Important Issues of CCPM

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Oded has authored multiple TOC articles and contributed to numerous TOC books.


Together with Jelena Fedurko Oded has co-authored the book Theory of Constraints Fundamentals.

Oded is International Director of TOC Strategic Solutions Ltd and Founder and Co-President of TOCPA.
TOC Direction of the Solution

Low Performance Measurements

UDE

UDE

UDE

UDE

UDE

UDE

High Performance Measurements

DE

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TOC direction of solution

TOC Injections

Current Reality

Future Reality

NBRs

PIVOT TOC

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TOC Direction of the Solution

Use the TOC Pivot to Better Manage the Flow

Focus-Flow

- Time Constraint
- Time Buffers (CCPM)
- Using Buffers for planning and Controlling the Execution
CCPM — Critical Chain Project Management:
The TIME constraint of the project is presented through the Critical Chain – the longest chain of dependent activities. Managing the project through the CC is geared to finish the project in a safe and quick way.
Managing the FLOW in Projects

Information Flow

Decisions Flow

% Chain Complete

Project Buffer

Process flow

Goal units

Management / Workforce
Buffer Management – a mechanism that informs management about the true situation with the flow through the continues update of the buffer status as compared with the plan.

During the execution Buffers are used for:
1. Priorities for assigning resources to perform tasks.
2. Prompting recovery actions to ensure enough buffers for the rest of the flow.
3. Identifying reoccurring problems in the flow for POOG.I
4. Buffer management is always oriented to the future.
When project is in RED – management is expected to come with recovery plan.

Recovery – in the right direction.
TOC Solution for Single Project Management

Strategy:
Projects are completed On Time, In Full & Within Budget

Tactics:
The Project organization implements Critical Chain project management

Mindset:
Customer orders are the Prime Driver – the Drum

Planning Injections 2-4

Execution Control Injections 5-9

CCPM-Injection 1
Achievement of the delivery commitments is established as a Prime Measurement for managing project environment

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TOC Solution for Single Project Management – Planning

Tactics:
The Project organization implements Critical Chain project management

Mindset:
Customer orders are the Prime Driver – the Drum

Planning Injections 2-4:
- Project Plan
  - CCPM- Injection 2
    - Project Planning Diagrams are in place with tasks resourced and estimated for duration (while estimates of durations are “challenging but achievable”)
- Critical Chain
  - CCPM-Injection 3
    - Critical Chain is determined through resolving resource contention
- Buffers
  - CCPM -Injection 4
    - Buffers are inserted in strategic points

Execution Control Injections 5-9

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Managing the Project Planning
The TOC way

Criteria for a Good Project Plan

1. **Providing financial benefit** – by the successful completion of the project on time, within budget and according to the promised specification – the project generates Throughput for the contractor of the project.

2. **Realistic** – the plan does not contain conditions that are known to be unrealistic (such as resource loading over 100% of available capacity).

3. **Immunized** against disruptions (Murphy and uncertainty).
Managing the Project Planning
The TOC way

The quality of the Project Plan:

- The better the plan the less surprises experienced during the execution phase.
- Any inputs, reservations or conflicting views that are critical for the successful completion of the project have more chance to be surfaced and sorted out prior to the start of the project.
- The project manager takes a leading role in ascertaining all critical input and incorporating it in the plan.
Planning Injections 2-4

Planning Injections are NEW features of project management

Injection 2 – Project Diagrams
New specifications
Existing project plans are subject to rigorous logical checking and ambitious time estimations.

Injection 3 – Critical Chain
New concept
Replacing critical path of the traditional project management with Critical Chain removing resource contention.

Injection 4 – Buffers
New concept
Conscious and open provision for additional time to protect from uncertainty.

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Managing Project Execution
The TOC way

Criteria for a Good Execution Control

1. **Priority** – the process of assigning resources should be linked to the overall importance of the project and its own progress.

2. **Recovery** – the execution processes direct management in taking actions that bring projects to be back on course for on-time completion.

3. **POOGI** - the system provides statistics to enable management to continually learn and improve planning and execution control.
**TOC Solution for Single Project Management – Execution**

**Tactics:**
The Project organization implements Critical Chain project management

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<tr>
<th>Mindset:</th>
<th>Planning Injections 2-4</th>
<th>Execution Control Injections 5-9</th>
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<tr>
<td>Customer orders are – the Drum Injection 1</td>
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**Report & priority**

<table>
<thead>
<tr>
<th>CCPM-Injection 5</th>
<th>Look ahead</th>
<th>Recovery</th>
<th>POOGI</th>
<th>Critical resources</th>
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<td>Tasks are performed according to the status of their corresponding buffers through using Buffer Management</td>
<td>CCPM-Injection 6 Resource availability is monitored in anticipation of a new planned task</td>
<td>CCPM-Injection 7 BM for recovery actions is in place</td>
<td>CCPM-Injection 8 Buffer penetration reasons are reviewed periodically for POOGI</td>
<td>CCPM-Injection 9 Resources are monitored as potential Critical Resources</td>
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Expanding CCPM to Managing Multi-Project Environment
Managing Multi-project environment

**Single Project**
- Managing Each Individual Project according to Injections 1-8 plus Injection 9 within the project

**Resources**
- Injection 9 Resources are monitored as potential Critical Resources

**Freeze**
- Injection 10 Projects that do not have enough resources get frozen until resources become available

**Virtual Drum**
- Injection 11 New projects release is staggered according to the chosen Virtual Drum

**Managing Portfolio**
- Injection 12 Project portfolio is managed according to projects Buffer Management status

TOC Solution for Multi Project Management

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TOC Solution for Project Management

Strategy: The Projects are completed On Time, In Full & Within Budget

Tactics: The Project organization implements Critical Chain project management for single and multi-project environments

Mindset: Customer orders are the Prime Driver – the Drum

Managing Single Projects

Planning Injections 2-4

Execution Control Injections 5-9

Managing Multi-project environment

Inj 1 Achieve-ment of the delivery commitments is established as a Prime Measurement for managing project environment

Inj 2 Project Planning Diagrams are in place with tasks resourced and estimated for duration (while estimates of durations are challenging but achievable)

Inj 3 Critical Chain is determined through resolving resource contention

Inj 4 Buffers are inserted in strategic points

Inj 5 Tasks are performed according to the status of their corresponding buffers through using Buffer Management;

Inj 6 Resource availability is monitored in anticipation of a new planned task

Inj 7 BM for recovery actions is in place

Inj 8 Buffer penetration reasons are reviewed periodically for POOGI

Inj 9 Resources are monitored as potential Critical Resources

Inj 10 Projects that do not have resources are frozen

Inj 11 New projects release is staggered according to the chosen Virtual Drum

Inj 12 Project portfolio is managed according to projects Buffer Management status

Commitment & Measurements

Look ahead

Critical Resources

POOGI

Recovery

Critical Chain

Buffers

Report & priority

Look ahead

Virtual Drum

Freeze

Managing Portfolio

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