

QuiStain®able Business Solutions

UWE TECHT

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# GOLDRATT AND THE THEORY OF CONSTRAINTS

# The Quantum Leap in Management

*ibidem*

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## Preface

Both managers and employees in today's business landscape are faced with a competitive situation that is evolving ever more rapidly. In times where "time to market" and the shortening of product life cycles play an important role, we are looking to find solutions for these types of problems. This can play a central role in the success of an organization.

Both traditional and more recently developed optimization concepts will often have been applied already. "Best practice" and "lessons learned" concepts are also widely being used. So which options remain to get ahead?

A true quantum leap in terms of productivity can only be attained through innovation. The "Theory of Constraints" (ToC) by Dr Eliyahu M. Goldratt offers the means of discovering and applying these innovative ideas. This book by Uwe Techt offers a great overview as well as practical tips for using the "ToC" to shorten project duration in a practical setting.

As well as successfully and entertainingly conveying the theoretical foundations of the ToC, the author highlights the possible pitfalls of traditional approaches. As an example, let us mention his observations on "Throughput vs. Cost," where Uwe Techt offers the reader new perspectives by providing many interesting new ways of looking at the situation. An important element of this change of perspective is the human component, which is incorporated in the ToC as a central success factor, both in the role of client and as an employee.

A reader who engages with this book will be surprised after only a short time to find that it has ended. At this point you will realize that you have only had an initial introduction into the subject

matter. There will still be some way to go from “I know how this works” to “I can actually do this.” Personally I have started applying the ToC principles in practice after finishing this very interesting book by Uwe Techt, and will be using them more in the future.

I hope you enjoy reading the book.

Günther Jakobi

SYRACOM AG – “The Business- & IT-Architects”

## Why this book?

I often hear these questions from businessmen, managers, clients, workshop attendees, or readers of the Goldratt novels (*The Goal, It's Not Luck, Critical Chain*): “So what is this Theory of Constraints? How can it benefit me? What differentiates it from other management theories? Is there a summary somewhere allowing me to quickly understand the basics and its context?”

These are the questions this book aims to answer. Without pretending to be exhaustive. Without trying to be perfect. It merely provides an overview!

Is this what you are looking for? Then I hope you will draw enjoyment and new insights from reading this book.

Should you have any questions, comments, additions, or amendments, you can contact me at [uwe.techt@vistem.eu](mailto:uwe.techt@vistem.eu). I look forward to hearing from you!



## Acknowledgements

My deepest thanks to Dr Eliyahu M. Goldratt, who discovered the ToC, continually developed it along with many others, and unreservedly shared his complete knowledge in the public domain. Throughout many seminars, Eli Goldratt, Eli Schragenheim, and Oded Cohen (Director of Goldratt Schools) have given me deep insights both into their thinking and into my own, thus granting me progressive understanding and an ever deepening application of the ToC. Oded Cohen and Rudi Burkhard have repeatedly been there to answer my questions, with unequalled conciseness and speed.

Bettina Zürcher has made a lot of ToC-related information available in German for the first time.

My very special thanks go to Claudia Simon, who has laboriously created and revised countless visualizations, scoured the text for mistakes, and assisted me with editing.

Uwe Techt  
April 2015



## **What are the goals of the ToC?**

Here are some of the crucial questions a top manager needs to ask and answer again and again:

- What are my business goals?
- How can I reach these goals?
- Which strategies and which tactics should I employ?
- How do I set the right priorities?
- How do I keep an overview of everything?
- How can I make my business look after itself?

The ToC answers these questions in a tangible and concrete way, allowing you to develop a successful strategy for your company.

## **So what are the benefits to me?**

Applying the ToC benefits organizations of all sizes and from all kinds of industries. The ToC helps you in:

- increasing profit using your valuable existing resources;
- avoiding the decrease of capital through restructure and other savings measures;
- making changes and investments only in areas where they are absolutely necessary; concentrating your efforts on these and applying labor-intensive methods such as Six Sigma, TQM (Total Quality Management), Lean, or JIT (Just in time) only in those specific areas;
- ensuring that changes have no unforeseen consequences;
- convincing your staff of the necessity of these measures;
- quickly and effectively applying changes – to the whole of the organization;



- aligning product prices with your clients' value estimates, skillfully segmenting your market and deploying your capacities profitably;
- designing your products and services so that they solve your clients' most urgent needs, and thus gaining an invaluable competitive advantage;
- utilizing your production and logistical processes effectively to gain market shares;
- improving delivery reliability to nearly 100%;
- drastically reducing stock, delivery, and turnaround times;
- reducing project durations by more than a half—without additional costs or reduced quality; and
- drastically speeding up market launch times.

## So who was Eli Goldratt?

Dr Eliyahu M. Goldratt was an Israeli physicist, management consultant, and author. He died in 2011 at the age of 62 years following a brief, but serious illness. He is the author of the following novels:

- *The Goal*—a novel about process optimization
- *It's Not Luck*—a novel about strategic marketing
- *Critical Chain*—a new concept in project management
- *Necessary but Not Sufficient*—a novel about profitable software solutions

as well as important nonfiction books on the ToC. His four novels are worldwide bestsellers in business literature and have been translated into numerous languages. Each of them set in motion a revolution in management and resulted in radically increasing performance with a direct impact on operating results.

## **How did the ToC come about?**

A manufacturer of chicken coops had great trouble keeping his delivery deadlines. He had a physicist friend who decided to help him get to the bottom of his problems. The physicist had no preconceptions of business processes. So he applied the scientific methods he was familiar with and found a solution that went against all known rules, but proved thoroughly successful. The physicist—Dr Eliyahu M. Goldratt—was so taken with this field new to him that he devoted himself to studying it systematically.

## **Why “Theory ...?”**

Scientists don't consider the theory to be the opposite of practice, but knowledge gained and secured through observation and verifiable experiences. Everyone who has experienced the effects of the ToC in their organization will agree with the Hungarian-American physicist and mathematician Todor Karman (1881–1963) who said: “There is nothing more practical than a good theory!”

## **“ ... of Constraints?”**

The term “constraint” originates in Systems Theory: A system is a totality of interdependent functions which convert input to output. A “constraint” is one of the very few factors limiting the system's performance: A constraint or the weakest link in a chain. The ToC applies these principles to business systems and uses the constraints as starting points for effective changes, as this is where the biggest leverage effect can be achieved: Changes to the constraint affect the whole organization.