [Mark Murphy]

## Even more observations...

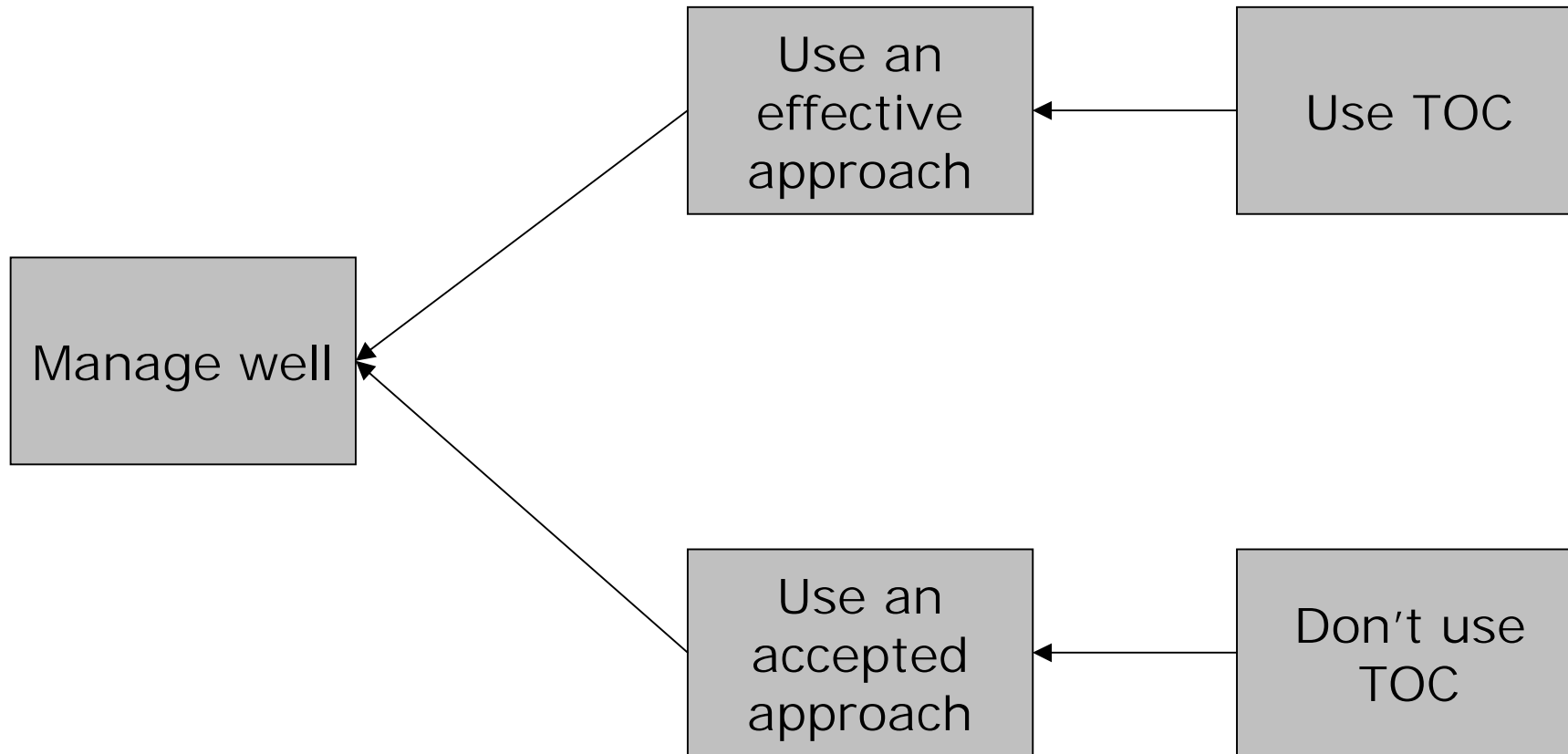
### How TOC is perceived...

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- “a cult – not a science”
- “not scientifically sound”
- “just commons sense”
- “has a difficult language”
- Some concepts are difficult to understand
- Professors don't like to work with novels
- “just another management fad from the US”
- “you can't call that a theory”

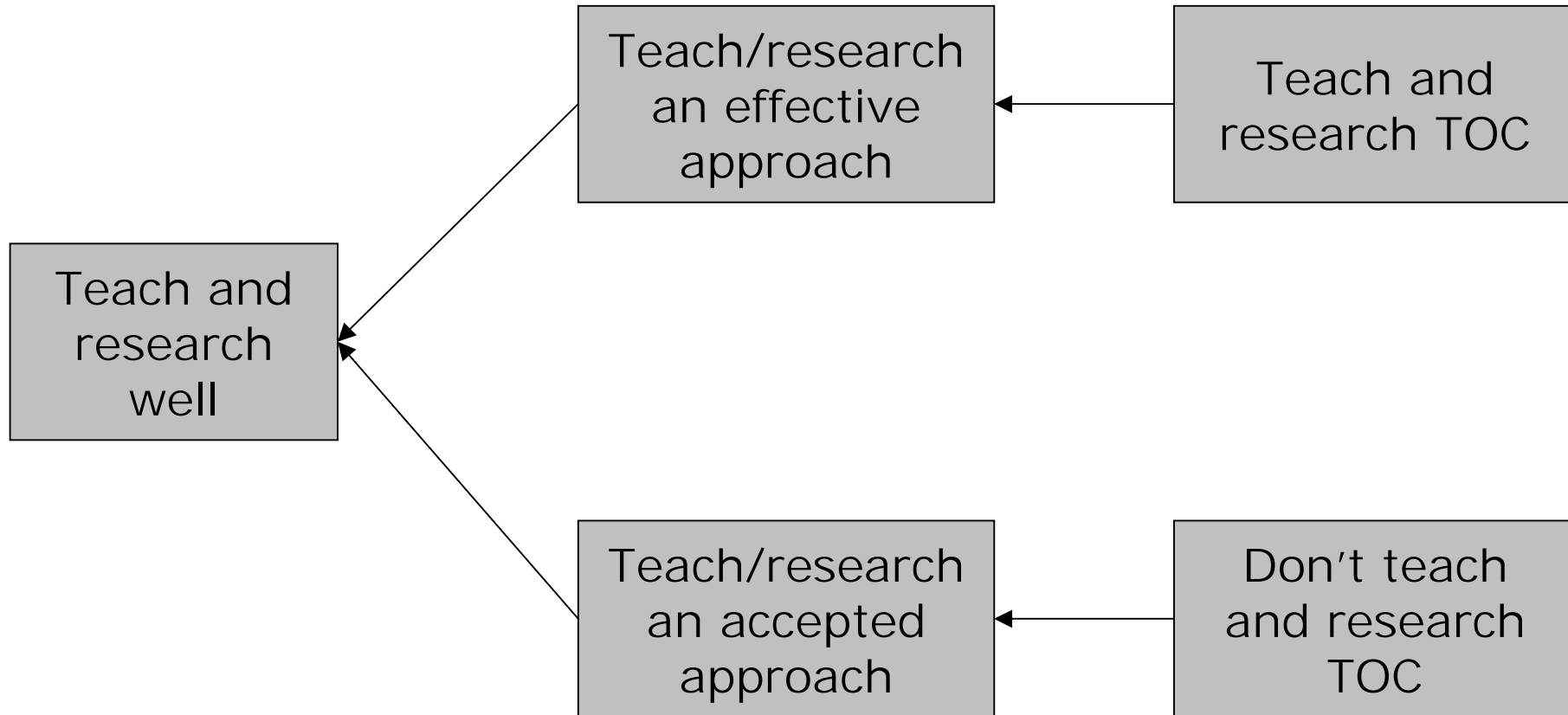
# A Manager's Cloud...

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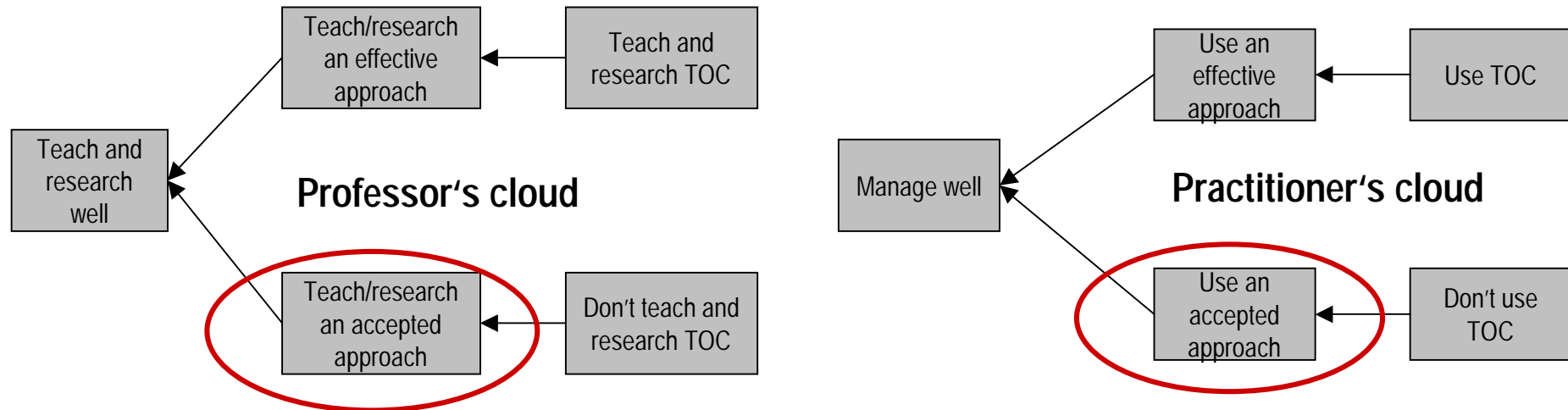


# A Professor's Cloud...

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## And an Injection... Improve Acceptance of TOC by...



- Comparing TOC to constraints management models that are accepted by scientific and business communities
- Showing that and how TOC is
  - ◆ built on sound scientific ground
  - ◆ more than *just common sense* (etc.)
  - ◆ in line with generally accepted approaches



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## Where did Gutenberg come from?

### The Science of Management and Business Administration

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- The firm is a system of interdependent departments
- Research should focus on the firm as a whole
- Local optima must be adjusted to the global optimum
  
- Study the entire firm and develop a theory of the firm
  - ◆ Analyze interdependencies between departments
  - ◆ Discover principles governing the relationships between the entities
  - ◆ Apply methods of scientific managerial and economic research
  - ◆ Solve the problem of interdependencies and global optimization

## Gutenberg's Legacy

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1. A firm should only act upon a practice that has been scientifically tested and proven
2. The firm as a whole must remain the focus of research in management and business administration

# The Law of Balanced Planning

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- Proposed by Gutenberg in 1951 as *Ausgleichsgesetz der Planung*

**A firm has to adjust its entire performance to a *Minimum Sector***

1. Physical constraints on a departmental basis
2. Problem of coordination:
  - ◆ taking into account the bottlenecks while minimizing unused potential
  - ◆ i.e., to harmonize all departments and reach a global optimum
3. Short- and long-term implications

- The *dominance* of the Minimum Sector:
  - adapt all planning activities to the Minimum Sector (subordination)
  
- How to identify the Minimum Sector(s)?:
  - mathematical planning algorithms and operations research methods

- *Harmonization* of all sectors:
  - ◆ Elevate the Minimum Sector
  - ◆ Reduce the over-dimensional sectors
  
- The Minimum Sector moves around until all sectors are harmonized
- No stability even in the short term (changes in environment and departments)
- Short-term planning has to adapt frequently
- Direction of long-term planning is not always obvious

# The Law of Balanced Planning:                      Synthesis

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- Treats constraints on a departmental basis
- Total and stable harmonization is impossible
- No tools/approaches for implementation available
- No general purpose planning process available
  
- The Law of Balanced Planning is:
  - ◆ considered to be an indicator for action rather than a generic plan
  - ◆ a general approach for removing constraints within a high-level planning process
  - ◆ usually applied to problems in production
  - ◆ taught in universities and business schools as an introduction to planning in general
  - ◆ totally accepted among academiae and practitioners

# The Law of Balanced Planning and the Theory of Constraints

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- Both share the same basic philosophy:
  
- An organization/a firm:
  - ◆ is a system of interdependent sectors or entities
  - ◆ has a goal
  - ◆ has a Minimum Sector or a constraint
  
- The Minimum Sector/constraint limits the progress towards its goal
- LoBP has no generic planning or improvement process, but it implies one that is similar to TOC's five focusing steps



# Comparing the Law of Balanced Planning's and TOC's Processes for Improvement

<b>TOC's Five Focusing Steps</b>	<b>Gutenberg's Law of Balanced Planning</b>
0. Identify the system and its goal	System: the firm with its goal. Usually the following departments are considered: procurement, production, sales & distribution, and finance. However, the LoBP is also applicable to any other combination of entities
1. Identify the constraint	Find the Minimum Sector, if necessary using the first loop of a successive planning approach
2. Decide how to exploit the constraint	No exploitation
3. Subordinate everything else to that decision	Mathematical planning algorithms or other methods are used to adapt all departments to the performance of the Minimum Sector (short-term implications)
4. Elevate the constraint	Elevate the Minimum Sector(s) to the level of the over-dimensioned sectors and/or reduce the capacity of the over-sized sectors (long-term implications)
5. Go back to step 1 but avoid inertia	With the next planning loop the process starts over again

# Integrating Law of Balanced Planning and TOC

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- TOC could benefit:
  - ◆ LoBP proves that a solid scientific foundation exists
  - ◆ Increase acceptance of TOC among academia and others asking for scientific proof
  - ◆ Gutenberg's origin might help spreading TOC in Europe, especially in Germany
  
- TOC is the ideal management system to put the LoBP into practice:
  - ◆ TOC delivers the necessary tools
  - ◆ The Five Focusing Steps and the Thinking Processes help to overcome the problems associated with identifying the Minimum Sector and the mathematical algorithms
  - ◆ TOC can expand LoBP's application towards general purposes (policy constraints)

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## *Engpass-Konzentrierte Strategie (EKS) – Constraints-Focused Strategy*

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- A strategic approach to management, especially marketing and business development
- Strategy := focus the employment of all resources on the leverage point
- Based on system thinking
- Identifies external constraints and provides guidelines for continuous improvement
- Outside-focus to find opportunities that exist within in the market
  
- Created in the 1950s and offered as distance-learning course since '72
- More than 70,000 people trained in (German-speaking) Europe
- Successfully applied among a wide range of SME
- Taught at German universities (Stuttgart, Halle, and others)

# EKS Marketing: The *Cybernetic Upward Cycle* and the Attractiveness of Market Leadership

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# Liebig's Law of Growth and the Principle of Interdependent Systems

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*That nutritive substance that is lacking most to a plant determines its growth*

- The farmer focuses his efforts on the constraint:
  - ☛ he only needs to fertilize with the nutrient needed and he will improve the plant's growth and in turn his harvest
  - ☛ Fertilizing with anything else is a waste of resources which will not lead to any improvement
- EKS:
  - ☛ To increase customer value one only needs to focus on the customer's constraint, his *most burning problem*

## Implementing EKS– the Basic Ideas

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- Identify a well-defined segment of target customers
- Use all resources to only serve these customers
- Replace product loyalty by customer loyalty:
  - ◆ Analyze customers' needs
  - ◆ Stay with customers forever

## The EKS – Process

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1. Analysis of the current situation
2. Analysis of the most promising scope of business
3. Analysis of the most promising target market
4. Analysis of the *Most Burning Problem* of the target customers

5. Innovation strategy
6. Cooperation strategy

7. Lasting success by focusing on the constant basic need



## The EKS – Process: 1. – 4. Analyses

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1. Analysis of the current situation
  - Profile of competencies (strengths, but also weaknesses)
  - Compare to competitors and the market's demand
  - How do the customers value those competencies?
2. Analysis of the most promising scope of business
  - Where is the best fit between strengths and scope of business?
  - What tasks should ideally be treated with the own competencies?
3. Analysis of the most promising target market
  - Who has the highest need/demand for the company's offering?
  - Who is the most willing and likely to purchase it?
4. Analysis of the *Most Burning Problem* of the target customers
  - Analyze and weigh the problems of the target customers (their point of view!)
  - Concentrate on the customers' paramount problems

## The EKS – Process: 5. Innovation and 6. Cooperation

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**Innovation** = an offer to the target market that:

- solves the customer's most burning problem
- creates a competitive advantage by providing a better solution than those of the competitors
- should be lead by actual needs and not by technical state-of-the-art
- its cost should be absorbed by the company

At some point **Cooperation** with others might be helpful or necessary

- benefit from synergies rather than fight each other
- especially helpful for large-scale innovations

## The EKS – Process: 7. Focusing on the Constant Basic Need

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- The most burning problem will evolve over time
- However, in most cases, a basic need lies behind the burning problems
  
- The market leader focuses on this basic need
  
- Continuous improvement:
  - ◆ Repeat analyses
  - ◆ adapt and improve own offerings (Innovation and Cooperation)

## EKS – a Closer Look

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- Dependence from small market segments, economic cycles, and technology changes
- Any segment is vulnerable to attacks from standard products
- Economies of scale and learning curve effects may not be exploited

### **But:**

- Only a specialist can develop the advancement in capabilities and know-how, necessary to stay ahead of the competition
- Relying on core competencies is a proven concept
- The specialist becomes a partner of his customers
- A study of hidden champions reveals wide and successful usage of EKS (ADAC, MLP, Kärcher etc...)

## Strategic Marketing the TOC-way: The *Unrefusable Offer*

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- An offer so attractive to the customer that he can not refuse
- When all internal constraints have been removed, creating the marketing offer moves a marketing constraint back into the company's control
- Basic premise: A company markets solutions to its customer's problems (i.e., his core problems, his constraints)
- Use Thinking Processes to analyze the market's root causes, develop a solution and an implementation plan

## EKS and TOC

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- Like TOC, EKS promotes a shift to the throughput world by focusing on securing and developing future business (outside focus)
- Both reside on the basic principles of system thinking (interdependencies and a limiting entity)
- EKS primarily focuses on outside constraints, it has no method or process to deal with internal constraints
- Danger: a sophisticated marketing strategy on a weak backbone
- Including Five Focusing Steps in the EKS process should lead to similar results: Innovation  $\approx$  *unrefusable offer*

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# The Law of Balanced Planning and TOC

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## The Law of Balanced Planning:

- is a law governing planning in general
- recognizes the need for a holistic view of the firm and global optimization
- can be applied as a high-level, generic process for identification and removal of system constraints, similar to the Five Focusing Steps
- emphasizes the concept – TOC emphasizes practical results

## TOC

- seems to ideally supplement LoBP, supplying
  - ◆ Necessary tools
  - ◆ A wide range of generic applications
- is fully compatible with the proven and accepted concept of LoBP



## EKS and TOC

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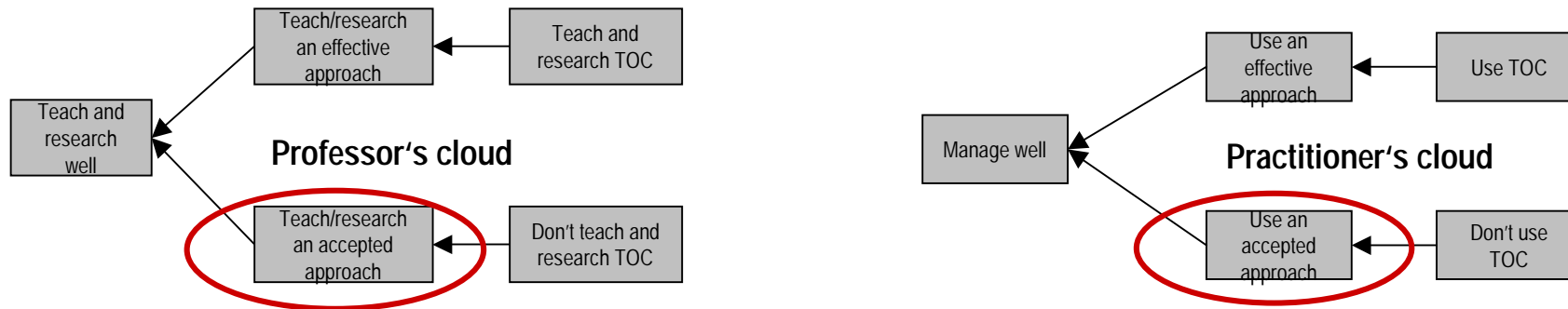
### EKS:

- promotes throughput rather than cost world thinking
- resides on system thinking and existence of a constraining element
- starts from an outside constraint – TOC first removes internal constraints
- can be an alternative way to develop the Unrefusable Offer *after* internal improvements

### TOC:

- is fully compatible with the Principle of Interdependent Systems and Liebig's Law of Growth
- tools can improve the EKS – process
- can improve and expand EKS
- could develop generic solutions in career and personal development

## Evaporating the Clouds...



### TOC:

- is fully in line with proven and accepted concepts such as the Law of Balanced Planning, Liebig's Law of Growth, and EKS
- is more than just *common sense* (etc.), but built on sound scientific ground
- should therefore be considered as an accepted approach
- has a set of powerful tools and a wide range of generic applications
- helps applying, improving and widening the range of applications for LoBP and EKS