

THE PRODUCTIVITY JOURNEY

TOC FOR LIFELONG GROWTH & SUCCESS



TOCICO 2019 INTERNATIONAL CONFERENCE

CHICAGO, IL | JULY 14-17, 2019

FOR MORE INFORMATION VISIT: WWW.TOCICO.ORG

DAY ONE – JULY 14TH, 2019 - AGENDA AT A GLANCE

8:00-8:45	Registration	Red Oak Foyer
8:00-8:45	Breakfast	Burnham Dining Room
8:45-9:00	Conference Opening and Board Chair Welcome <i>Dr. Lisa Lang - Chair of the Board</i>	Red Oak Ballroom
9:00-9:15	Sponsor Message	Red Oak Ballroom
9:15-10:00	Thriving on the Edge of Chaos, How Understanding Complex Adaptive Systems Adds to the TOC BOK and is a Natural Progression of Learning <i>Debra Smith</i>	Red Oak Ballroom
10:00-10:15	Sponsor Message	Red Oak Ballroom
10:25-12:25 Concurrent Sessions One	Simple Games to Experience How TOC Moves Us Along the Productivity Journey <i>Russ Johnson</i>	Red Oak B and C
	Selling Blue Ocean Projects <i>Humberto R. Baptista</i>	Trillium
	Even the Sky is Not the Limit – A Day with Dr K.; Part 1 <i>Kelvyn Youngman</i>	Bluestem
	What is Blocking the Real Potential of TOC? (10:25 to 11:25) <i>Lisa Ferguson and Mickey Granot</i>	Hazlenut
	TOC and DBR Basics Workshop - BASICS TRACK <i>Eli Schragenheim</i>	Red Oak A
	Why-Oh-Why Do So Few Managers Know About TOC? (11:25 to 12:25) <i>Ian Heptinstall</i>	Hazlenut
12:25-1:50	Lunch	Burnham Dining Room
	Exhibition Hall Opens	Red Oak Foyer
1:50-4:25 Concurrent Sessions Two	Med Lab Simulation: Applying TOC Concepts to a Complex Hands-on Environment <i>Russ Johnson</i>	Hazelnut
	Reality Engineering and Magic Druids <i>James Powell</i>	Red Oak B and C
	Even the Sky is Not the Limit – A Day with Dr K.; Part 2 <i>Kelvyn Youngman</i>	Bluestem
	Demand Driven Workshop <i>Debra Smith</i>	Trillium
	CCPM Basics Workshop - BASICS TRACK <i>Joe Cooper</i>	Red Oak A
4:35-5:20	Boaz Ronen and Shimeon Pass Frugal IT Management: the TOC Approach	Red Oak Ballroom
7:00 to 9:00	Opening Day Reception	Prairie River Restaurant and Patio



THE PRODUCTIVITY JOURNEY
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DAY TWO – JULY 15TH, 2019 - AGENDA AT A GLANCE

8:00-8:45	Registration	Red Oak Foyer
8:00-8:45	Breakfast	Burnham Dining Room
8:45-9:00	Morning Announcements - TOC 2.0: Introducing the Alex Rogo Levels <i>Kobus van der Zel</i>	Red Oak Ballroom
9:00-10:00	Embreat E-Jets E2 Program Development <i>Edy Aparecido, Priscila de Souza Oliveira, and Marcelo Tocci Moreiral</i>	Red Oak Ballroom
10:15-10:45 Concurrent Sessions Three	Re-Engineering and Creating Shareholder Value at a Diamond Mine Using Theory of Constraints (ToC) and Activity Based Costing (ABC) <i>Robert Bolton</i>	Trillium
	Retail Market Offer - Investment Banking <i>Alan Barnard</i>	Red Oak B and C
	IT2X: Pursuing Aggressive Improvement at Scale - (CS) <i>André Kriger and Michael Hannan</i>	Bluestem
	The Case Study of TOC Equity Partners - (CS) <i>Dr. Lisa Anne Ferguson and Henry Fitzhugh Camp</i>	Hazlenut
	Basic Supply Chain Management for newcomers to TOC; Part 1 BASICS TRACK <i>Eli Schragenheim</i>	Red Oak A
10:50-11:20 Concurrent Sessions Four	Basic Supply Chain Management for newcomers to TOC; Part 2 BASICS TRACK <i>Eli Schragenheim</i>	Red Oak A
	“Octopus for Coke Ovens” - A Productivity Innovation Case for Online Flue Temperature in Stamped Charged Coke Oven Operations <i>Abhishek Kumar and Ranjan Kumar Singh</i>	Trillium
	Paradigm Shift vs. Shifting Paradigm and its Application in Implementing DBR <i>Mickey Granot</i>	Red Oak B and C
	ViAGO and Goldratt UK Joint Venture Results <i>Andy Watt</i>	Bluestem
	Piaget and Goldratt: Structuralism and Subordination - Making TOC Work for You <i>Kelvyn Youngman</i>	Hazlenut
11:30-12:15	Achieving Viable Vision <i>Richard White, CEO WiseTech</i>	Red Oak Ballroom
12:15-1:50	Lunch	Burnham Dining Room
	Exhibition Hall Open	Red Oak Foyer
1:50-2:35	TOC Principles and JSPL <i>Sudhanshu Saraf, CEO, Jindal Steel; Power Ltd</i>	Red Oak Ballroom
2:45-3:25 Concurrent Sessions Five	Extreme DBR <i>Duncan Patrick and Jack Warchalowski</i>	Trillium
	A New TOC Decisive Competitive Edge (NK) <i>Henry Camp</i>	Red Oak B and C
	Software Development Going Beyond Agile with TOC <i>Fabio Roseiro and Humberto R. Baptista</i>	Bluestem
	TOC Consulting Best Practices, from the Client Perspective <i>Alejandro Fernandez</i>	Hazlenut
	Basic Supply Chain Management for Newcomers to TOC; Part 2 BASICS TRACK	Red Oak A

DAY TWO – JULY 15TH, 2019 - AGENDA AT A GLANCE CONT.

3:30-4:00 Concurrent Sessions Six	Using Dynamic Buffer Management (DBM) to Reduce Shortages and Surpluses in Book Publishers' Supply Chain - (CS) <i>Dr. Alan Barnard; JacoBen Vosloo; Janet Rache; Kyle Marx</i>	Trillium
	TOC Consultants' Adventure Through Cashflow Quadrant - (CS) <i>Mindaugas Voldemaras and Gediminas Balodas</i>	Red Oak B and C
	How to Tame a Dragon! Framing and Delivering a Complex and Highly Volatile Tech Project on Time in a Short Time with CCPM - (CS) <i>Andrew Kay and Daniel Heerding</i>	Bluestem
	Resolving the TOC (Balance Flow) vs. Lean (Balance Capacity) Conflict <i>Russ Johnson</i>	Hazlenut
	Basic Supply Chain Management for Newcomers to TOC; Part 2 BASICS TRACK	Red Oak A
4:00-4:35	Exhibit Hall	Red Oak Foyer
4:35-5:20	Tata Advanced Materials Ltd Workshop <i>Mr. SR Mukherjee, CEO</i>	Red Oak Ballroom
5:30-6:00	General Membership Meeting	Red Oak Ballroom
Evening Day 2 Fun Activities	Night Golf (9 Holes with lights/rentals); or Bowling (Three lanes reserved)	

DAY THREE – JULY 16TH, 2019 - AGENDA AT A GLANCE

8:00-8:30	Registration and Breakfast	Red Oak Foyer
8:00-8:30	Breakfast	Burnham Dining Room
8:30-8:45	Morning Announcements	Red Oak Ballroom
8:45-9:30	Using the Theory of Constraints to Solve Ill-Structured (Wicked, Chronic) Problems: A Healthcare Example <i>James Cox</i>	Red Oak Ballroom
9:30-9:40	Sponsor Message	Red Oak Ballroom
9:50-10:20 Concurrent Sessions Seven	Leveraging TOC in Texas Government – Our Productivity Journey <i>Alfredo Mycue</i>	Trillium
	How a doctor implemented TOC and improved his ophthalmologic practice over 50% in a few weeks <i>Gustavo Bacelar</i>	Bluestem
	A TOC Throughput Accounting Practice Case Study “Boosting sales, productivity and profits by 50% in less than 6 weeks and ongoing” Introducing Throughput Compression and a Pricing Decision Support Tool - (CS) <i>Andrew Kay</i>	Hazlenut
	Demand Driven Concepts <i>Christoph Lenhart</i>	Red Oak B and C
	Basics of Throughput Accounting Workshop; Part 1 - BASICS TRACK <i>Beau Ganas</i>	Red Oak A

DAY THREE – JULY 16TH, 2019 - AGENDA AT A GLANCE CONT.

10:25-10:55 Concurrent Sessions Eight	Utilizing TOC to Improve Sub-Recipient Monitoring at the Texas Workforce Commission <i>Jonathan Coneby</i>	Trillium
	Using TOC to Resolve Long-Standing Resource and Service Issues in a Large Public Hospital <i>Vicky Mabin</i>	Bluestem
	Cost is Not a Dirty Word: Bringing Procurement into the Throughput World - (HP) <i>Ian Heptinstall</i>	Hazlenut
	Project Management the TOC Way <i>Philip Marris</i>	Red Oak B and C
	Basics of Throughput Accounting Workshop; Part 2 - BASICS TRACK <i>Beau Ganas</i>	Red Oak A
11:05-11:15	Sponsor Message	Red Oak Ballroom
11:15-12:00	Viable Vision at Premier Foods <i>Ian Visser and Alan Barnard</i>	Red Oak Ballroom
12:00-1:25	Lunch	Burnham Dining Room
	Exhibition Hall Open	Red Oak Foyer
1:30-2:15	Why Management Attention Can Never be the Constraint and Why “Constraint” and “CCR” Must Always Be Synonymous <i>Justin Roff-Marsh</i>	Red Oak Ballroom
2:20-3:05	Three Complementing Views Coming from Three Different Perspectives of TOC; “Management Attention” as the Ultimate Constraint <i>Eli Schragenheim, Henry Camp, and Rocco Surace</i>	Red Oak Ballroom
3:15-3:45 Concurrent Sessions Nine	Tools and Techniques that Could Enable Your Vision for Improvement and Overall Operations <i>Alfredo Mycue</i>	Trillium
	How I Used TOC to Guide My Daughter’s Healing Through The Worst Disease You Never Heard Of - (CS) <i>Brian Delfield</i>	Bluestem
	The Invisible Made Visible: Understanding, Challenging and Expanding Fundamental Processes - the Focusing Steps - through the Strategy and Tactic Tree. <i>Humberto R. Baptista</i>	Hazlenut
3:15-5:05 Concurrent Sessions Ten	Advanced Throughput Accounting Workshop <i>Beau Ganas and Brad Stillahn</i>	Red Oak B and C
	Thinking Processes Basics - BASICS TRACK <i>Vicky Mabin</i>	Red Oak A
3:45-4:30	Exhibit Hall	Red Oak Foyer
4:35-5:05 Concurrent Sessions Eleven	Hi-Heat Industries, Inc. Case Study <i>Debra Smith</i>	Trillium
	New Insights on Good Constraints and Bad Constraints Through the Eyes of TOC and the Cynefin Framework - (NK) <i>Steve Holt and Russell Field</i>	Bluestem
	Better Than Before (B2B) <i>Ravi Gilani</i>	Hazlenut
5:15-6:00	Case study on the consumer products division of Bajaj Electricals Ltd	Red Oak Ballroom
6:30-9:00	Award Banquet	Pavillion

DAY FOUR – JULY 17TH, 2019 - AGENDA AT A GLANCE

8:00-8:30	Registration	Red Oak Foyer
8:00-8:30	Breakfast	Burnham Dining Room
8:30-8:45	Morning Announcements	Red Oak Ballroom
8:45-9:45	Gerald Kendall: Impact	Red Oak Ballroom
9:50-10:35	Building on the Legacy of Eli Goldratt Where is TOC today? Where will TOC be tomorrow?	Red Oak Ballroom
10:45-11:15 Concurrent Sessions Twelve	Increasing Productivity Through Use of Day-to-Day Thinking Process Tools <i>Kathy Austin</i>	Red Oak B & C
	Academics Round-table Meeting	Hazlenut
	Open to Buy – Friend or Foe? <i>Fabio Roseiro and Humberto R. Baptista</i>	Trillium
	Prescription for Growth: Building a Sales Machine to Out-communicate your Competitors; Part 1 <i>Justin Roff-Marsh</i>	Red Oak A
11:20-11:50 Concurrent Sessions Thirteen	Healthcare Round-table Meeting	Hazlenut
	Mind Your Mind - (NK) <i>Deepak Sethi</i>	Trillium
	Accelerating Results - Integrating TOC, Lean, and Six Sigma to Achieve Leadership Alignment and Buy-In <i>Max Krug</i>	Red Oak B and C
	Prescription for Growth: Building a Sales Machine to Out-communicate your Competitors; Part 2 <i>Justin Roff-Marsh</i>	Red Oak A
11:50-1:05	Lunch	Burnham Dining Room
	Exhibit Hall	Red Oak Foyer
1:05-1:35 Concurrent Sessions Fourteen	Improving Quantitative Reasoning Skills One Student at a Time - (NK) <i>Danilo Sirias</i>	Trillium
	Murakami Japanese and TOC, POOGI Start from “Harmony Building” - (CS) <i>Satoru Murakami</i>	Red Oak B and C
	Government Round-table Meeting	Bluestem
	Fast Tracking a New Product in Finance - (HP) <i>Robert Bolton</i>	Hazlenut
	Prescription for Growth: Building a Sales Machine to Out-communicate your Competitors; Part 3 <i>Justin Roff-Marsh</i>	Red Oak A
1:45-2:15	Best Marriage, TOC and Digital Technology <i>Kaoru Watanabe</i>	Red Oak Ballroom
2:15-2:30	Conference Closing	Red Oak Ballroom



**THE PRODUCTIVITY
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TOCICO 2019 Session Descriptions

Day One: July 14th

Debra Smith

Thriving on the edge of chaos, How understanding Complex Adaptive Systems adds to the TOC BOK and is a natural progression of learning.

Russ Johnson

Simple Games to Experience How TOC Moves Us Along the Productivity Journey

It's one thing to read, or hear a lecture, about a concept. It's a completely different thing to actually experience it. To experience is to know. There are many basic underlying concepts in the Theory of Constraints as well as Six Sigma, Lean and other management concepts that are common in their key foundational elements. Some of these are the relationship of variation and dependency and, the crushing effect of excess work in process on system flow and output. In many of our presentations and papers we talk about many of these ideas and even reference some of the games such as the dice game in The Goal yet often times the members of the audience have never had the opportunity to actually experience these games, the concepts they convey and experience the results. This workshop will make use of simple games and exercises to allow participants the opportunity to explore hands-on, how many of our management driven policies, procedures, measurements and/or behaviors trigger actions that consume our precious and expensive capacity. Participants will experience how some simple TOC based actions can yield significant, immediate and positive results. The exercises allow the participants to discover underlying capacity burning issues that exist in our organizations. They will provide the participant with tools to take back to their organizations to help their peers experience the same discoveries.

Humberto R. Baptista

Selling Blue Ocean Projects

Since the publishing of The Goal, TOC can be seen as a solution or a path to a Process of Ongoing Improvement (POOGI) that, if properly executed, allow organizations to develop and execute a Blue Ocean strategy, effectively becoming Ever Flourishing companies. In order to do so there are a number of challenges inside the organizations and these are dealt with by many advances and knowledge developed in the TOC community. The role of consulting companies as agents of change and change management is a crucial one as it is rare to encounter management and ownership capable of incorporating the vision, the commitment and the technical TOC expertise needed to execute such projects without help from external agents. Therefore, it is important to reinforce the TOC Consultancy capabilities to sell and deliver Blue Ocean Projects. In this workshop, we will present and discuss a Strategy and Tactics tree (S&T) detailing all the steps from the first meeting with a suitable decision maker to the final sale of the project to measuring and controlling of the execution and its remuneration. What are the requirements on each step, how the process can be tailored and what are indispensable assumptions and the key success factors for successfully selling holistic projects or Blue Ocean Projects will be covered.

Kelvyn Youngman

Even the Sky is Not the Limit – A Day with Dr K.

Join me in a one-day tacit learning experience that will position you perfectly to understand the underlying principles and full benefits of Theory of Constraints.

- Learn about variation through Shewhart's dice simulation and the impact of tampering in the same system through Deming's dice experiment. Neither of these gentlemen used dice as such but that should not stop us from doing so.
- Learn about the precarious existence, life, death, and independence of vampire bats through the vampire bat simulation. Similarly learn how cooperation, communion, and interdependence in exactly the same environment allows us to operate in a way that even the sky is not the limit.
- Experience the full implications of Goldratt's dice simulation from The Goal for the first time.
- Experience my own waste reduction simulation and capacity improvement simulations.

Each of these experiences is supported by further group discussion and exploration of simple interactive Excel models that allow us to examine in more detail the step-wise nature of improvements and the subtleties of DBR and S-DBR. There are also godwits and great white sharks, Ötzi the iceman, Scientific Management, Taylor and highspeed steel, the demise of hunter-gatherers, the triune brain, the role of human consciousness, and even more on vampire bats. Learning should be fun. Let's do it.

Lisa Ferguson and Mickey Granot

What is Blocking the Real Potential of TOC?

What is limiting the success of TOC in individual applications (personally and professionally) and in becoming the main way of managing organizations, even for TOC experts? Since Dr. Eli Goldratt passed away eight years ago, TOC has continued to struggle in its spread, unexpectedly so, for top TOC experts and TOC-managed organizations. While it is true that some significant successes have happened during this time, the full potential has not been realized. Unfortunately, it seems this challenge continues to be all too common. The TOC community is fractured. Without Eli's leadership and support, much less collaboration and effective performance have resulted. We intend to spend the day working with the audience (which is not limited by volume or expertise requirements) to understand how we can embark on a track towards realizing the true potential of TOC for individual happiness and success, as well as organizations becoming ever-flourishing (by sustaining exponential growth, stability and harmony).

TOCICO 2019 Session Descriptions

Day One: July 14th

Ian Heptinstall

Why-oh-why do so few managers know about TOC?

The aim of this Hyde Park session is to capture, in a structured way, the thoughts of attendees about why TOC is an also-ran in the field of management and organisational improvement methods. It seems the power of TOC is not reflected in its popularity. The discussion is not about using TOC it is about knowing. The hypothesis is the more people know about its methods, the more are likely to actually use it. I don't mean have read The Goal, that is insufficient. This is a topic that has troubled the TOC community member for decades. Eli Goldratt wrote Letter 14 in the POOGI Forum series on this very topic. That was over 15 years ago, and many would say that not much has changed since. Since this would no doubt be a topic of discussion over meals and drinks at the conference, I thought it would be good to put it on the agenda and use it to gather input for the TOCICO committee. We will present two short inputs on our prognosis, based on our different perspectives. And then facilitate comment, argument, and other ideas.

Russ Johnson

Med Lab Simulation: Applying TOC Concepts to a Complex Hands-on Environment

Common complaints directed at simulations and games are that they are focused on manufacturing and are often perceived to be too simple to be representative of the real world. The med lab simulation was created to address just these issues. Although it was designed to represent a service environment, it has been used with microbreweries, manufacturers, hospitals and many other entities. It represents an environment with high uncertainty relative to workload from day to day, very restrictive work requirements and the use of multiple shared resources that are in limited supply. There are also response time limits and shelf life limits. There are roles for schedulers, certified test technicians, assistant technicians, test transfer specialists, quality control, apparatus managers, etc.. The roles and rules of the simulation are explained and then round one commences with a 20 minute experiment. This is followed by the participants working in small groups to identify what is wrong and what they would recommend be changed to fix the situation. This is followed by a short introduction to key TOC concepts such as the five focusing steps and the need to choke the release a work into the system, Simplified Drum-Buffer-Rope, etc. The group then works to come to consensus and apply the TOC concepts to fix the situation without adding resources or any other changes that would represent significant financial investment and/or process interruption in the real world. It's one thing to read, or hear a lecture, about a concept. It's a completely different thing to actually experience it. To experience is to know.

Boaz Ronen and Shimeon Pass

Frugal IT Management: the TOC Approach; Red Oak Ballroom

Software development is a key pillar in most organizations, small or large. In many cases it constitutes one of the highest share in the organizations' budget. This puts development departments and software developing companies in a great challenge being a Permanent Bottleneck that blocks organizations' performance. The presentation will focus on increasing the value created by the IT department. We will show that this can be achieved using TOC-based non-conventional concepts by doing less and getting much more. We will demonstrate concepts such as Rolling Strategic Gating as opposed to the traditional annual budgeting and portfolio management. We will present cases on how to cope with the over-specification and over-design phenomena. The Frugal IT Management can serve both software developing companies as well as any IT departments.

Edy Aparecido, Priscila de Souza Oliveira, and Marcelo Tocci Moreiral

Embraer E-Jets E2 Program Development

Embraer built a heritage out of challenging the impossible. The typical cycle of the development of a new Aviation Program is 7 to 9 years. The E2 Program is not only a new airplane, but also a new industrial architecture, a new supply chain, a new and more connected airplane for passengers, operations and maintenance, a new marketing plan and a new socioeconomic improvement enabler. The Theory of Constraints has been applied, making effective use of the Critical Chain. Deviations have been reported through a simple color code (green, yellow, and red). The bike race image has been used so everyone challenged to work a little bit faster and a buffer at the end of the Program accommodated unexpected delays. The Program Management team would focus all of its energy on supporting the last bikes (constraints) always using five steps focusing. The greatest achievement of the E190-E2 Program was proving that it is possible to deliver a new airliner two months ahead of a very challenging original schedule (5 years from Business Plan Approval/Program Launch to First Revenue Flight), on a very tight budget and better than the most competitive spec in its crossover jet category, with a mature entry into service.

Robert Bolton

Re-Engineering and Creating Shareholder Value at a Diamond Mine using Theory of Constraints (ToC) and Activity Based Costing (ABC)

Eduardo Telles, Prof. Daniel Pacheco Lacerda, D.Sc, and Profa. Maria Isabel Wolf Motta Morandi, D.Sc. Drum-buffer-rope in an engineering-to-order system: An analysis of an aerospace manufacturer using data envelopment analysis (DEA)

TOCICO 2019 Session Descriptions

Day Two: July 15th

André Kriger and Michael Hannan

IT2X: Pursuing Aggressive Improvement at Scale - (CS)

In April 2017, I was appointed CIO of VIVO, the largest telecommunications firm in Brazil, with zero experience as a leader of IT Projects organizations, and zero experience with TOC. Within three months, my leadership team and I had decided that blending the TOC Thinking Processes, Critical Chain, Agile, and Lean offered the best solution direction to pursue significant improvement of our 6,000-person IT project portfolio. We established an aggressive goal of doubling the throughput of project completions, and branded our improvement initiative accordingly as IT2X. This purpose of this presentation is to share VIVO's progress towards this objective, as well as key challenges and obstacles and how we are overcoming them.

Dr. Lisa Anne Ferguson and Henry Fitzhugh Camp

The Case Study of TOC Equity Partners - (CS)

What is limiting the success of TOC in becoming the main way of managing organizations, even for TOC experts in TOC-managed organizations? TOC Equity Partners (TOCEP) is the case study being analyzed to further our insight into how TOC-managed organizations can become ever-flourishing (by sustaining exponential growth, stability and harmony). TOCEP is focused on buying, improving with TOC and selling (several years later) Supply Chain organizations (retail, manufacturing and distributors). The three managing directors of the organization all had some degree of TOC knowledge and skills, with the exception of Henry Camp who has a very high level of TOC expertise. Dr. Ferguson provided consulting services to TOC Equity Partners in 2013 for about six months resulting in the creation and validation of its Transformational Strategy and Tactic Tree (TSTT) to level 3. Performance dramatically improved during that time, yet that TSTT was not fully utilized, nor were the lower levels of it completed as agreed. She continued for years to try to influence the changes needed, even bringing in Eli Schragenheim to team up with Henry and her. This presentation focuses on understanding that even though TOCEP has been flourishing, it was still not to the degree possible had the TSTT and other key TOC concepts been fully embraced.

Eli Schragenheim

Basic Supply Chain Management for newcomers to TOC; BASICS TRACK

A one-day workshop for newcomers to lead through the basic methodology of TOC for any supply chain. From the Five Focusing Steps, Drum-Buffer-Rope, Simplified DBR, including the Buffer Management, Planned-Load, Make-to-Availability, Replenishment, Virtual buffers, etc.

Abhishek Kumar and Ranjan Kumar Singh

"Octopus for Coke Ovens" - A Productivity Innovation Case for Online Flue Temperature in Stamped Charged Coke Oven Operations

Coke (used as fuel in Blast furnace) is produced in Coke Oven Batteries which consist of alternately arranged heating walls and Ovens. For efficient process, optimal heat distribution over the entire heating wall is essential which necessitates the measurement of temperature. It is done manually in 3 shifts by 3 persons daily, directly from the oven top by opening the flue caps to measure temperatures with the help of a hand-held pyrometer in harsh environment. Given that steel industry is labor intensive, manpower productivity has been at the forefront in all policy making and Tata steel is making concerted efforts in this direction. Present case explains the application of TOC in achieving the objective of improving manpower productivity at Coke Ovens. As surfaced in Core conflict cloud, it is evident that deploying more manpower provides the advantage of frequent update of data while increasing the risk involved in safety. Therefore, any underlying assumptions which give rise to the conflict should be addressed to derive suitable injections. The conflict of deployment of manpower was resolved by identifying a new win-win solution. The Innovative injection has a huge potential (patent filed) and has a scope of wide implementation across industries.

Mickey Granot

Paradigm Shift vs. Shifting Paradigm and its Application in Implementing DBR

TOC solutions require people to go through paradigm shifts. Paradigm shifts are extremely challenging to adopt, to implement and to sustain as they require people to give up on their intuition and past experience and mostly to trust that the change agent can safely take them from the existing paradigm to the new one. The natural people turnover in organizations further enhance this challenge. What if it was possible to shift people paradigms without taking them through a paradigm shift, but rather through a series of changes that they have high level of certainty are required, that they chose based on their existing experience and intuition, that everyone relevant in the organization believes that the change is required and correct and that after a number of such changes the paradigm practically shifted? In this workshop we will examine the possibility of having such a process, how to apply it to different levels of the company and demonstrate how using it in production unavoidably leads from existing paradigm to the DBR paradigm.

TOCICO 2019 Session Descriptions

Day Two: July 15th

Kelvyn Youngman

Piaget and Goldratt: Structuralism and Subordination - Making TOC Work for You

Jean Piaget, the Swiss developmental psychologist and polymath defined structure as: wholeness, transformation, and self-regulation. Theory of Constraints 5-step focusing process consists of two different logical levels: (1) exploitation and (2) subordination and exploitation. Both are consistent structures within themselves. We most often fail when we concentrate on exploitation at the expense of subordination, this is part of the old paradigm. Theory of Constraints becomes truly transformative when we concentrate on subordination first, the remainder of the system becomes self-regulating. This presentation explores the gap that exists between different logical levels; first with examples from the natural world, secondly with similar examples from our industrial and organizational world, and finally Theory of Constraints in more detail. Several of the key enabling actions, and several of the key disabling reactions are then examined.

Richard White

Achieving Viable Vision

In this rare appearance, WiseTech CEO Richard White will discuss his journey from starting in his garage to achieving the Viable Vision multiple years in a row.

Sudhanshu Saraf, CEO, Jindal Steel & Power Ltd

TOC Principles and JSPL

Recently promoted to CEO, Mr. Saraf will tell the story of how he applied TOC principles and transformed JSPL.

Duncan Patrick and Jack Warchalowski, CMS Montera Inc.

Extreme DBR

This presentation will highlight two different manufacturing environments where implementing T-DBR was absolutely critical because the constraint was internal and order sequence mattered. In these environments, implementing S-DBR would have negatively impacted throughput and due date performance. Sequencing and scheduling mattered the most. In fact, the amount of work required to precisely schedule the critical resources (the Drums) was so demanding that we refer to these two implementations as examples of Extreme Drum-Buffer-Rope (X-DBR). The bulk of the presentation will be spent on sharing our thought process as we tried to understand the problem and design the direction of the solution in two environments characterized by very high dependence. In addition, we will highlight the Drum Hours Lost measure of buffer management that we introduced to further increase throughput.

Henry Camp

A New TOC Decisive Competitive Edge (NK)

Objective: To share a general solution for a major problem of manufacturers, particularly for Aggregating Manufacturers (A-Plants) and how one of their suppliers can capitalize on resolving it. The opportunity: There is a \$10 trillion dollar in sales world market that desperately needs a solution that is already well developed within the TOC community. The problem for A-plants is: if even one raw material is missing the production is delayed. If only all suppliers to this industry were TOC companies, the problem of shortages would already be solved. My estimation is that the direct annual fees from helping this market would be \$40 billion plus \$10 billion in secondary services. Tertiary effects from an improving world economy, I leave to others to calculate.

Fabio Roseiro and Humberto R. Baptista

Software Development Going Beyond Agile with TOC

Significant advance has been made in the field of software development with the introduction of Agile and Scrum. Both seek to introduce a mindset of flow and also handle the intrinsic problem of scope variance that exists in software development. Despite the significant success Agile (and Scrum) have lived with significant limitation that have not yet being solved: the difficulty to determine and deliver to specific due dates, the ways each sprint can be used to pressure resources to be locally optimized and the inducing of batches (each sprint) that work against the principles of flow. In this presentation, we will present a solution that implements the flow principles to the development of software limiting WIP and assuming a one-piece flow work release. Questions like how to measure WIP, how to choke the release and how to estimate delivery dates are treated. The solution was implemented in a large Brazilian Software company and we will show the obstacles and specificities involved as well as results like increasing global productivity of the team by 108% and reducing 58% the lead time to deliver.

Alejandro Fernandez

TOC Consulting Best Practices, from the Client Perspective

How to manage the conflict between teaching and consulting in order to improve top management trust in consultants? We will elaborate an insight applying the TOC Thinking Process to answer the POOGI questions. What are the main conflicts we all face in the process of trust generation? What are the assumptions we should recognize and invalidate? A proposal of policies, measurements and procedures to improve trust in the interaction between top management and consultants.

TOCICO 2019 Session Descriptions

Day Two: July 15th

**Dr. Alan Barnard; JacoBen Vosloo;
Janet Rache; Kyle Marx**

Using Dynamic Buffer Management (DBM) to Reduce Shortages and Surpluses in Book Publishers' Supply Chain - (CS)

Following the successful implementation of an end-to-end supply chain solution for Microsoft in 2015, Goldratt Research Labs (GRL) was approached by a major book publisher in 2018 to help improve their supply chain by reducing shortages and surpluses. The objective was firstly to investigate the extent, consequences and causes of surpluses and shortages of their titles within retailers and their own DCs. Secondly, they aimed to jointly develop and test a solution that could significantly reduce shortages and surpluses and the related lost sales and profitability potential for both themselves and their retail customers. The model also contains more complex inventory management rules including Dynamic Minimum Order Quantities and Dynamic Safety Stock calculations. Simulating a book publisher supply chain proved to be a challenging exercise as the type of demand and production characteristics is very unique to the industry. The model provided a way to test, evaluate and optimize the proposed Dynamic Buffer Management (DBM) solution in a safe risk-free space which would otherwise have been impractical to test in the real world. The model provides invaluable insight for both the publisher and its retail partners.

Mindaugas Voldemaras and Gediminas Balodas

TOC Consultants' Adventure Through Cashflow Quadrant - (CS); Red Oak B and C

The discussion was over and we were rushing to find a quiet place in Berlin to rethink each thought. Late event, organized by Michael Demere, wasn't announced in the official programme of the TOCICO Annual Conference 2017, but it addressed the question of our lives. It was no doubt we finally found a solution, we just needed to calm down to connect the dots. A few hours later THE STRATEGY OF THE MOST PROFITABLE INVESTMENT FUND was ready and we, three TOC partners, toasted to inevitable success. This really seemed to be our roadmap to escape consulting. A thing that we've been doing well and at the same time hated for the last 10 years. 30 years of combined experience and combined frustration. You must be a fool to consult others how to move on the red curve while staying below the green yourself for years. 2 years later we remain on the same path. No changes in the strategy. No panic after yet another fail. No cash (as of March 2019). And no doubt our first cash-constrained plant that we run since the end of 2018 will grow from ~ 3,5M to ~ 100M in a few years.

Andrew Kay and Daniel Heerding

How to Tame a Dragon! Framing and Delivering a Complex and Highly Volatile Tech Project on Time in a Short Time with CCPM - (CS)

This TOCICO presentation unpacks the elements required to deliver a successful project with CCPM in a highly volatile, unpredictable environment where none of the collaboration partners know anything about TOC nor CCPM. The Project involves the separation of shared Information, Telecommunication infrastructure and administration functions between 2 businesses under the same ownership structure. It was imperative to do this without disruption to normal business especially as the businesses approached their peak season. From the 20 plus years of experience, the company ICT manager, has found projects of this nature to rapidly spin out of control requiring significant additional time and effort. Often with budget overruns, frequent disruption to day to day business transactions, coupled with high stress, and the inevitable late delivery. The presentation will walk through the project timeline from inception to end and highlight the many potentially damaging curve balls that could/would derail the project. We show how these were quickly and calmly dealt with to recover buffer penetration and avert time blow-outs. CCPM allowed us to identify and resolve issues quickly through active engagement, collaboration and delivery of context with our partners. By the end we can say we managed to tame a dragon. The presentation assumes a basic knowledge of CCPM.

Russ Johnson

Resolving The TOC (Balance Flow) vs. Lean (Balance Capacity) Conflict

More and more practitioners of systems improvement have come to realize that the Theory of Constraints (TOC), Lean and Six Sigma are actually very compatible and synergistic with TOC often providing the focus for where to apply the Lean and Six Sigma tools. In spite of this, TOC is not only still perceived by many as non-compatible with Lean and Six Sigma and some practitioners of Lean and/or Six Sigma continue to promote the perception of incompatibility. One source of this continuing perceived conflict is TOC's focus on balancing flow in contrast to Lean's focus of balancing capacity. Part of the underlying cause of this perceived conflict is how waste and balance are defined, specifically as it applies to individual process cycle times and capacity and how those definitions are then applied to the design of a production system. This presentation will look at how the conflict can be resolved by challenging the assumption that TAKT time and capacity should be the same. We will see how system balance can be attained by focusing Lean tools on the cycle time side of the system design and the TOC tools on the capacity side.

TOCICO 2019 Session Descriptions

Day Two: July 15th

Mr. SR Mukherjee, CEO

Tata Advanced Materials Ltd.; Red Oak Ballroom

Tata Advanced Materials Ltd. used TOC principles to double its operational productivity, turn around from loss making to profit making, and sustained the profit increase over the last four years!

James Cox

Using the Theory of Constraints to solve Ill-Structured (Wicked, Chronic) Problems: A Healthcare Example

Some problems are never solved and only worsen over time no matter the efforts expended. For example, look at the high and increasing costs of healthcare, government, and education and simultaneously the poor services provided. Researchers use different terms to describe these problems thought to be quite difficult or impossible to structure and solve: wicked (Rittel, 1973); Churchman (1967), ill-defined (Reitman, 1964), ill-structured (Simon, 1973), messy (Ackoff, 1979) and chronic (Goldratt, 1995). These problem types have many stakeholders (for example in healthcare, common stakeholders are government, insurance companies, medical practices, hospitals, providers, patients, etc.) each with different and conflicting goals, measures and perspectives (frames) of the problem. In this presentation, a new and different methodology to structuring and solving these intractable problems is proposed and illustrated. The approach is a combination of concepts developed by Simon, Goffman and Goldratt. Simon's concepts of bounded rationality (1979) and decomposition (1962), Goffman (1974) concept of framing and Goldratt's concepts of inherent classification (2010), inherent simplicity ((2004), and the three processes of ongoing improvement provide the foundation for structuring and solving these problem types. This new approach for structuring and solving these problems and an application to the healthcare environment is provided.

Alfredo Mycue

Leveraging TOC in Texas Government – Our Productivity Journey

This presentation demonstrates to all attendees the value of using TOC principles to improve government operations. Government affects everyone's life and business, yet the drive to improve government remains mediocre at best. The presentation will inspire them to get involved with their local government with the aim of introducing TOC to government workers. If the audience is already involved in government to some degree, then the presentation will inspire them to use these proven TOC tools and principles to improve the government they are already involved with. This presentation argues that government must keep up with the increasing demands of business, population growth, aging infrastructure, and customer demands. TOC offers this promise. This presentation offers the proof. The influence of TOC can and should expand globally to meet the government capability gap that is a worldwide phenomenon.

Day Three: July 16th

Gustavo Bacelar

How a Doctor Implemented TOC and Improved his Ophthalmologic Practice over 50% in a Few Weeks

This case study describes a physician lead TOC implementation to improve his ophthalmologic practice in a Brazilian hospital. The work consisted of performing 2 retinal imaging exams: fundus photography and fluorescein angiography. After applying the 5 focusing steps, buffer management, and drum-buffer-rope, the practice improved continuously. In 4 weeks, the practice increased the number of appointment slots by 50% and last-minute appointments by 150%. All stakeholders saw the benefits beginning on the first day. Patients flowed very smoothly through the system. More importantly, the quality of care improved after implementing TOC. Since fighting fires was eliminated, the provider and the assistant could focus on the current patient treatment, dedicate more time for each patient and also attend more patients per session.

Andrew Kay

A TOC Throughput Accounting Practice Case Study “Boosting sales, Productivity and Profits by 50% in Less than 6 weeks and Ongoing” Introducing Throughput Compression and a Pricing Decision Support Tool - (CS)

In this presentation we will learn how a small Australian family business increased sales by 50% (an additional \$2m), increased its sales quote conversion rate from 30% to over 95%, and reversed declining profit margins in the space of just 6 weeks. The Project commenced late January 2019 and is ongoing. This presentation provides a deep look into how the company applied Throughput Accounting techniques to achieve these results. We will introduce the technique of Throughput Compression based on backward and forward leveling introduced by Dr Eli Goldratt in his book The Haystack Syndrome. Whilst Dr Goldratt applied this process to internally constrained operations, this case study shows how it can be applied to market constrained operations to concurrently: a) Turn a loss making period into a profitable one, and b) Expose and condense available capacity for the sales team to exploit using a decision support tool for Throughput Pricing. The presentation will go into some practical detail to show the process and present actual results. Part of the solution required development of a simple and practical Pricing Decision Support Tool. The presentation will also reveal some minor challenges to be overcome along the way. The following addresses the other questions for submission to the Panel.

TOCICO 2019 Session Descriptions

Day Three: July 16th

Beau Ganas

Basics of Throughput Accounting Workshop - BASICS TRACK

Answering the question asked of Eli Goldratt: What replaces cost accounting? The answer is found only in... The Basics of Throughput Accounting Workshop

Jonathan Coneby

Utilizing TOC to Improve Sub-Recipient Monitoring at the Texas Workforce Commission

In 2016, Texas Workforce Commission's Sub-Recipient Monitoring Department was having trouble completing their monitoring reports after their monitoring visits. They were falling behind month after month cumulating in over a years' worth of backlog (79 monitoring reports). In some cases, they would be going on-site to monitor a sub-recipient who hadn't received their report for the previous year. Utilizing TOC through the TWC Rapid Process Improvement methodology, the department was able to completely eliminate their backlogged reports within 14 months and create a sustainable monitoring methodology for their department that provided oversight over more risk for the agency. They are now doing more with less effort.

Vicky Mabin

Using TOC to Resolve Long-Standing Resource and Service Issues in a Large Public Hospital

Public health care providers typically struggle with the need to meet demand for services, within a limited budget. This paper describes an analysis of a large public hospital, using the Theory of Constraints (TOC) comprehensive set of mapping tools to logically represent a problematic situation and investigate options for resolution. Based on the symptoms present, root causes and conflicts were identified, along with potential solutions. Further TOC tools were used to check for possible side effects of the solution, and identify obstacles that might impede successful implementation. Based on the TOC analysis, a trial project was implemented with significant benefits for two departments. Outcomes included dramatically reduced patient wait times and staff overtime, increased patient satisfaction, increased efficiencies, smoothed workload, and improved staff morale and retention, while maintaining patient safety and integrity of treatment, and staying within defined cost parameters.

Ian Heptinstall

Cost is Not a Dirty Word: Bringing Procurement into the Throughput World - (HP)

Is a fear of living in the Cost World preventing us from using a significant improvement lever? Some people interpret Cost World as meaning cutting costs, and as such the perceived role of procurement (reducing prices) conflicts with the spirit of TOC. Ian Heptinstall will suggest otherwise. He thinks TOC implementations might be missing some significant improvement opportunities if they only see bought-in goods and services as commodities and facts-of-life. Procurement is much more than haggling over a price, and a good procurement professional worries as much about paying too little, as paying too much. The average business spends over 65% of revenues with suppliers, mostly as part of TVC - is not a chupchick. If the bought-in part of your TVC costs you 20% more than your competitor, you will need to win 40% more sales simply to make the same profit! This Hyde Park presentation will follow on from the TOCICO webinar that Ian presented with Eli Schragenheim in January 2018. Ian will present a few key models from the world of procurement that he thinks might be useful to TOC practitioners, and looks forward to some great questions and debate.

Justin Roff-Marsh

Why Management Attention Can Never be the Constraint and Why "Constraint" and "CCR" Must Always be Synonymous

This presentation tackles a common claim in the TOC world (Management Attention is the Ultimate Constraint) and argues that it is false. It argues that it's false because: 1. There is an equivocation embedded in the claim 2. If the claim were true it would damage the central formulation upon which TOC rests Justin then takes a step back and explores two additional claims (arguing that each is also false): 1. The constraint can be a policy 2. The constraint can be in the market Justin then generalizes from these examples to propose that it's critical we insist that Constraint and Capacity Constraint Resource are synonymous. He argues that Constraint is such a critical concept that we must insist on absolute precision when it comes to both the formal definition and the general usage of this word, in the context of TOC.

Brian Delfield

How I Used TOC to Guide My Daughter's Healing Through The Worst Disease You Never Heard Of - (CS)

My presentation will tell the story of how I've used TOC to help manage the ongoing healing of my daughter from a little known, auto-immune illness (PANDAS/PANS) that attacks her brain and causes intense personal suffering and family chaos from strong OCD, anxiety, intrusive thoughts, and other mental health dynamics. All while juggling a career as a partner in a fast-paced private equity business.

TOCICO 2019 Session Descriptions

Day Three: July 16th

Beau Ganas and Brad Stillahn

Advanced Throughput Accounting Workshop

With Throughput Accounting ALONE, Viable Vision can be achieved and take companies to 20% ROS without taking real risks in a competitive marketplace.

Steve Holt and Russell Field

New insights on Good Constraints and Bad Constraints through the eyes of TOC and the Cynefin Framework - (NK)

The Cynefin Framework was first presented at TOCICO in 2010 and it has continued to evolve since then. It now uses several different forms of constraints to define the domains. This presentation will be a short update of the current state of the Cynefin Framework and then compare and contrast the Cynefin and TOC concepts of constraints as well as complexity and simplicity. We will show how borrowing some of the meaning from the way Cynefin views constraints can give us new insight into the value and need for constraints within TOC as well as increased clarity regarding Policy Constraints and the 5 Focusing Steps. And, finally, we'll show that the real value of TOC may come as much, or more, from the constraints we add as from the ones we remove.

Ravi Gilani

Better Than Before (B2B)

Clients have found the B2B principle extremely useful in motivate teams to give their best, and improve period after period. This concept is helpful in overcoming the first layer of resistance everyone in the organization wants to improve, so there is no disagreement on the principle of Better than Before (B2B). It has a positive connotation and helps in achieving buy-in quickly.

Day Four: July 17th

Gerald Kendall

Impact

TOC is a powerful methodology, but in 25 years of implementing worldwide, Gerry Kendall found it is not sufficient to have a lasting impact. Even when applied with passion, skill and experience, TOC requires other elements to drive newsworthy results. In this presentation, Gerry shares the 5 most compelling injections with many real life examples, which, when combined with TOC methodology, helped him and the organizations he touched succeed for years.

Kathy Austin

Increasing Productivity Through Use of Day-to-Day Thinking Process Tools

Do you have obstacles that prevent you (and/or your team) from being more productive (either professionally or personally)? Would you like to have tools to be more productive at making decisions, evaluating ideas, determining a course of action, mentoring, as well as to finally quit doing the work you expect others to do? This session provides insights and practical suggestions to implement immediately.

Fabio Roseiro and Humberto R. Baptista

Open to Buy – Friend or Foe?

Retail chains have long struggled with keeping within budget in purchasing of product categories. A widespread solution that has taken roots is called "Open to Buy" (OTB), in this each product manager / purchaser is given a budget and they must respect this limit in the purchasing of the respective category. OTB generates major negatives. First: being a budget makes the purchaser assume the "use or loose" mentality and buy even when they have no demand justifying the purchase. Second: the uniform treatment of new SKUs, lower performing SKUs and high performing SKUs makes it very hard to align the mix to the real demand in the chain. In clients Neogrid has come across the use of OTB and when the company implements the TOC Distribution solution the OTB generates the above negative effects and in effect prevents the significant improvement of inventory turns and invites behaviors not in line with the demand distorting and sometimes derailing the solution. There are positive aspects of OTB, namely control and a mechanism to refresh the mix with new products (NPI). In this presentation, we outline a new algorithm that replaces traditional OTB with a new version fully compatible with the TOC Solution and at the same time preserving the positive effects of traditional OTB. The result is a comprehensive and effective system to manage categories, introduce new products and align the retail (and its chain) with demand.

TOCICO 2019 Session Descriptions

Day Four: July 17th

Justin Roff-Marsh

Prescription for Growth: Building a Sales Machine to Out-communicate your Competitors

Assuming that a business has a compelling product (or service), and the ability to execute flawlessly, then growth is simple. All that business must do is out-communicate its competitors. Easier said than done! In a typical organization, salespeople spend only a tiny percentage (single digits) of their time engaged in selling conversations. The balance of their time is dedicated to non-sales activities such as customer service, administration, prospecting, project management, and the like. Justin's Prescription for Growth workshop will lead you through the critical changes your organization must make in order to remove ALL responsibilities other than selling conversations from salespeople, resulting in a dramatic uplift in sales activity. Conceptually simple. Complex to execute. Prescription for Growth will give you a step-by-step plan for flawless execution.

Deepak Sethi

Mind Your Mind - (NK)

My love and passion for the subject of Thinking has its genesis in Eli Goldratt's last seminal work "The Choice". The essence of Eli's message is contained in the following 2 key tenets/ action points and (1) With respect to the situation you wish to influence, use your Thinking faculty effectively- to identify the correct causality [based on valid assumptions] underlying the situation of interest to you [in that he has given us a benchmark for good quality Thinking] and (2) Treat Thinking as a life skill- apply the above to all aspects of life- family, friends, work etc. Somewhere along the way, I observed that gaps existed between Eli's intensity of Thinking Clearly, as envisioned in The Choice and as practiced in the TOC community [that included me, personally]. In fact, Eli himself made 2 important observations to Clarke Ching in a 2010 interview on The Choice: because in my eyes The Choice is by far the most important book that I have ever written. My problem is that most people who have read The Choice did not fully understand it. The question that I have been probing in greater depth has been a simple one- why were people not Thinking Clearly- as per Eli's vision and the benchmark set by him in The Choice...were there some additional missing pieces in the Thinking Puzzle that in some way, inhibit people from Thinking Clearly? Upon reading the Nobel Laureate, Daniel Kahneman's book, Thinking, fast and slow, I became aware that 2 significant and interesting aspects on the way we Think, viz.: a. We are lazy and half-hearted when it comes down Thinking b. We are wired to Think in 2 distinct modes and Fast (System 1-instinctive, associative, emotional, low effort) and Slow (System 2-rational, considered, cognitive, logical, deliberate, and effortful). provide us with an improved understanding of why we find it difficult to Think Clearly, and that additional counter measures would be required for them. Based on this expanded understanding, in the session Mind Your Mind at the Chicago TOCICO conference, I will highlight the need to be more Mindful in our Thinking, what all do we need to mindful of, how

do we become/ remain Mindful, and more importantly, some added counter-measures. In short, I will be sharing with the community, a more expansive and a more composite view on Thinking, which includes Mindfulness as an essential component.

Max Krug

Accelerating Results - Integrating TOC, Lean, and Six Sigma to Achieve Leadership Alignment and Buy-In

The focus of this presentation is to provide a how to process to accelerate the achievement and sustainment of results when helping companies transition into becoming a high performing organization. The scope of the presentation is on accelerating the process of helping an organization in building the internal capability necessary to allow the organization to capitalize on a decisive competitive edge in the market. The presentation will focus on the techniques used to achieving leadership alignment and buy-in by overcoming the first three layers of resistance. The presentation will discuss the integration of TOC thinking processes, along with Lean and Six Sigma methods to improve communication and to obtain leadership agreement, alignment, and consensus on What to Change, What to Change to, and How to Cause the Change. Topics will include the Thinking Processes, Force Field Analysis, VATI plant configurations, Throughout Accounting, Value Stream Map, Fault Tree Analysis, Goal Tree, Critical Success Factors, Key Performance Indicators, and Critical Chain.

Danilo Sirias

Improving quantitative Reasoning Skills One Student at a Time - (NK)

The need for a better math education is clear. With the ever-increasing advancement in technology and the tighter integration of the global economy, relevant social and business problems are more complex. Industries which require technology and science-based solutions are becoming the engine fueling countries growth. Math offers a rigorous and systematic process to improve problem-solving skills, which are useful not only for the highly complex but also for many daily life decisions. However, despite an abundance of teaching and learning resources, success in improving math education is still minimal. The purpose of this presentation is to show that by focusing on developing key thinking processes, students can improve their quantitative reasoning skills. The proposed thinking skills are inductive thinking, deductive thinking, and analysis. To enhance those thinking skills, three graphic organizers referred to as Problem Solving Maps (PSM) and that were developed after years of using TOCFE tools will be presented. I will talk about the analysis that was conducted to create the PSM system, an introduction to the system, my personal experience using it with my two daughters, and finally, different case studies including one from the Philippines where hundreds of teachers were trained, impacting thousands of children.

TOCICO 2019 Session Descriptions

Day Four: July 17th

Satoru Murakami

Japanese and TOC, POOGI Start from “Harmony Building” - (CS)

Eli said, “Japanese companies create and share new concepts and ideas through trial and error. This is essence of WA and organizational ability. Other countries cannot keep up with, Introducing through Case of Hitachi for 18 years.

Robert Bolton

Fast Tracking a New Product in Finance - (HP)

Once you have a project goal (deliverable) and a basic network, you don't estimates from the resources until the work is to commence. The executive management gut feel and buffer estimate will be good enough. Provocative point: Do NOT need a resource to provide an estimate. Counter point: Need the skilled resources (legal, risk and credit) to give estimates to meet aggressive time frames. A leading Australian Investment Bank (BT) wanted to gain competitive advantage by launching a new product. This was a Separately Managed Account (SMA) active equity open ended fund. To gain early market launch it needed to develop this product in 4 months. The current practice was 15 to 18 months. A project team estimated, planned and developed this product. It utilised network building and the facilitation to determine suitable prerequisites. The project introduced the Project Flow based on the number of tasks and phased task definition. The phased task definition used in this flow schematic were Not Defined (N), Defined (D) and Complete ©. This team at commencement advised the BT executive that with this type of project task number would typically double. This estimated task number and the predicted effect was welcomed by the executive management. The executive management were actively engaged to support the team and adjudicate with resources when required. It was developed and approved by

Kaoru Watanabe

Best Marriage, TOC and Digital Technology

It is known that there are so many failure of Digitalization Project utilizing Internet of Things(IoT), Data Analytics, Big Data or Artificial Intelligence(AI). Hitachi investigated many failure case of digitalization project in manufacturing industry, and identified most critical and important cause of such failure. It is perception and communication gap between Information Technology (IT) Engineers and Operation Technology (OT) Engineers. Based of several trial project, Hitachi found that TOC Flow application has a power to improve perception and communication gap between IT Engineers and OT Engineers. The TOC Flow application helps OT Engineers to verbalize their operation, UDEs and experiences, and the TOC Flow application provides IT Engineer with foundation to understand Operation Technology. Furthermore, the six questions specific to any technology is the most practical way to communicate about reality of Technology and to exploit the power of Technology. This presentation intent to share lessons learned and new principle. Marriage with TOC is the best way to exploit the power of Digital Technology. The presenter also intends to discuss with audiences about his idea. Marriage with Digital Technology is good way to exploit more power of and to realize more outcome by TOC.



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Time n Cash is a training firm that provides industry relevant programs in the area of Theory of Constraints (TOC). The programs are designed with inputs from globally renowned subject matter experts, and tailored to the needs of the Indian Industry.

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identify and resolve systemic constraints that stand in the way of the highest possible monetization of their assets. We work together with our clients as if they were our own colleagues and respect their unique competencies. We strive to bring new perspective and operating models, build or enhance their capabilities, and enable their organizations to achieve a sustainable advantage. We do this through an understanding of their current state, their future state, and providing a proven model to attaining both.

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