TOCICO Resources at your Service: Using, Sharing, and Developing the TOC Body of Knowledge

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The attendee will be able to:

Use the TOCICO resources effectively to:

• Find presentations, webinars, books, and articles on a specific topic for developing your knowledge base.

• Introduce clients, faculty, students, & associates to a given topic, by using the TOCICO portals: materials include introductory presentations, 5-7 case study presentations & an annotated bibliography of all videos & webinars on that topic).

• Submit & revise your research submission or assist in the review of other’s research efforts in contributing to the TOC body of knowledge (BOK).
- To provide industry (organizations, education providers and individuals) with an internationally recognized standard to assess the level of expertise of Theory of Constraints professionals (academics, practitioners, implementers) - hereafter referred to as “Certification of TOC Expertise”.

- To administer the Certification process for TOC professionals around the world.

- To promote the TOC Body of Knowledge (hereafter referred to as “BOK”) and professional integrity of the Certified TOC Professionals.”
To fulfill these purposes, TOCICO should have:

- A process for identifying/collecting/classifying existing Theory of Constraints (TOC) knowledge.

- A defined structure/process to proactively introduce new knowledge into the Theory of Constraints (TOC) BOK,

- A process for disseminating & promoting the TOC BOK, and

- A process to determine what & when contributions to the TOC BOK are candidates for certification testing.
In this workshop we describe:

1. The TOCICO website.

2. The TOCICO presentation video & webinar database & how it might be used in consulting / teaching / research.

3. The TOCICO portals.

4. The TOCICO white paper process and series.

5. The TOC book list.

6. The TOC journal article database.
1. The TOCICO Website
Welcome to TOCICO.org

2014 TOCICO International Conference
Registration NOW OPEN!

June 8th-11th, 2014
Bolger Center
Washington DC, USA

REGISTER NOW and get the EARLY BIRD rate!
Early bird discount ends April 15th, 2014.

REGISTER NOW

Calendar
1/1/2014 » 1/1/2099
On-line Mafia Offer Boot Camp

1/6/2014 » 4/30/2014
EM 526 Constraints Management course

Latest News
3/6/2014
Mahindra First Choice Services (MFCS) and Vector Consulting Group (VCG) partnership

7/3/2013
President of Goldbright, lifetime achievement award

Newest Members
W. Goncalves
Regional Groups: Rest of World

M. Filho
Regional Groups: Rest of World
Webpage Topics Covered

- TOCICO Exams
- Certified Members
- Resources available to members vs. non-members and guests
- Webinars
- Portal Pages
- White Papers
- Website Community: Blogs, Forums & Groups
The purpose of the Fundamentals Examination is to identify those applicants who possess the minimum level of capabilities in Theory of Constraints (TOC) basics that are needed to grasp the advanced knowledge required to achieve certification in a TOC applications area.

ANYONE STARTING THEIR CERTIFICATION IN TOC MUST FIRST TAKE AND PASS THIS EXAM.

EXAM SECTIONS:

1. TOC Fundamentals (approximately 25%)

Objective: Demonstrate an understanding of TOC basic beliefs, paradigms and concepts. Seek to show the ability to apply these fundamental ideas within a realistic scenario. Compare and contrast TOC basics with conventional wisdom approaches.

2. TOC Thinking Processes (approximately 25-30%)

Objective: Demonstrate a fundamental understanding of TOC Thinking Processes. For simplified scenarios, be able to determine and state sound logical relationships.

3. TOC Applications (approximately 45-50%)

Objective: Demonstrate a fundamental knowledge and understanding of simple TOC applications in (1) internal supply chain management and logistics, (2) finance and measurement, and (3) single critical chain project management. In addition, show familiarity with the TOC approach to identifying and addressing each layer of resistance to change.
The TOCICO Fundamentals Exam covers the fundamental TOC concepts that are common to all the TOC Proven Solutions. Learning the breadth of the TOC Fundamentals can be a daunting task. Sometimes it's better to learn a bit of TOC and then take an exam on just that small part. Then learn more and test again and learn more, and so on. And sometimes learning all the fundamentals may be more than you really need.

We have basics exams available in the following areas:

• Drum Buffer Rope exam
• Thinking Processes exam
• Critical Chain Project Management exam
• Finance & Measures exam
• TOC Replenishment exam
• TOC Philosophy exam

You may find these exams very helpful in evaluating your own knowledge in these areas. The exams can be taken anytime over the Internet without a proctor. They are inexpensive and private. They can be very helpful in supporting your efforts to focus your study on to the things you don't quite understand. These basics exams can be taken in preparation and study for the TOC Fundamentals exam. They do not result in a certification, but you will receive a certificate of achievement, by email, for each basics exam you pass. You can then print out your certificate and hang it on your wall proudly!
CERTIFIED PRACTITIONER

After passing the Fundamentals exam, there are FOUR areas of TOC in which certification exams are offered:

- Finance & Measures
- Project Management
- Supply Chain Logistics
- Thinking Processes

Successfully passing any of these exams will certify you at the PRACTITIONER LEVEL for that area. Practitioners are responsible for planning and/or execution as well as continuous improvement of TOC related applications that have already been implemented at a company.

CERTIFIED IMPLEMENTER

After passing an exam in any given area, if you wish to be certified at the IMPLEMENTER LEVEL, you will need to submit a case study. You will need to demonstrate expert level synthesis & evaluation ability in leading the implementation of one or more specific TOC applications by submitting case study of actual implementation. Implementers are responsible for the design and implementation of the new rules and related logistical systems, processes and metrics of one or more of the TOC applications.

CERTIFIED ACADEMIC

After passing a certification exam in any given area, you will be invited to submit a case study at the ACADEMIC LEVEL. Publish an article based on an actual TOC case study application in a peer reviewed (academic or practitioner) journal. Similar to the implementer track, the academic must conduct the case study analysis from on-site interviews. Academics are responsible for teaching TOC applications to practitioners and / or implementers.
The TOCICO exams are offered year round in various countries. A examination schedule is available on the TOCICO website:

Click to register

Date

Location
A list of all certified members can be found on the TOCICO website at the following link:

http://www.tocico.org/?page=Certified_Members

This page lists members by:

- WHO PASSED THE FUNDAMENTALS EXAM
- CERTIFIED PRACTITIONERS
- CERTIFIED IMPLEMENTERS
- CERTIFIED ACADEMICS

You must be a TOCICO member, and in good standing (not suspended or expired), in order for your name to be listed.
Resources available to MEMBERS

Paid TOCICO Membership includes ALL of the following benefits:

- FREE on-line access to all past TOCICO conference videos including over 400 videos starting with the second conference in 2004. These were previously sold for $149 per conference (totaling $1,788), but now, viewing ALL of them are INCLUDED with your membership.
- Discounts on TOCICO products and conference attendance.
- FREE registration to all new webinars – and just wait until you hear what’s in the works!
- FREE access to all past TOCICO webinar recordings
- FREE pdf of the TOCICO Dictionary – 135 pages of pure content. The dictionary is the definitive source of TOC terms and constructs.
- All 6 Strategy & Tactics trees developed by Eliyahu M. Goldratt
- Over 20 Theory of Constraints articles with around 4000 more on the way.
- And, access to networking with the TOC community around the world on the TOCICO website. Build your page, start discussions, or contact another member – the new TOCICO website is web 2.0 ready and ready for you to engage.

MOST OF THESE CAN BE FOUND UNDER THE EDUCATION MENU OF THE TOCICO WEBSITE
FREE Limited Guest membership includes access to all the of the following (to those in good standing):

- TOCICO Dictionary – 135 pages of pure content!
- All 6 Strategy & Tactics trees by Eliyahu M Goldratt.
- Over 20 Theory of Constraints Articles!, and more coming
- And, access to all forum discussions and the TOC Community Blog with the ability to participate!

ALL OF THESE CAN BE FOUND UNDER THE EDUCATION MENU, in the REFERENCES SECTION
Resources available to NON-MEMBERS

We have many PUBLIC pages available on the TOCICO website that any site visitor can view. These include:

- “What is TOC?” Menu
- TOCICO Portal Pages (under SUCCESS STORIES menu)
- Trainers & Consultants list, Other TOC Events, Upcoming Webinars, White paper process & submission form, Eli’s Riddles (under EDUCATION menu)
- Certification Overview, Certification Maintenance, Exam Types, Exam Schedule (under CERTIFICATION menu)
- Entire TOC STORE
- All COMMUNITY Pages

The TOCICO WEBSITE MENU (shown below) can be seen by any page visitor, and all of the above areas can be accessed without being a member.
TOCICO offers **UPCOMING** webinars and **PAST** webinars located in the **EDUCATION** menu.

**Upcoming webinars:** These are the available webinars that anyone can register for. ALL webinars are FREE to paid TOCICO members (in good standing). Guests and non-members will need to pay $40 for each webinar.

**Past webinars:** All TOCICO webinars are recorded and placed on the past webinars page. Access to this page is FREE for all paid members. For guests and non-members, it is $40 for each recording.
A recently added feature of the TOCICO website are the Portal Pages. These can be found under the SUCCESS STORIES menu.

Portals are available in the following areas of TOC:
- Basics of TOC
- Finance & Measures
- Government
- Healthcare
- Manufacturing
- Project Management
- Sales & Marketing
- Service Industry
- Strategy & Tactics
- Supply Chain
- Thinking Processes
- TOC, Lean & Six Sigma (TLS)
- What is TOC

ACCESS TO THESE PAGES IS FREE FOR ALL WEBSITE VISITORS!!!
TOCICO Portal Pages

EACH Portal Page offers **FREE VIEWING** of 6-7 videos about each area of TOC. You can also share the videos and download a copy of the PDF presentation associated with each video.

FOR EXAMPLE: The TLS portal offers FREE viewing of 6 different TLS videos that have been presented at various TOC conferences.
The purpose of the white paper series is to develop and disseminate TOC knowledge for TOC experts and academics and the business professional audience. Subjects include certification topics (supply chain logistics, project management, thinking processes, finance and measurements, business strategy) special interest topics (healthcare, for example) and emerging topics (experiential learning or performance measurement for non-profits, for example).

The research process is listed below:

1. Identify and Initiate Research
2. Conduct Research
3. Review Process
4. Revise and Resubmit Process
5. Validated Knowledge Process

MORE INFORMATION ABOUT THE WHITE PAPER PROCESS CAN BE FOUND UNDER THE EDUCATION MENU ON THE TOCICO WEBSITE
If you have a white paper that you would like to submit, please use the White Paper Submission form, located on the website under the EDUCATION menu.

AFTER SUBMITTING YOUR PAPER YOU WILL RECEIVE A CONFIRMATION EMAIL. ADDITIONAL INSTRUCTIONS WILL ALSO BE INCLUDED IN THE EMAIL. All white papers go through a rigorous review process and this can sometimes take several weeks.
Under the **COMMUNITY** menu, you will find various methods of being able to communicate with your fellow TOC Community members. Such methods are the TOC Blogs, Groups and Forums pages.
Under the **COMMUNITY** menu, when you click on the Community Blogs tab you will come to the following page:
The TOC Community Blog topic was started by the TOCICO Website Admin. Clicking on TOC Community Blog will bring up:

- Any PAID TOCICO member can post a topic within the blog!
- ANY website visitor can view the blog, but they must be a member to post a new topic or to comment.
- Click on a blog topic title to view the post by itself.
- Blogging is a good way to announce a new event, post a new topic about TOC, or any other items as you see fit.
- These blogs can be shared in an RSS feed on YOUR website. When a new blog is posted, it will automatically update the feed on your website with the new post!
- Click the RSS icon at the top right corner of the page to access the RSS feed. Click on subscribe.
Under the **COMMUNITY** menu, when you click on the Groups tab you will come to the following page:

This page lists all available groups types on the TOCICO website.

While paid members have access to all groups, guests and non-members may not be able to access some of these areas.

**CLICK ON ANY GROUP TYPE TO VIEW THE GROUPS AVAILABLE IN THAT TOPIC AREA.**
TOC Community Groups

Click on any group type and you will be able to view all of the groups within that type. For example - Clicking on Specific Interest Groups brings up the following page:

Access to the groups listed on this page requires a membership (paid OR free guest membership).

If you click on any group title you will be asked to sign in to a member account.

Requiring a member login prevents spamming of the group pages and ensures that those who visit are truly interested in that group.
TOC Community Groups

Click on any GROUP TITLE and you will be able to view that group.
For example - Clicking on TOC in Healthcare brings up the following page:

YOU MUST BE SIGNED IN TO A MEMBER ACCOUNT (guest or paid member) TO ACCESS A GROUP HOME PAGE.

Within the group home page you will find:

- **Group Pages**: If your group has any custom pages, you will find them here. Click on group pages to bring up a menu of the available pages.

- **Directory & Features**: This includes a group directory, calendar, blogs, forums and photo gallery.

- **Group Feed**: Shows who has joined the group, posted a new blog topic, and any other new events that have happened pertaining to this group.

- **Recently Updated Profiles**: Anyone in the group who has updated their member profile recently.

- **Recent Blog Activity**: If you are a group member, you can post blog topics within the group. Click on any blog title to view the posted blog.

- **Recent Forum Activity**: If you are a group member, you can post a new forum topic. Click the title of the forum topic to view it, and post replies or new discussions.
Under the **COMMUNITY** menu, when you click on the Forums tab you will come to the following page:

Scroll down the forums page for different forum topics.

ANY site visitor can view the forums but....

YOU MUST BE A TOCICO MEMBER to post a discussion within a forum topic.

There are forum topics available in the following areas:

- Certification
- Specific Interests
- Practitioner
- Consultant
- Conference
- TOCLN (TLS)

Forums are an excellent way to begin a discussion about a specific topic. Click any of the links under the topic areas to view the discussion.
FOR EXAMPLE: Clicking on Finance & Measures under the Certification Forum will bring up:

If you are a paid member, you can start a new discussion. Click new topic to begin a new discussion.

These are the different discussions that have been posted in the Finance & Measures forum. Click on any title to view the discussion.
FOR EXAMPLE: Clicking on Throughput Accounting for Non-Profit Organizations will bring up:

Click on REPLY to post within the discussion. YOU WILL NEED TO BE SIGNED IN to an account to reply to a discussion. OR…….

Scroll to the bottom of the discussion and post a quick reply to the forum. Again, you will need to be signed in to a member account.
Website Summary

There are MANY features on the TOCICO website that are available to you! I hope this small presentation has explained some of the major features of the site and you are now encouraged to go start a forum discussion or join a new group!

If you have any additional questions about the website, or its many features, please contact Jessica Banks, TOCICO Operations Manager, at jessica@tocico.org
2. The TOCICO presentation video & webinar database & how it might be used in consulting / teaching / research.
Each video of over 500 of the TOCICO annual conference presentation videos and each webinar is catalogued with author, title, complete citation, abstract, and key words (for conducting searches).

An annotated bibliography (author, year, conference, and abstract) on various topics can be constructed by keywords searches.
<table>
<thead>
<tr>
<th>DATE</th>
<th>WEBINAR TITLE</th>
<th>FILE</th>
<th>PRESENTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feb. 8th, 2014</td>
<td><em>The Little Prince Pediatric Hospital - a TOC Study in US Healthcare</em></td>
<td>Powerpoint</td>
<td>Bill Taylor</td>
</tr>
<tr>
<td>Feb. 7th, 2014</td>
<td><em>Managing Systems - Part 3: Managing stocks - Application of the solution for MTA (Make-to-availability) and MTIA (Make-to-internal-availability)</em></td>
<td>Powerpoint</td>
<td>Oded Cohen</td>
</tr>
<tr>
<td>Feb. 6th, 2014</td>
<td><em>Understanding Systems and Conflicts through Clouds - Part 3: Challenges of cloud consolidation process; working with assumptions</em></td>
<td>Powerpoint</td>
<td>Jelena Fedurko</td>
</tr>
<tr>
<td>Jan. 31st, 2014</td>
<td><em>Managing Systems - Part 2: Managing processes through a combination of time buffers and stock buffers - Application of the solution for MTO (Make-to-order)</em></td>
<td>Powerpoint</td>
<td>Oded Cohen</td>
</tr>
<tr>
<td>Jan. 30th, 2014</td>
<td><em>Understanding Systems and Conflicts through Clouds - Part 2: 10 criteria to qualify a statement as an UDE; typical mistakes of constructing UDE Clouds</em></td>
<td>Powerpoint</td>
<td>Jelena Fedurko</td>
</tr>
<tr>
<td>Jan. 23rd, 2014</td>
<td><em>Understanding Systems and Conflicts through Clouds - Part 1: Reasons and triggers for different Cloud types; sequence of constructing; typical mistakes</em></td>
<td>Powerpoint</td>
<td>Jelena Fedurko</td>
</tr>
<tr>
<td>Jan. 16th, 2014</td>
<td><em>TOC for Inventory Management - Overview</em></td>
<td>N/A</td>
<td>AGI Goldratt Institute</td>
</tr>
<tr>
<td>Jan. 16th, 2014</td>
<td><em>TOC for Inventory Management - Buffer Sizing Exercise</em></td>
<td>N/A</td>
<td>AGI Goldratt Institute</td>
</tr>
<tr>
<td>Jan. 16th, 2014</td>
<td><em>Work Flow Prioritization - Cost-Effective On-Time Delivery Performance</em></td>
<td>N/A</td>
<td>AGI Goldratt Institute</td>
</tr>
<tr>
<td>Jan. 11th, 2014</td>
<td><em>The 12 Questions Current Reality Branch - The Excel App</em></td>
<td>Powerpoint</td>
<td>Bill Taylor</td>
</tr>
</tbody>
</table>
3. The TOCICO portals
The TOCICO portals provide a link to half dozen selected videos / webinars with pdfs on a specific topic. An annotated bibliography of videos / webinars is also provided. Currently topics are:

1. Basics of TOC
2. Finance and Measures
3. Government
4. Healthcare
5. Manufacturing
6. Project Management
7. Sales and Marketing
8. Service Industry
9. Strategy and Tactics
10. Supply Chain
11. Thinking Processes
12. TOC, Lean, Six Sigma (TLS) and
13. What is TOC portals.
We're excited to provide free access to 7 of over 500 presentations on Theory of Constraints (TOC) ranging from theory to the implementation of TOC in small and large service, manufacturing, and government organizations. These applications were selected to provide a brief definition of TOC and show the breadth of successful applications from simple to complex. The same concepts that are applied to manufacturing can be modified slightly and applied to construction, software development (and implementation), healthcare, government, etc. We have listed below the references and abstracts for the free presentations on this portal. In addition, we have provided a comprehensive annotated bibliography of presentations over the past decade and webinar videos currently in our archives. And, at the end of this annotated bibliography is a link to the TOC book list segmented by topic areas.

TOC has universal application at the individual, organization and supply chain levels. The organizations described in these presentations have made significant improvement by using the TOC philosophy to continuously improve. TOC is the best methodology for today BUT there will always be a need for continuous improvement. These tools are part of the journey to excellent organizations.

Our hope is that you'll learn from these 6 presentations and are moved to join TOCICO to gain access to the rest of our archives.

TOCICO membership includes:

- FREE on-line access to all past TOCICO conference videos including the several hundred videos starting with the second conference in 2004. These were previously sold for $149 per conference (totaling $1,788), but now, viewing ALL of them are INCLUDED with your membership.
- Discounts on TOCICO products and conference attendance.
- FREE access to the over 50 recorded webinars by some of your favorite TOC authors.
- FREE registration to all new webinars — and just wait until you hear what’s in the works!
- FREE pdf of the TOCICO Dictionary — 135 pages of pure content.
- All 6 Strategy & Tactics trees by Eliyahu M. Goldratt
- Over 20 Theory of Constraints articles with more on the way.
- And, access to networking with the TOC community around the world on the TOCICO website. Build your page, start discussions, or contact another member — the new TOCICO website is web 2.0 ready and ready for you to engage.

Goldratt discusses writing the introduction (chapter 1) of the Theory of Constraints (TOC) Handbook. What is TOC? Focus: do what should be done and don’t do what shouldn’t be done and the evolution of TOC. Throughput accounting was developed about 1981. In about 1985 other environments wanted a solution. Bottleneck was used. Traditional critical path project management was developed in 1958. The critical chain methodology was developed about 1986 for Statol of Norway. The constraint was the critical chain which represents the time it took to complete the longest path of dependent activities based on technological sequence and resource dependencies. The name theory of constraints was formulated based on this understanding of a different (project versus production) environment. In retailing, the constraint was the shelf space. The five focusing steps (5FS) process originated in 1987. New questions were asked in new environments. New opportunities opened. Everyone is taking what we developed and copying what we did but they didn’t think to understand the differences. Therefore their solution didn’t work. When you look at reality and where you want or think you should be you are looking at gaps. Once you acknowledge the inter-dependencies of the gaps you recognize what you call problems are undesirable effects of underlying core problems. Most of the solutions you have been recommending are solutions for UDEs not for the real problem. How do we answer the questions of identifying, exploiting, subordinating, etc.? What we find is you are really using the scientific approach but no one had verbalized how to do it. We spent three years to verbalize the scientific approach. Our solution was the thinking processes (TP). Toyota had developed the five Whys? The current reality made it easier to find the core problem because it was easier to dive down from five UDEs rather than one. From 1989 to 1992 we checked and rechecked


Drum buffer rope (DBR) and buffer management, the TOC application for operations/ production, results in dramatic improvements in the flow of products, orders and/or customers in both manufacturing and service organizations. DBR and buffer management was first described in the best-selling novel, The Goal, which was written by the founder of TOC, Dr. Eliyahu M. Goldratt. Vast experience shows that, in traditionally run plants, DBR and buffer management typically (but not always) leads only to good results and to no negative ramifications: lead time shrinks to less than half, due date performance improves dramatically, quality and customer satisfaction improve and excess capacity is revealed.

Ferguson, L. A. (Jan. 16th, 2013). 0 to 60 Introduction to finance & measures. TOCICO Webinar Series. TOCICO, Theory of Constraints International Certification Organization

The TOC application for finance and measures is not a complete solution for accounting or finance, but rather just provides important insights into how to more effectively make decisions based on more appropriate measures of performance. For example, we emphasize the need to make managerial decisions based on the constraint, the factor most limiting the ability of the organization to achieve its goal. Paradigm shifts regarding common mistakes made in organizations with respect to how to make decisions based on the data/information are part of this TOC solution. Those mistakes typically result in a significant (if not huge) negative impact on the financial performance of the organization. (57 minutes).

Ferguson, L. A. (Feb. 20th, 2013). 0 to 60 Introduction to strategy. TOCICO Webinar Series. TOCICO, Theory of Constraints International Certification Organization

Effective strategic planning and execution is critical to the success of any organization. TOC provides an excellent tool set for strategy to enable an organization to satisfy the market now and in the future, satisfy employees now and in the future, and make money now and in the future. This 0 to 60 webinar provides an introduction to the TOC methods, which provide the necessary and sufficient solution elements for achieving the vision/goal of the organization. The transformational strategy and tactic tree is an incredibly powerful tool for synchronizing all the actions needed to transform an organization into a "well-oiled" machine for satisfying the goal and necessary conditions. (1 hour, 28 minutes).
The TOC application for finance and measures is not a complete solution for accounting or finance, but rather just provides important insights into how to more effectively make decisions based on more appropriate measures of performance. For example, we emphasize the need to make managerial decisions based on the constraint, the factor most limiting the ability of the organization to achieve its goal. Paradigm shifts regarding common mistakes made in organizations with respect to how to make decisions based on the data/information are part of this TOC solution. Those mistakes typically result in a significant (if not huge) negative impact on the financial performance of the organization. (57 minutes).

The TP are a powerful set of methods for improving your critical thinking skills. The tool set consists of generic processes for addressing what to change, what to change to and how to cause the change. This webinar provides an overview of each of the TP tools: the evaporating cloud, current reality tree, future reality tree, negative branch reservations, prerequisite tree, transition tree, strategy and tactic trees, the plus and minus-minus buy-in processes, and the four viewpoints of change. (1 hour, 28 minutes).

The TOC pull distribution application dramatically reduces both shortages and surpluses of inventory, the two most significant undesirable effects leading to poor performance. Improving availability (thus sales), while substantially reducing inventory in the supply chain results in significant improvements in the net profit to sales ratio, ROI and cash flow. How are these results achieved? Mainly by switching the supply-chain operation mode from "prepare to forecasted consumption" to "react to actual consumption.” This webinar provides an overview of the key concepts of the Pull Distribution application and solution for improving the entire supply chain. Achieving a "win" for each and every stakeholder of the supply chain (customers, wholesalers, distributors, and manufacturers) is the only way to ensure that any change is effectively planned and implemented. (1 hour, 36 minutes).

The TOCICO Dictionary (2012, 2nd Ed. Cox, Boyd, et al., 45) defines the theory of constraints (TOC) as 'A holistic management philosophy developed by Dr. Eliyahu M. Goldratt that is based on the principle that complex systems exhibit inherent simplicity, i.e., even a very complex system made up of thousands of people and pieces of equipment can have in any given time only a very, very small number of variables – perhaps only one (known as a constraint) – that actually limits the ability to generate more of the system’s goal.' The term, Theory of Constraints, was coined by Dr. Goldratt in 1986 with his realization that his OPT philosophy applied to more than the management of bottlenecks in production. He realized that his concepts also applied to projects with the 'bottleneck' being the critical path (better described as a critical chain); hence the new name 'theory of constraints'. The evolution of TOC started much earlier in the late 1970’s with the development of Goldratt’s OPT software and later the OPT principles. In 2010, Dr. Goldratt in 'Chapter 1 What is TOC? My perspective' (of the Theory of Constraints Handbook) wrote that TOC could be described by one word: 'focus'. In the chapter Goldratt describes redefining the term 'focus' to solve each new problem blocking achieving the system goal and in each instance of solving the new problem he expands the scope to several organization functions (production, accounting, marketing, sales, distribution, retail, human relations, engineering and projects, business strategy, etc.) and increases the performance of the system significantly. The answers to the first two change questions of 'what to change?' and 'to what to change to' are provided for organizations and for various organization functions. (1 hour, 43 minutes).
4. The TOCICO white paper process and series
The TOCICO White Paper Series is a formal process provided for members to contribute to the TOC body of knowledge. The submission, review and revision processes are described in detail.
Dr. Goldratt’s view of the world (2008, 158) “... every situation can be substantially improved, even the sky is not the limit.”
Goldratt believed that problems or conflicts should be viewed as clouds. These conflicts exist which block us from achieving our full potential. He also believed (2008, p. 158) that “… every conflict can be removed… there is always a win-win solution.”
The Role of TOCICO

The cloud is the limit

PROBLEMS

TOCICO

How can TOCICO address these major problems?
The Role of TOCICO

The cloud is the limit

Experiential Learning
Measures for non-profits
Health care
Supply chain variations

PROBLEMS
TOCICO White Paper Series Process

PROBLEMS

The cloud is the limit

Experiential Learning
Measures for non-profits
Health care
Supply chain variations

A call for papers / research offering new TOC knowledge.

Half-baked idea
Half-baked idea
Half-baked idea
Half-baked idea
Process of creating new TOC knowledge within the TOC BOK (short- and longer-term).

1. Identify and Initiate Research
2. Conduct Research
3. Review Process
4. Revise and Resubmit Process
5. Validated Knowledge Process
6. Certification Material Process
Step 1. Identify and Initiate Research

PROBLEMS

The cloud is the limit

Experiential Learning

Measures for non-profits

Health care

Supply chain variations

A call for papers / research offering new TOC knowledge.

Half-baked idea

Half-baked idea

Half-baked idea

Half-baked idea
Step 2. Conduct Research: Author(s) writes paper for submission to white paper series or journal.

Different starting points for half-baked ideas

Author conducts research

Someone requests assistance to conduct research

Standing on the Shoulders of Giants Process
Step 3. Review Process: Reviewers provide constructive, detailed, documented comments to the editor and the author.
Step 4. Revise and Resubmit Process

3. Review Process

Step 4. Revise-and-Resubmit Process: Author responds to reviewers’ and editor’s comments.
Step 5. Validated Knowledge Process

Reviewers provide constructive, detailed, documented comments to author.


Step 6. Certification Process

Step 5: Validated Knowledge Process.

Step 6. Certification Process: Certification area experts examine for certification testing opportunities.

Specialized TOC Contributions: Special interest groups are notified of advancements in topic.
5. The TOC book list
Cox’s TOC book list

Contains:

• 150+ books written in English categorized by topic (critical chain, logistics solutions, supply chain, performance measurement/accounting, thinking processes, strategy, general, healthcare, management of people, sales process, and TOC for Education).

• 50+ Non-English TOC books categorized by language (Chinese, French, German, Hebrew, Japanese, Korean, Portuguese, Russian, Spanish, Italian). These are original language books, no translations are listed.

• 60+ e-books, many written only in e-book format.
6. The TOC academic article database
Database being developed to document TOC-related ‘academic’ papers: journal articles and published conference papers

Follows on from *The World of the Theory of Constraints* bibliography, led by Vicky Mabin and Maryam Mirzaei

Over 4000 articles have been identified so far, of which over 700 focus on Critical Chain.

So far, half the CCPM articles have been classified, checked and links verified.

Intention is to complete database (funding permitting) and make available online to researchers worldwide
### Published TOC articles database

#### TOCICO 2014 Conference

<table>
<thead>
<tr>
<th>Group</th>
<th>Subgroup</th>
<th>Title</th>
<th>Authors</th>
<th>Year</th>
<th>Type</th>
<th>Link</th>
</tr>
</thead>
</table>

This paper also makes suggestions for future research directions and subfields, which will be useful in improving the theories in relevant research fields. The purpose of this research is to develop a specific method for telecommunication tower construction project management. The research provides a comparison between critical chain and critical path method. The result is a new time management method for telecommunication tower construction which is more effective than the traditional methods. This method allows for better time management by identifying and managing the critical factors that affect the project's completion.
Why is this important?

- TOC needs to build credibility amongst academia if it is to spread to the new generation of university graduates
  - To do that, it must have an academic standing measured by research papers, citations, quality of journal, BUT
  - To do that, researchers/authors must know who else has published what, and then cite that work! BUT

- Theory of Constraints articles are hard to find:
  - Papers are hard to isolate using standard search terms, ‘Theory of Constraints’ or ‘TOC’
  - Papers are spread through many disciplines and application areas (a downside to being so universally useful!)
  - Most TOC users/developers are outside academia and don’t have access to academic databases
The result

- Much TOC research is conducted in isolation or ignorance of others’ work
- Poorly cited by other researchers
- Many articles assume little prior knowledge and reiterate the basics, offer little of value?
- A reinforcing cycle
Benefits of a database

• Make it easy to find out who else has written on similar issues, and quote them ...
  ... via a searchable database, freely available online to researchers worldwide

• Build the community of researchers, and strengthen the links between academics and practitioners

• Make the most of the synergies between TOC practice and research
How many TOC academic papers are out there?

- CCPM: 700 papers
- Drum buffer rope: 300 papers
- Supply chain: 200 papers
- Thinking processes (including S&T tree): 500 papers
- Performance measurement: 800 papers
- Yet to be classified: 900 papers
Where are TOC academic papers published?

- International Journal of Production Research
- Production and Inventory Management Journal
- Production Planning and Control
- Computer Integrated Manufacturing Systems, CIMS
- International Journal of Project Management
- International Journal of Production Economics
- International Journal of Operations & Production Management
- Human Systems Management
- The Journal of the Operational Research Society
- Journal of Mathematical Physics
- Management Accounting
- Project Management Journal
- European Journal of Operational Research
- Industrial Engineering and Management
What is in those academic papers? CCPM example

CCPM Theoretical Papers

- Theoretical debates
- Simulation
- Mathematical and statistical analysis
- Fuzzy set theory

CCPM Empirical Papers

- Mining
- Maintenance
- Software
- Research
- Services
- Production
- Construction
Conclusion

• More resources now available more than ever before
  – 600 Videos (Cox – add numbers?)
  – 240 Books
  – White papers (coming!)

• More resources still are in existence but not readily accessible (academic articles) – you can help us to make them more visible and accessible, and in so doing, build the academic credibility of TOC

• Academia, consultant and practitioner communities need to work together on using existing resources and building more for a stronger future
James F. Cox III, Ph.D., TOCICO certified in Finance & Measures, Project Management, Supply Chain Logistics and Thinking Processes, CFPIM, CIRM, Jonah’s Jonah, Professor Emeritus, was the Robert O. Arnold Professor of Business at the University of Georgia. Prior to an academic career of over 30 years, he held positions in industrial engineer and production planner in industry and the construction engineer in the military. He taught Jonah workshops and numerous TOC workshops and programs.

Dr. Cox’s research has centered on TOC for over twenty-five years. He recently co-edited (with John Schleier) the TOC Handbook. He has written three books on TOC and has authored/coauthored over 90 articles in top academic and practitioner journals including Decision Sciences, the Academy of Management Review and Journal, Production/ Operations Management Journal, MIS Quarterly, International Journal of Product Research, Production and Inventory Management Journal, and Industrial Engineering. He was the coeditor of the APICS Dictionary (five editions with John Blackstone) and more recently coeditor of the TOCICO Dictionary, 2nd edition.

Dr. Cox, an APICS member for over 35 years, held numerous chapter, regional, and national offices (BODs for 4 years, VP-Research for 2 years, Foundation BODs 9 years including 4 as president). He also served on the founding TOCICO Board of Directors and as its first director of certification. He has spoken at over 50 APICS and other professional organization chapter meetings, several regional seminars and several international conferences on TOC. He has received the APICS Voluntary Service Award and the TOCICO Lifetime Achievement Award for his contributions to the field. He is currently serving on the TOCICO Board of Directors and has worked to develop the TOCICO video presentation and webinar database, the white paper series, and the video portals and annotated bibliographies.
Biographical sketch: Victoria J. Mabin

Victoria J. Mabin, PhD, FORS, PHELT, is Professor in Management at Victoria Business School, Victoria University of Wellington, New Zealand, where she specialises in problem solving/decision making using Theory of Constraints and a range of operations research/management science methods. Vicky has been active in TOC since 1986: in 1987 she spent several months in the USA, as a Visiting Research Fellow at George Washington University and visited many companies using TOC. She was responsible for the first application of OPT in NZ at Expozay International, and has continued to use TOC in her research, consulting and teaching. As Victoria Business School’s first Associate Dean Teaching and Learning, she found the TOC tools invaluable for developing Assurance of Learning processes and leading initiatives to improve teaching and learning at the Business School for over 5 years in that role. Her publications include "The World of the Theory of Constraints: A review of the international literature" (2000), the lead chapter on the Thinking Processes in the “Theory of Constraints Handbook” (2010), and many journal articles on TOC, MCDA and related areas. She graduated PhD in Operational Research, University of Lancaster, UK; holds TOCICO certification in 3 areas, and the academic Jonah qualification in TOC; is a Fellow of the Operational Research Society (UK); past president of the Operational Research Society of New Zealand; and past Chairperson of the Wellington Chapter of the NZPICS. She has served on the examinations board for TOCICO, as an editor for the Decision Sciences Journal of Innovative Education, and International Transactions in Operational Research, and is currently Editor of the TOCICO White Paper Series. Prior to joining Victoria University in 1991, she worked for NZ’s main scientific and industrial research institute, working with business, government and industry on a wide range of strategic and operational problems. She has worked with many government organisations and not-for-profits on priority setting, both paid and pro bono.
Jessica Banks has been the TOCICO operations manager since 2009. As operations manager she is in charge of all TOCICO website updates, assists with conference planning and maintains the TOCICO certification exam process.

In 2007, Jessica graduated from Seattle University with a major in Criminal Justice and Forensic Science. While she was at university, she learned about her passion with computers. She started her own website development company in 2008, and has since gained new knowledge in her website skills by working for TOCICO. Jessica has also completed the EM526 Constraints Management course in 2010, taught by Dr. James Holt.

Jessica was born in Santa Monica, California, but raised mostly in Washington State. She lives in Covington, Washington with her boyfriend, a dog and cat.
Maryam Mirzaei graduated as an industrial engineer from Amir Kabir University, Tehran, Iran, and completed an MPhil by research on ‘Project Risk Management’ at Peradeniya University, Sri Lanka.

She worked for several years as project manager and manager of the Project Management Office (PMO) and was part of some of the largest construction projects in Sri Lanka including post Tsunami reconstruction projects. Such roles led to further interest in research on project and operations management.

Currently, she is undertaking her PhD research on ‘Achieving Project Success Using Theory of Constraints (TOC) beyond Critical Chain’ at Victoria University of Wellington, New Zealand.