Standing on the Shoulders of Giants

"If I have seen a little further it is by standing on the shoulders of Giants."
Sir Isaac Newton, 1676.

Carol A. Ptak
Never Say “I KNOW”

Full presentation available at:
http://www.tocico.org/?page=upgrade_workshop

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A Full Life

Enough meaningful successes

Stamina to overcome failures

Many opportunities

Ability to collaborate with people

Ability to think clearly

Overcome 4 obstacles

1 2 3 4
1st Obstacle

- TOC Community accepts and understands the meaning of reality as simple.
  - UDEs are a source of energy
  - Starting point to CRT, first step toward core conflict
  - Core conflict as base for understanding, not something to fear

As a TOC Community, we are not overwhelmed by apparent complexity, and we systematically go about uncovering the inherent simplicity of the situation.
As a TOC Community, we do not accept at all that conflicts are a given.

- People are determined to understand fully the legitimate needs on both sides and remove any harmful conflict that appears.
- This is more and more the standard attitude.
3rd Obstacle

- Less and less
  - “He will never accept”
  - “What an idiot”
  - Finger pointing and blaming

- More and more
  - “This is what I predict he will say, how to overcome that?”

- Avoid blaming

There is always a win-win solution.
People are good!
3 Pillars of TOC

Inherent Simplicity
Every Conflict Can Be Removed
People Are Good
Never Say I Know
4th Obstacle

- Don’t think that you know
- Every situation can be *substantially* improved

- Never say “I KNOW”
- Huge dichotomy to understand
The bigger (the more solid) the base, the higher the jump

- I KNOW means you have created a bigger and more solid base.
- If this is the case, then there is no doubt a much bigger jump is there!
- How to find it?
Standing On the Shoulders of Giants

1. Identify a Giant
2. Enormity of unaffected area
3. Getting on the giant’s shoulders
4. Conceptual difference
5. Wrong assumption
6. Full analysis

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1. TPS (Taichi Ohno), p1
2. 80% of Japanese manufacturers, p1
4. Stability of environment, p8
5. Manufacturers are (or can rapidly become) stable, p8
6. Rest of article, p9 onward explains how to achieve such exponential improvement even in production environments that experience high instability
Standing on the Shoulders of Giants application to material synchronization

Carol A. Ptak

"If I have seen a little further it is by standing on the shoulders of Giants."
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“As this book goes into print, there are some 700 manufacturing companies or plants that have implemented, or are committed to implementing, MRP systems. Material requirements planning has become a new way of life in production and inventory management, displacing older methods in general and statistical inventory control in particular. I, for one, have no doubt whatever that it will be the way of life in the future.”
Area not addressed

- Forecast error on the rise
- Volatility in supply and demand
- Legacy planning tactics and tools
Historical perspective

1920’s: Inventory Mgmt
1961: BOMP
1965: MRP
1972: Closed-Loop MRP
1980: MRPII
1990: ERP
1996: APS
The “New Normal”

- Global sourcing and demand
- Shortened product life cycles
- Shortened customer tolerance time
- More product complexity and/or customization
- Pressure for leaner inventories
- Inaccurate forecasts
- More product variety
- Long lead time parts/components

Worldwide there is more complex planning and supply scenarios than ever – the past is NOT an predictor for the future
Today’s Complex Supply Chains

MRP at the Heart of Manufacturing

- Independent Demand Forecasts
- Master Production Schedule
- External Orders for Components
- Inventory Record File
- Manufacturing Execution System
- Product Structure file

MRP SYSTEM
What needs to change with MRP?
Is MRP still relevant?

- Unacceptable inventory performance
- Unacceptable service level performance
- High expedite related waste
Conceptual Difference

- The definition of “demand”
- Lead time calculations
- Relative priority management
- Stock management techniques
- Integrated execution tools
MRP not significantly evolved?

- Software not necessary or sufficient
- Process capability focus
- MRP Lost Generation
- Software Community Inertia
Pull (Lean/DBR) versus MRP?

Primary Objective

Protect and Improve FLOW

(Lean Side)
Align efforts and resources as close as possible with actual demand

(MRP Side)
Visibility to the total requirements and status picture across the enterprise

Prerequisite Objective

Prerequisite Objective
Too Little = stock-outs, back orders, expedites & missed sales

Too much = cash, capacity and space tied up in inventory
Unacceptable Inventory Performance
Unacceptable Service Level Performance
High Expedite Related Wastes

Oscillation

Too Little = stock-outs, back orders, expedites & missed sales

Too much = cash, capacity and space tied up in inventory
The Five Components of DDMRP

Demand Driven Material Requirements Planning

1. Strategic Inventory Positioning
2. Buffer Profiles and Levels
3. Dynamic Adjustments
4. Demand Driven Planning
5. Visible and Collaborative Execution

Modeling/Re-modeling the Environment  Plan  Execute
Wrong Assumption

Where? (Position)

BEFORE

How Much? (Quantity)

When? (Timing)
Answering “Where?”

1. Customer Tolerance Time
2. Market Potential Lead Time
3. Supply and Demand Variability
4. Inventory Flexibility and Matrix BOM
5. Supply and Distribution Net Structure
6. Critical Resource Considerations
Failure to properly position inventory is a huge source of waste for most manufacturing and supply chain companies.

From Push and Promote to Position and Pull

- Buffer Profiles and Levels
- Dynamic Adjustments
- Demand Driven Planning
- Visible and Collaborative Execution
The Power of DDMRP
Stock-outs reduced by over 66%!

Low Inventories
High Service
Fewer Expedites

High Inventories
Shortages
Massive Expedites

Longview Inv
Longview TR

Houston Inv
Houston TR
The Process

1. Identify a “giant”, not a choopchick
   - Intuition will guide you - important enough subject for you
2. Identify the enormity of the area not addressed by the giant.
   - Reality gives the signals that so much more can be done.
   - You are aiming for a broader, not a more confined area than what was addressed by the giant.
3. Get on the giant’s shoulders
   - Gain the historical perspective - understand the giant’s solution better than he did.
4. Identify the conceptual difference between the reality that was improved so dramatically by the giant, and the area untouched.
5. Identify the wrong assumption
6. Conduct the full analysis to determine the core problem, solution, etc.

If I have seen further, it is by standing on the shoulders of giants.
4 Pillars of TOC

INHERENT SIMPLICITY

REALITY IS SIMPLE AND HARMONIOUS

EVERY CONFLICT CAN BE REMOVED

DON’T ACCEPT CONFLICTS AS GIVEN

PEOPLE ARE GOOD

WIN-WIN IS ALWAYS POSSIBLE

NEVER SAY I KNOW

THE BIGGER THE BASE, THE BIGGER THE JUMP