

THE TOC Times

Avraham Y. Goldratt Institute

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Education: Expense or Investment?

When it comes to sourcing education that is degree awarding (i.e., undergraduate, graduate) or non-degree awarding (i.e., continuing education, executive education) how would you categorize the money allocated: *expense* or *investment*?

If you chose *expense*, was it because you have to justify the cost of education to senior management? Or, was it because education is typically found in the expense category of the balance sheet?

If you chose *investment*, was it because there is an expectation of receiving benefits; a return on the “education dollars” invested per se? Or, would a commitment to employee education and development position the organization to achieve competitive advantage in a knowledge-based economy?

Twelve billion dollars (US\$12B) were spent in the global executive education market, of which three billion were for executive MBA and MBA (Craimer and Dearlove, 1997). In a survey conducted by the American Management Association (1998), corporate spending on knowledge management consultants in 1997 was \$410 million, and was expected to raise more than ten fold to \$4.5 billion in 1999. In a Corporate University Exchange survey conducted earlier this year, of 175 organizations with corporate universities, the annual operating budget overall of the corporate university was \$15 million. For corporate universities with less than 5,000 employees, the annual operating budget was \$1.9 million. Lastly, of the estimated \$772 billion education and training market, approximately \$346 billion is tied to postsecondary education, corporate training, and continuing education (in W.R. Hambrecht + Co. report on corporate training, March 2000). Whether it’s expense or investment, one thing is certain – *the money organizations allocate to education isn’t pocket change!*

Do customers buy products, services, or solutions to problems? A customer’s perception of value is based on the benefits they expect to receive from acquiring a product or service. These benefits are usually the result of being able to pursue new opportunities, satisfy needs not yet being addressed, or resolving existing problems. Should one expect anything different when allocating money to education? If you chose *expense* did you get what you paid for? If you chose *investment* were you able to fully realize the expected return? How soon were you able to realize the return?



STEVE SIMPLICIANO
EDITOR-IN-CHIEF



(continued on page 10)

The Little School that COULD!

By Dr. Rexford H. Draman,
Contributing Writer

Dr. Draman is an Associate Professor of Operations at the Graduate School of Management, St. Edwards University, in Austin, Texas. Rex is also an Academic Associate of the Avraham Y. Goldratt Institute. He can be contacted at RexD@admin.stedwards.edu.

Three years ago in an effort to revitalize its MBA program, St. Edwards University in Austin, Texas took a hard look at its existing program. Having been founded by the Brothers of the Holy Cross, St. Edwards University has always maintained a strong focus on ethics and service to the community. Drawing on these roots the MBA program was restructured to reinforce the recognition that the “community” (both organizations and individuals) is our customer. This recognition resulted in the establishment of a number of different tracks / concentrations within the program. To insure these new tracks were able to effectively identify and deliver a concentration that meets the ever-changing needs of our community all of the new senior faculty (track chairs) recruited to lead these programs possess a large

amount of real-world experience and exposure. As a result, they are able to see past their individual disciplines and actively work together to continually develop, enhance, and integrate the class offerings.

In the fall of 1999 I was hired to head up the Operations concentration. What I brought to St. Edwards was a background in systems thinking and Theory of Constraints. More importantly, I provided the critical mass within the Graduate School of Management (GSM) that was necessary to solidify their acceptance of systems thinking, and expand their willingness to explore and understand how constraints-based applications can be applied and integrated within their disciplines. This summer, our Dean, Marsha Kelliher, along with Drs. Allan Pevoto (human resources) and David Trott (spirituality of self and organizational wellness) attended the Joint AGI/University Executive MBA Program Alliance Symposium held in conjunction with AGI’s annual TOC World event.

As a result of her exposure to the JEMBA symposium materials and attending the TOC Worldsm 2000 presentations across the hall, Dean Kelliher recognized the impact that TOC was having on businesses around the world. This realization led her to take the initiative to make the Graduate School of Management at St. Edwards University the first university in the United States to sign an Alliance agreement with AGI.

I am now in the progress of re-writing the description and enhancing the level of TOC content in all of the operations track courses. One of the first things we did along this line was to replace the traditional Operations Research course with what we call “Managerial Problem Solving.” The initial framing of this course came as

a result of my reading *The Unbounded Mind* (Mitroff and Linstone). The remaining courses are being transitioned as I write this. While this is a big first step, we (the Dean, the other senior faculty, and myself) believe it is just the beginning of a wonderful journey for our school, our students, and the community we serve. Let me elaborate on a couple of the initial steps in this envisioned journey.

Last month I started teaching the AGI’s Management Skills Workshop (MSW) to the Vice President of the College of Professional and Graduate Studies (CPGS), the CP GS deans, interested GSM faculty, and a few of the Vice President’s staff. Dean Kelliher has already talked to me about conducting a Jonah Program for faculty that need a more in-depth understanding of the Thinking Process skills beyond MSW to effectively introduce them into their classes. Her initial thought was marketing, human resources, and our capstone (strategy / policy) classes.

I am also busy working on a proposal for establishing an Executive (one weekend a month) Masters program in Systems and Constraints. The target market for this cohort-based program would be senior-level executives from organizations that are currently using TOC. The outcome of the program is threefold: 1) provide them with a solid understanding of “systems” and “systems thinking;” 2) provide a thorough understanding of the “applications” and “thinking processes” of TOC, and 3) facilitate their completion of an in-depth analysis of their organization or area of responsibility. If you are interested in this program, please drop me a line.

Finally, I recently completed a proposal to establish a center for systems and constraints here at St. Edwards University. The purpose of the cen-



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ter would be to serve as an international repository and development resource for “systems” and “constraints” knowledge. It is anticipated that such a center could sustain itself by continuing to develop, leverage, and disseminate the ever-growing knowledge base of systems and constraints to businesses, education (K – 16+), and the providers of social services.

While you can tell I am excited about the journey that lies in front of us, I must give credit where credit is due. None of this could have taken place without the understanding and support of my Dean, and the willingness of the senior faculty – Dr. Allan Pevoto, Dr. Kay Guess, & Dr. Michaelle Cameron – to look past their individual responsibilities and disciplines and see the inter-connectedness of their respective disciplines. To you all, I say, “Thanks and welcome aboard.”

Before earning his Ph.D. in Operations Management at the University of Georgia (1994), Dr. Draman spent 20 years in various manufacturing management positions. His dissertation and most of his academic research has focused on the use of TOC applications and thinking processes to business and strategic planning. In addition, he is also actively involved in establishing and developing new linkages between other systems based tools and techniques and the Theory of Constraints.



Network Members from the former Eastern Bloc

The UK office of AGI is the Regional Office for what was originally Southern Europe when AGI was established in 1986.

From 1989 all the large consulting firms swarmed into these countries,

Goldratt UK's TOC workshops & programmes

Goldratt UK's educational programmes are provided on various applications of TOC and the TOC Thinking Processes. These are designed for individuals who:

- Wish to learn more about TOC for personal development/enhance personal performance
- Require education in an area of TOC that their organisation uses
- Wish to explore further before investing in a full implementation of TOC

For the available programmes, descriptions, dates for the rest of 2000 and some of 2001, and other details, please visit www.goldratt.co.uk or go direct to www.goldratt.co.uk/progsch.html.

charging large fees for results which were often less than satisfactory. Those of you that attended the Iskra Mehanizmi presentation at TOC WorldSM 2000 heard this from Milan Zajc (Scepter d.o.o.), our Certified Expert in Slovenia. Increasingly, people are looking for proven methods that can be learned and disseminated without the traditional consulting dependency syndrome.

Many of you will also have heard of the success of Heiti Pakk and his team (OU A.Y.Goldratt Baltic) in Estonia, Lithuania and Latvia (the Baltic States) in creating the attendance of over 500 people at The Goldratt Satellite Programme in 1999 together with selling many thousands of Eli's books. At the end of August this year, Oded Cohen, AGI Partner, and I visited the Czech Republic to support our Certified Expert Mirek Smira (Goldratt-CZ) in the delivery of the second four of a 4x4 for a wood processing company, Lukaavec. Mirek had facilitated the viewing of the tapes during the first four. This was not an easy assignment as very few of the management team, other than the CEO, were very comfortable in English. Despite this we had

a very successful 4x4 which Mirek has converted into an Enterprise Wide Improvement Solution.

At the end of September, Oded and I visited Poland to conduct the second part of a 4x4. We worked with the current three partners of Werbel Sp. z o.o., who are a new consulting company that has chosen what they call the “TOC Compass” as a major product offering to the market.

For the complete article, go to www.goldratt.com/toctquarterly/eastbloc.pdf.



**MEMBERS OF THE UK NETWORK,
WITH AGI UK PARTNER ODED
COHEN IN CENTER**

Bringing TOC to the Celtic Countries

By Mike Dinham,
Contributing Writer

Mike Dinham is a Certified Associate of Goldratt-UK and can be contacted at m.dinham@goldratt.co.uk.

In 1996/97 I started, with the help of my good friend Bryan Logan, by arranging a series of three-hour introductory sessions on production and project management in Wales and Ireland. These seeding events created interest, but no real movement.

A breakthrough came when Bryan Logan, who works with the Man-



MIKE DINHAM

agement Institute at the University of Ulster, introduced me to Kevin Helferty, a client executive with the Industrial Development Board for Northern Ireland (IDB). This is an influential Government body responsible for encouraging and supporting indigenous industry, whilst at the same time attracting inward investment.

Kevin showed an immediate interest in TOC, although with a mild degree of healthy scepticism. He agreed to arrange and fund a pilot project with two SMEs, (Small-Medium Enterprise) both local manufacturing companies. To cut a long story short the results were impressive, and the upshot is that the IDB has now formally commissioned from AGI a 'TOC Business Improvement Programme' which is offered as part of their Business Excellence Service. This service provides a range of best practice initiatives aimed at improving competitiveness.

The 'TOC Business Improvement Programme' started officially in February this year and to date we have

some twelve companies at differing stages of interest and implementation, with a target of around twenty. The programme is funded by the IDB, with the participating company contributing a lump sum payment on the achievement of agreed results.

Read the complete article at www.goldratt.com/toctquarterly/idb.pdf.

From India: A Production Implementation

by Ravi Gilani,
Contributing Writer

Ravinder (Ravi) Gilani is the Managing Consultant for Time n Cash, located in New Delhi, India. Ravi is a production licensee. He can be reached through his e-mail at time_n_cash@vsnl.com.

ABC is one of the group companies of a large-family owned industrial house supplying machines to refractory manufacturing units. It was started 30 years ago, and employs about 200 people.

The industrial environment was changing rapidly. Steel and cement plants, the prime users of refractory, were experiencing the effects of increased competition coupled with low growth in demand. In this environment where ABC's customers were finding it difficult to hold their head above water, demand for ABC's machines shrunk drastically, and margins were under severe squeeze. As the demand for their propriety products literally vanished, ABC started accepting orders for special machines and equipment as per their customer's design. The margins reduced further.

The owner could not go on funding losses in the hope that the market would improve in future. The owner decided that he had no choice but to close the business shortly thereby jeopardizing the livelihood of 200 families.

At this stage the owner came across Dr. Goldratt's best selling business novel *The Goal*, and became aware of the concepts of the Theory of Constraints (TOC). The owner asked me if I could take up the challenge to help him turn around his plant using TOC concepts in six months if not in three!

I was excited, and apprehensive at the same time. Excited - as I had the opportunity to make a difference in the lives about 1000 humans, and apprehensive - could it be done?

Read the full article at www.goldratt.com/toctquarterly/india.pdf.

TOC SIGHTINGS

Western Data Systems to Bring Theory of Constraints Capabilities to Aerospace & Defense; U.S. Navy Among First to Select Theory of Constraints Solution.

This press release is re-printed in full as originally released with permission from Western Data Systems.

INDIANAPOLIS – Nov. 8, 2000 – Western Data Systems (WDS), the leading supplier of Enterprise Resource Planning and Supply Chain Planning solutions for the aerospace and de-

fense (A & D) industry, today announced that they

are the first major ERP provider to offer support for Theory of Constraints (TOC) management in its core product. Over the past year, WDS has worked with the world's foremost experts on TOC along with industry practitioners to define and begin development of the key TOC capabilities within the CompassENTERPRISE(R)



solution. The solution is focused on the practical application of TOC management and measurement methodologies tailored to the needs of A&D manufacturing and maintenance, repair, and overhaul organizations. Capabilities include: critical chain, drum-buffer-rope, and buffer management. The announcement was made in Indianapolis, Indiana at the Dr. Eli Goldratt "Necessary but not Sufficient" conference where Dr. Goldratt presented his latest work of the same name.

The new CompassENTERPRISE TOC functionality provides the added capabilities needed beyond standard ERP to use the TOC as the overriding approach to production and organizational management. It builds on the CompassCONTRACT(R) database and Adexa's collaborative planning technology to provide project, manufacturing, and re-manufacturing management with powerful new tools for utilizing the TOC management approach to dramatically improve throughput and customer responsiveness. WDS' software capabilities to support TOC are being developed initially along with the integrated CompassCONTRACT/Adexa's iCollaboration, and are targeted for release by January 2001.

The U.S. Navy's Naval Aviation Depots will be among an initial group of customers to utilize the TOC functionality.

Trademarks: The WDS logo and CompassENTERPRISE are registered trademarks of Western Data Systems of Nevada, Inc. All other names indicated are trademarks of their respective companies.

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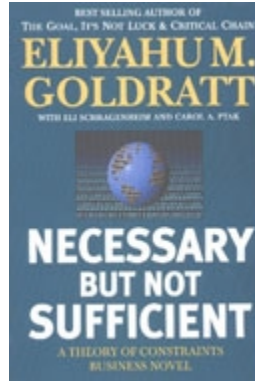
"Released!"

Five star rated by Amazon and Barnes & Noble

Necessary But Not Sufficient is now available. This collaborative effort between Eli Goldratt, Carol Ptak and Eli Schragenheim will definitely get readers sitting up and debating IT investments!

Carol A. Ptak, CFPIM, CIRM, Jonah. A leading authority in the use of ERP and Supply Chain tools to drive improved bottom line performance, Ms. Ptak's expertise is well grounded in over two decades of practical experience as a successful practitioner, consultant and educator in manufacturing operations. Her pragmatic approach to complex issues and dynamic presentation style has her in high demand worldwide on the subject of how to leverage these tools and successfully become an e-business. Ms. Ptak is the President and CEO of APICS, The Educational Society for Resource Management for the year 2000 and is employed by IBM as a Program Director for Mid-Market solutions.

Elyakim Schragenheim is one of the pioneers in TOC, and is the recognized authority in ERP related simulators demonstrating how decisions made to optimize a local function will suboptimize the enterprise. He is the author of *Management Dilemmas*, *The Theory of Constraint Approach to Problem Identification and Solutions*, and collaborated with Carol A. Ptak on her book, *ERP, Tools, Techniques, and Applications for Integrating the Supply Chain*. He is a



frequent speaker in many international conferences in the US, UK and Israel, on topics concerning TOC, learning from experience and information systems in operations. A former Partner of the A. Y. Goldratt Institute, he is the Chief Executive Officer of his own company, Elyakim Management Systems.

To order your copy of *Necessary But Not Sufficient*, visit the Books and Videos section of www.goldratt.com.

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Drum-Buffer-Rope: Put to Work by the First Shot

A personal experience with TOC

***By Mohammad Ajlouni,
Contributing Writer***

Mohammad holds a Bachelors of Science degree in Chemical Engineering from the University of Aston in Birmingham, UK, and a Masters of Science in Industrial Engineering from the University of Jordan. He has had a career of 18 years working at a number of industrial organizations in both the public and private sectors. Currently Mohammad operates his own consulting company, the Integrated Engineering and Management Systems. He represents PROMODEL, Incorporated in Jordan and the Middle East. PROMODEL is one of the largest simulation software companies in the United States.

AMMAN, JORDAN - I came across TOC on a number of occasions during my university days and later through my own research work. I never paused to read thoroughly about it, but every time I came across it I just related it to OPT, which I looked at as one of those many commercial software products that popped up in many operations management text books. I knew that TOC was the driv-

ing engine of OPT, but what I did not realize that there was a great philosophy hidden behind it.

A few months ago, I received a newsletter from a simulation software vendor describing how simulation can be used to resolve constraint problems. In the article one statement drew my attention and I paused thinking deeply about it. The statement said: “The strength of a chain is determined by its weakest link.”

A simple statement, expressing a “common sense” fact, yet, laid down the principle of an important theory. This triggered my desire to read more about TOC, and started to review my reference books and click some related links. Eventually, I decided to read *The Goal*. Since the book was not sold in my country, I asked my sister-in-law who was paying a short visit to the USA to buy it for me, and so she did.

I read *The Goal* with full concentration. I had to read some chapters more than once to grasp the details and bind the facts together. At the end of the book I read the saga written by Dr. Goldratt, in which he described how many readers failed to apply TOC to their plants by merely reading the book. He said that he had to publish his second book, *The Race*, in which he explained how to implement TOC through the logistical procedures of the drum-buffer-rope approach.

I thought that I had engrossed the concept and the technique by just reading the book. To assure myself, I decided to try out. Since there was no plant available for carrying out my experimentation, I got down to my computer and wrote a simulation program.

I constructed an animated computer simulation model of a shop with five machines. Two parts, A and B, flew through the shop each with known routing sequence, process times, and lead times. The process time of each lot of parts (a job) on each machine, was the total time required to set up the machine and pro-

cess the lot, plus an induced element of variability. Machine no. 3 was deliberately made the bottleneck. Parts A and B were released at timed intervals according to plans spanning their lead times. At the end of the line, a subassembly product was assembled by mating (2A+B). It was assumed that all production was demanded by the market. The two upstream machines were subject to random failures and random repair times (randomly hit by Murphy).

The animation mimicked the situation in a typical real shop with high congestion and long lead times. I ran a number of replications each with a different random stream seed in order to be able to infer the results statistically. The results showed long mean flow times, long average queuing times, large work-in-process, and a long queue of part A waiting for assembly.

The next scenario was to apply the drum-buffer-rope approach. In practice, this would have been done through the process of “IDENTIFY, EXPLOIT, SUBORDINATE, and ELEVATE” the bottleneck.

The following procedures were carried away in applying the DBR approach:

1. The throughput for machine no. 3 was set as the master schedule (the drum) which dictated the material release into the shop.

2. Experimentation with the model showed that the time to consume 6 jobs (the buffer) present in the buffer of machine no. 3 was adequate to rebuild enough inventory as a protection against Murphy and to keep jobs going through machine no. 3 without any loss of production time.

3. The presence of more than 6 jobs in the buffer of machine no. 3 was used as a control signal (the rope) to stop material release for one hour. This rearranged the material release in order to save some spare capacity within the non-bottleneck machines.

Running this scenario proved that

the targets were achieved. The results showed that machine no. 3 was 100% utilized with enough inventory at all times to keep the machine running whenever one of the upstream machines was hit by Murphy. The utilization of the non-bottleneck machines ranged between 50% and 75%, thus allowing spare capacities for letting jobs reach the bottleneck and the assembly area as quickly as possible. The mean flow time improved considerably with less average queuing times. The work-in-process was reduced dramatically. At times during the simulation run, the buffers of the upstream machines were seen to be loaded by jobs due to a stoppage, but soon after recovery, the machines consumed the stock of jobs in a short time because the jobs processed at these machines were meant to have small lot sizes. The bottleneck was still a bottleneck, but it was elevated in terms of controlling throughput and inventory without the need for increasing its capacity: a very important payoff from DBR! (Many people would just jump to this step directly.)

So, I proved to myself that I could do well in a real plant (not mentioning the real problems that one would face in a real environment). I also proved that, being exposed only to *The Goal*, I had succeeded to put the DBR approach to work.

Well, I hit the target by the first shot!



My Thoughts on Project Requirements

By Michael W. Bromley, MBA, PMP

Michael Bromley earned a bachelor degree in Industrial Technology and a Masters in Business Administration at West Texas A&M University in Canyon, Texas. He is employed by Mason & Hanger Corporation at the Pantex Plant, in the Engineer-

ing & Construction Department. He manages the design and construction of facilities and infrastructure at the plant. He is a member of the Project Management Institute and a certified Project Management Professional.

Most project managers are aware that one of the best ways to ensure success of any project is to develop a very good baseline scope document and use it as a tool to control (and often defend) the technical, quality, cost and schedule baselines over the life of the project. This document may go

by any one of several names - Conceptual Design Report, Project Design Statement, Project Execution Plan, etc. It describes the scope of the project, the funding source, the people required to perform the project, the project schedule, assumptions and constraints, and other characteristics of the project. However, many times the document falls short in one critical area - requirements identification.

The applicable laws and regulations, government and industry standards and codes, and project drivers, together with the functional, financial and aesthetic aspects of the project, usually

make up the body of requirements for the project. Now, we all know requirements change over time. Some are superseded by other requirements, some become obsolete, some may just become null and void because the industry or regulatory driver (or maybe the person who interpreted the regulation more conservatively than really necessary) has gone away. If the requirements for your project, and how the project will meet those requirements, are not described in sufficient detail in your scope document, including code, standard and regulation names, numbers, year of issue, etc., and you declare that this is the "Code of Record" for this project, then you are setting yourself up for failure. Why?

Because otherwise, when your project is finished, it will be scrutinized and measured against the requirements in effect when it is finished, not when you first scoped it out. Inevitably, as the project goes along, people will bring up new or different requirements that impact the project in some way. When this happens, always always demand to see the requirement and the source of the requirement in writing.

If the requirement is a law or government regulation that you missed in initial scoping, or a new regulation that has no grandfather clause, then there is no choice but to assess the impact and then incorporate the requirement into the project if feasible, or else stop the project. If it is just a new guidance document, or a plant standard or procedure, or just a new or different business practice or policy, then it is a negotiable scope change.

If there is money and time available, and if all stakeholders agree in writing that the requirement is value-added, you would incorporate the requirement and revise the living scope document accord-

The TOC Times Quarterly Edition welcomes Professors Maria Teresa Gutierrez, Fermin Munilla Gonzalez, Pedro Aliaga Palomino and Lino Tellez Perez from Houlguin University, Cuba.

The TOC Times Quarterly Edition is circulated worldwide to the following countries...

Argentina	France	Malaysia	South Africa
Australia	Germany	Mauritius	Spain
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Finland	Latvia	Slovenia	Zimbabwe

ingly. In summary, when you are doing initial scoping for your project, try your best to capture as many of the requirements as feasible, be prepared to defend them, as you surely will be called upon to do, and keep abreast of newly forming requirements if at all possible.

Michael's article highlights very important aspects of projects; defining scope upfront and making sure that project requirements are documented, key criteria that the success of the project (and you) will be evaluated on. In some of the project implementations that AGI became involved in, this was definitely one of the conflicts that surfaced, especially when the project was in trouble. What was the scope or outcomes/deliverables suppose to be? If you take this concept into a software development environment it becomes even more interesting. The conflict is: to start early and do re-work as the scope becomes clearer, or, wait until the definition/requirements are firm and start later. All of this is driven by the race to be first to market. Important things to observe, indeed.

A question to our readers - how can TOC and the Critical Chain solution be used to develop upfront requirements? How do you deal with conflicts that develop down the line between contactor/client and between project manager and resources? What happens to time, budget and scope when there is a change of mind halfway through the project? What experiences do you have with these three common project requirements, and what can one do to overcome it and meet or beat them?

Feel free to write to me and share your experiences in projects with us, and how you overcame these critical issues. Write to me at rika.visser@goldratt.com.



HP Consulting Division In Czech Republic Adopting Critical Chain

By Milan Sterba

HP is the leading systems integrator in Czech Republic according to a recent Top 10 Systems Integrators Award, organized every year by the Czech Systems Integration Society. The delivery of the systems integration projects is focused in the HP Consulting division. A typical delivery consists of analysis, design and implementation of a complex IT [information technology] solution, for example a core information system of a health insurance company, a PKI infrastructure and messaging services system in a financial institution, a billing system in a telecom operator or a CRM [customer relationship management] system for a bank.

To build and deliver such complex systems, where HP bears the total guarantee in terms of time, functionality and budget, HP Consulting uses its own consulting resources, third parties and of course, for parts of the projects, also resources of the client.

The consulting business in Czech republic in general and especially the HP Consulting business have grown dramatically over the last year. When planning this aggressive growth strategy, the management of HP Consulting realized that the traditional approach to project planning and resource management in a multiproject environment would no more be able to support the business objectives.

Over several years of economic recession preceding this period, HP Consulting had been using HP's well proven project management methodology, Focus PM, relying in the resource management area on more or less informal processes based on the fact that the team was relatively small and all problems could be solved either face to face or by escalation to the first level of management.

This no longer holds true in a situation where the numbers have doubled in a year in terms of money as well as the number of resources involved. Also the number of projects run in parallel has increased. Currently HP Consulting in Czechia is running very approximately 20-25 projects in parallel with 60 people of own staff (project managers, consultants) and a similar number of partner staff as well as people from client involved in the projects. That means that in the end we have to coordinate the work of more than 200 resources.

This new situation requires a new approach to project management and resource planning. That's why HP Consulting decided a year ago for a step-by-step implementation of the Theory of Constraint's critical chain method of project management.

We first started with a pilot project where four key projects were identified, their participants trained in the theory and tools by our local Goldratt CZ consultant, Mirek Smira. These four projects were planned and later managed according to the principles of critical chain with regular weekly updates.



MILAN STERBA

Due to the size of our organization, the tradition we had in MS Project and the necessary investments, we chose ProChain as the tool to start with. Goldratt CZ helped us not only in teaching us but also coaching the project map [network] creation process, defining the update strategy and the necessary changes in our business processes. They also helped us to get in contact with other users of this method and tools so we could share some experience.

The initial attitude of the HP Consulting team towards the critical chain method was far from enthusiastic. We

had a long tradition of managing complex projects, experienced project managers - a well-established core team with its habits and well-defined project controlling and administration procedures given from the corporate management that we have to respect. So why change?

On the other hand we had resource management problems, although alleviated by the fact that we were taking new people on board and we saw that our old good ways of doing are no longer applicable to our growing business.

After the first four projects had successfully started we gradually trained all our project managers and a significant part of the consulting staff and gained more and more support for the full implementation of critical chain. It was amazing to see the changes in attitude of people once they went through the Goldratt CZ training.

Initially the projects ran in isolation. It is only after several months that we started to pilot the multiproject environment. We have used ProChain Plus to do the project staggering and ran several rounds of updates with four parallel projects to understand how would the system work within our environment. After this second pilot phase HP Consulting management has decided to go for a full implementation in HP Consulting Czech Republic. This decision is based on the fact that all pilot projects were under full control and finished very successfully. The full implementation will be based on the same set of tools as the pilot.

Today we have 90% of our staff trained and we start the full implementation, which should be operational in the first quarter of 2001. Our successful pilot has solicited a lot of interest in HP Consulting at the regional level (Central and Eastern Europe, Middle East and South Africa). Together with Goldratt CZ we are going to organize first trainings for project managers and



MIREK SMIRA

create a competence centre for critical chain method implementation for the region.

Mirek Smira received his degree from the Prague School of Economics, majoring in International Relations and Foreign Trade. In 1990 he started his own consultancy - InterQuality, Ltd., currently with 12 employees. In 1999 Mirek took Project Management the TOC Way Expert Program, and afterwards started a sister company providing only TOC based solutions, originally known as IQ-TOC, Ltd. In early 2000, Mirek renamed IQ-TOC, Ltd to become Goldratt CZ, Ltd. Their three full-time consultants work closely with AYG (UK). Mirek Smira mostly works in the area of project management with IT companies and mobile connection operators.

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TOC WORLDSM 2001
Location announced!

TOC WorldSM 2001 will be held at the **Century Plaza Hotel & Spa** located in **Los Angeles California**. This historical hotel property, which has been host to every U.S. president since its opening in 1966, is undergoing a 25 million dollar renovation project that will expand it's meeting space, upgrade it's technology, and launch the opening of THE largest spa in Los Angeles. Block some extra time out in your schedule to pamper yourself with one of the many relaxing treatments at SpaMystique, or bring your computer work out to one of the many poolside cabanas with internet access.
Los Angeles

provides easy transportation access via Los Angeles International Airport, which is a very short distance from the hotel. The city of Los Angeles will serve to draw many potential clients from the Silicon Valley, and Sand Hill areas of California – home to major corporations and venture capitalists.

Located a mere 20 minute walk away from the infamous Beverly Hills and Rodeo Drive, The Century Plaza Hotel & Spa has garnered considerable fame since it's opening, playing host not only to U.S. presidents, but international dignitaries, royalty and, of course, Hollywood celebrities.

With spectacular new guest rooms and suite accommodations, this landmark hotel has become an even more memorable destination. Next to Beverly Hills on the fashionable Westside - in the heart of the world's entertainment capital - the hotel offers a California experience unlike any other. A prime location. Great weather. And beautifully landscaped grounds - it is an urban resort, providing you with the rest and relaxation you desire along with the easy access to nightlife and local attractions. From the one thousand forty six guest rooms and suites to the impressive array of first-class amenities and a choice of dining experiences, to a look at the Hollywood of yesterday and today, there is nothing ordinary about the extraordinary Century Plaza Hotel & Spa. Book your room now at the discounted conference rate of \$199 per night plus tax, by dialing 310-277-2000. The regular standard room rate is \$350 per night at this glorious property, so we encourage you to make your reservations early!

Mark your calendars for **June 19 to 22** - and prepare for the conference of **The Century!**

AGI has applied through the US Patent & Trademark Office to register TOC WorldSM as one of its marks.

Until this is finalized it is appropriate to use the legend service mark (SM) in conjunction with TOC WorldSM.

Farewell and Good Luck Carole!

Carole Thompson has worked for the last decade supporting the efforts of AGI's UK office and network. We all wish her well.

Dear Friends,

I have worked for the Institute for 9 1/2 years and have enjoyed, learned, been 'up held' and supported, attained achievements that I never thought that I could achieve and received recognition from the most unlikely areas. But, **most of all**, I have made life long friends in a family atmosphere. The latter makes my decision to 'move-on' very difficult.

I am in the fifth year of attaining my Open University BSc in Psychology (which would not have been possible without Oded's help) and I only have one more year to go. I have therefore taken a position nearer home so that I can devote more time to this last year to ensure that I achieve what I set out to do.

I will be working as Marketing Administration Co-ordinator for PORCHE, which is far less travelling and gives me an insight in to an area which I hope I will be able to use in a couple of years time to assist me in my personal goal.

I would like to say particular 'thanks' to the following people:

1. Oded Cohen - for his perseverance and assistance in all that I have tried and even failed in.
 2. Martin Powell - for his personal help over the last year and a half in assisting me to achieve my goal.
 3. Ros and Yamina - for their cheerfulness and constant friendship.
 4. Millie and Donn Novotny for 'enfolding' me in their family.
 5. Wendy - for her advise and help over the years.
 6. Eli - for the 'pats on the back' that have spurred me on.
- There are so many other people

Sylvia, Robbin, Stacy, Charlie and Denise, Tracey and Dale and many more. I hope that you will all keep in touch and that I will meet up with you again. If you would like to have my new details, please let me know and I will forward them as soon as I have them.

Best wishes,
Carole

Education: Expense or Investment?

continued from front page...

Perhaps one way to answer these questions is by judging to what extent particular problems have been solved. Let's at least allow that the problems have diminished to the extent that you're able to refocus your attention on other pressing issues. Do you or your organization find that:

1. You're unable to keep up with the pace of change?
2. Projected earnings fall short of expectations?
3. Product and services don't generate sufficient revenues?
4. Customers cannot sufficiently differentiate the value of your product?
5. The measurement system does not facilitate profit making?
6. Empires are built at great cost?

There is a root cause, a *core conflict* that allows these problems to persist. For those who attended TOC WorldSM 2000, this core conflict (Figure 1.) was featured in Tracey Burton-Houle's educational session entitled *Strategy to Tactics*, and in Plenary V, *Strategy*, of the JEMBA 2000 Symposium

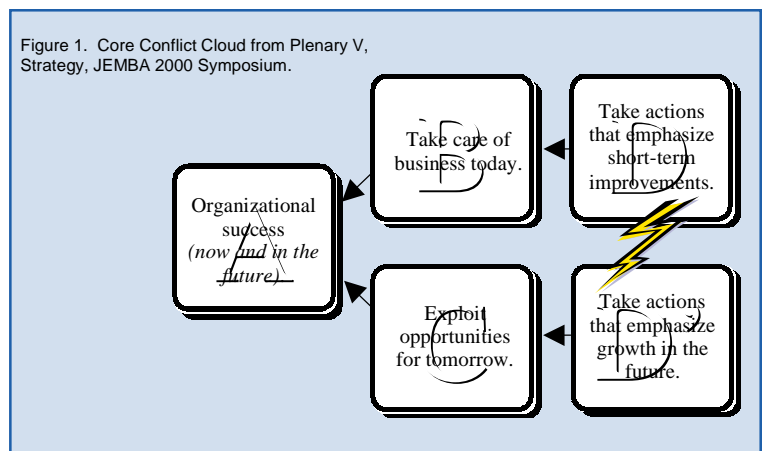
at TOC WorldSM 2000.

For brevity's sake, I won't detail how the core conflict was derived. But if you would like to see how the Core Conflict Cloud process was applied using the problems above, write Rika Visser an e-mail at rika.visser@goldratt.com.

When we say, "Take actions that emphasize short-term improvements," we mean actions such as "managing to budget, cost leadership, and differentiating on value." When we say, "Take actions that emphasize growth in the future," we mean actions such as "creating strategic partnerships and alliances, mergers, acquisitions, and diversification." And, if your caught in the middle, attempts to resolve the conflict are through actions such as returning to core competencies, restructuring, reorganizing, and re-engineering. As a consequence of this conflict strategies are discarded or negated due to unsatisfactory tradeoffs between short-term performance and future growth.

Today's problems consume a significant amount of management's time, energy, and attention - not to mention resources and the goodwill of their people. Does your organization find it increasingly difficult to integrate its "business" functions? If at least three of the six aforementioned problems exist in your organization (there may be more), the relevant question is, "What must be done to resolve the conflict?"

In Figure 1, why does one side win



out over the other? Could it be because *the time that it takes to achieve growth is longer than the time the stakeholders are willing to tolerate?*” Indeed, “Tell me how [and when] you’ll measure me, and I’ll tell you how I’ll behave!”

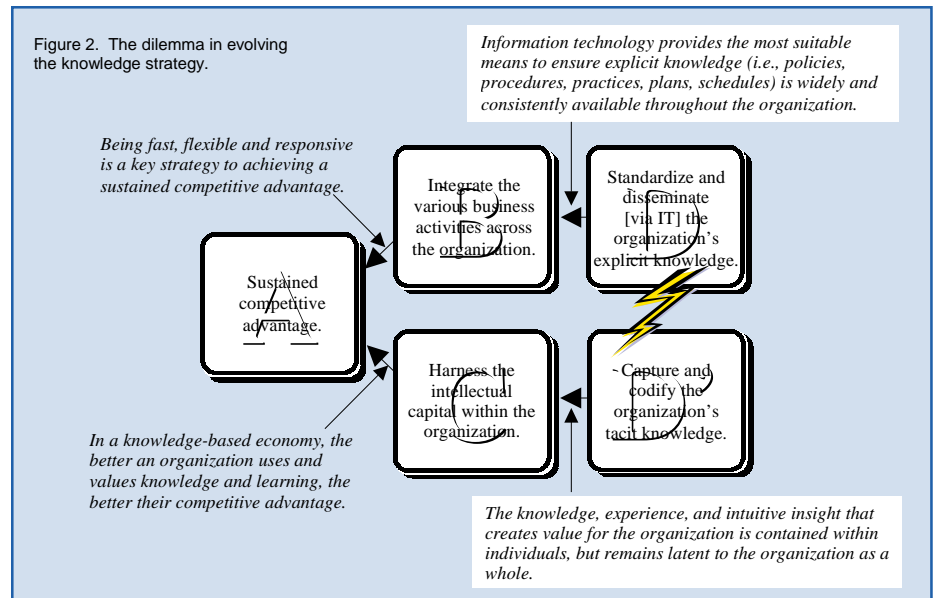
The reason the conflict exists is because *the actions we take to achieve immediate improvements are not the same actions we’d take to secure growth in the future.*” To challenge the assumption, the direction of the solution becomes clear: “*The actions we take to achieve short term performance pave the way to achieve growth in the future.*”

So, how does this have anything at all to do with the question poised at the start, “Education: is it expense or investment?”

“*Pursuing information technology just to remain competitive.*” Is this an action that emphasizes short-term improvement or one that emphasizes growth in the future? “*Capturing the intellectual capital within the organization for sustained competitive advantage.*” Is this an action that emphasizes short-term improvement or one that emphasizes growth in the future?

Organizations that want to be successful in the knowledge-based economy of the 21st century understand the strategic importance of capturing the intellectual capital within an organization as a prerequisite to achieving sustained competitive advantage. Certainly when viewed in this context, education is definitely an investment. Unfortunately, when it comes to harnessing the intellectual capital of an organization, the “what to” conflicts with the “how to” as depicted in Figure 2:

The fact is that organizations need both: (D) the means by which to standardize and disseminate explicit knowledge, and (D’) the means by which to capture and codify tacit knowledge. However, I would submit that “D” wins out because it’s



easier to capture, translate, and measure the impact of explicit knowledge on organizational performance over that of tacit knowledge. Furthermore, the conflict exists because the technology for standardizing and disseminating explicit knowledge is more established than the methods and processes to capture and codify tacit knowledge.

Explicit knowledge is knowledge that is formal, systematic, and more easily quantified. Examples include policies, procedures, practices, and product or service information. Tacit knowledge consists of two dimensions: technical and cognitive. Technical tacit knowledge can be thought of as knowing something so well that is accomplished successfully as if it were second nature. Cognitive tacit knowledge is the sum of those things that make us who we are (e.g., personal beliefs, mental models, values, assumptions). Since they effectively act as filters, they influence how we make sense of and relate to reality. Because they are deeply ingrained to the extent that they are taken for granted, one could define them as archetypes. To understand this subject in more detail, please refer to *The Knowledge-Creating Company*, Nonaka, I., and Takeuchi, H., (1995).

What shall it be: Technology or In-

tuitive insight? Can you think of any viable injections to the Evaporating Cloud in Figure 2?

Given the need for organizations to develop a comprehensive knowledge strategy, does TOC provide a means by which organizations can tap into and document its tacit knowledge? If so, “How?”

For those who attended Eli’s recent *Necessary But Not Sufficient* event in Indianapolis, Indiana, he opened the event with these two axioms:

1. Technology can bring benefits if and only if it diminishes a limitation.
2. Long before the availability of the technology we developed modes of behavior, policies, measurements, rules to help us accommodate the limitation.

Do they relate to the Evaporating Cloud in Figure 2? If so, in which way do they relate? Your comments are welcome. If you would like to comment on this article, please submit them to Rika Visser at rika.visser@goldratt.com or me at steve.simpliciano@goldratt.com.



Happy Holidays and Best Wishes for a prosperous New Year,

From the editorial staff of the TOC Times