PROJECT FLOW 2004 Postscript

Multi-Project Critical Chain Conference
September 9-10, Washington DC

Over 100 delegates at the forefront of multi-project management attended Project Flow 2004. From a wide variety of organizations, these delegates are breaking old rules of project management in order to realize dramatic gains in project speed and throughput.

Twelve of the delegates - from the government as well as the private sector, from small and large organizations doing research and design to maintenance and repair projects - shared their implementation results and discoveries. This document is a synopsis of their results and findings.

Medtronic
Lucent Technologies
eircom
Skye Group Pty. Ltd. (Australia)
NDI
Hamilton Beach/Proctor-Silex
US Naval Shipyards
US Air Force Operations Testing & Evaluation Center
Procter & Gamble Pharmaceuticals
LSI Logic
US Naval Aviation Depot, Cherry Point
Genencor

Results reported

	BEFORE	AFTER
New Product Development for Home Appliances Hamilton Beach/ Proctor-Silex	34 new products per year. 74% projects on time.	Increased throughput to 52 new products in 1st year, and to 70+ in 2nd year, with no increase in headcount. 88% projects on time.
ASIC Design Technology Development LSI Logic	74% projects on time for small projects; major tool releases were late.	Due-date performance increased to 85% projects on time; major tools released on time for three years in a row.
High Tech Medical Product Development Medtronic	1 software release every 6-9 months. Predictability was poor on device programs.	1 software release every two months. Substantial improvement in delivering device programs on time.
Warfighter Systems Testing US Air Force Operational Test & Evaluation Center	18 projects in six months. On time delivery unknown.	26 projects in six months. 75% projects on time; 30% reduction in cycle time.
Aircraft Repair and Overhaul US Naval Aviation Depot, Cherry Point	Average turnaround time (TAT) for H-46 aircrafts was 225 days. Average turnaround time (TAT) for H-53 aircrafts was 310 days; throughput was 23 per year.	Reduced TAT to 167 days, a 25% reduction while work scope was increasing. Reduced TAT to 180 days, a 41% reduction; delivered 23 aircrafts in six months (throughput of 46 per year). 70% reduction in backshop backlog due to better synchronization on aircraft lines.
Submarine Maintenance and Repair US Naval Shipyard, Pearl Harbor	Job Completion Rate = 94%. On-time delivery less than 60%. Cost per job was $5,043.	Job Completion Rate increasd to 98%. Increased on-time delivery to 95+%. Reduced cost per job to $3,355, a 33% reduction; manning dropped by 25%. Overtime reduced by 49%, a $9M saving in first year.
Telecommunications Network Design and Installation eircom, Ireland	On-time delivery less than 75%. Average cycle time was 70 days.	Increased on-time delivery to 98+%. Average cycle time dropped to 30 days.
Biotechnology Plant Engineering Genencor	20% projects on time.	87% projects slated to complete on time, with approximately 15% immediate increase in throughput.
Design, Development and Upgrades of Telecommunication Switches Lucent Technologies		300 to 400 active projects with 30+ deliveries a month. Cycle times are 10 to 25% shorter while throughput per person higher by 45%.
Garment Design Skye Group	Product ranges were late to market.	100% due-date performance. 30% reduction in lead times and sampling costs.

Key learnings

The conference was a timely reinforcement that implementing multi-project critical chain takes more than software and education; it requires changing how project organizations are managed. Following are the core elements that distinguished successful implementations, which we thought you will find helpful:

1. Setting Throughput Improvement Targets

The presentations confirmed that substantial improvements in project speed and throughput are to be had, in almost every case. However, only when aggressive improvements targets were set that substantial improvements came. Modest targets were rewarded with modest results and lack of targets was accompanied by absence of results.

(In multi project situations, the improvement targets are set for increasing throughput: how many more projects, features, experiments, studies etc. a year compared to current performance.)

An important side-benefit of setting aggressive goals seemed to be that one could more easily galvanize an organization towards ambitious goals than around incremental improvements. For example, though people were overloaded and projects running behind, Lt. Col. Denise Kloeppel (Air Force Operational Test and Evaluation Center in Albaquerqe) set an audacious target for her division of increasing throughput by 40%. Within three months, they are well on their way to achieving those goals, while delivering projects 30% faster.

2. Actively Managing the Buffers

Yes, buffer reports provide an accurate status in execution; but communicating status is not where the leverage of buffer reports is. The power of buffer management came into play only when used by managers to actively respond to uncertainties and keep buffers out of the red. Otherwise projects would simply go from GREEN to YELLOW to RED to LATE.

A. Task Managers: In contrast with conventional project management, the leverage with critical chain in execution seems to be at task-level; maybe because that is where work gets done. All organizations, ranging from tens to thousands of people working on projects (and whether they do research, engineering or manufacturing-type projects), and emphasized the importance of task management.

David Hodes talking about the implementation at Skye Group, a fashion garments supplier in Australia, "It is quite simple. You update your tasks, follow priorities and get the work done".

According to Paul Blankenship, Director of Engineering at Hamilton Beach/ Proctor-Silex: "Setting strict rules and guidelines for task management is the key."

Finally, CDR Kettell put it as, "The supervisors look at their task list and allocate resources based on priority - it is as simple as that."

B. Project Managers: Project leaders were expected to take project-level decisions to recover buffers (modifying data if data is wrong; doing activities differently; negotiating scope; engaging more outside resources etc). David Hoover from NDI, a measurements devices company, put it as going from a "country club attitude that projects could be late" to not tolerating projects continuing in red.

According to Paul Mandigo from Lucent, initially in their implementation there was tendency to use project review meetings to explain red buffers. Only when the division managers started expecting actions for recovering buffers that the projects began being brought on track.

C. Resource Managers: There was typically a semi-monthly process whereby Resource Managers reviewed upcoming requirements, doing what could be done to insulate projects from upcoming bottlenecks ("preventing localized shortages" according to Steve Schwister of Medtronic).

3. Top Managers Using the System Until Transition is Complete

Most organizations had wholehearted backing of top managers, but that was not enough. Even though the top managers' role is typically to set policies and make planning-time decisions (execution is delegated to middle mangers and frontline managers), in successful implementations the top managers took on a more active role for the first 6 to 12 months.

First reason is that middle managers and frontline managers encounter policy obstacles that they do not even know can be removed. Only top management could proactively identify and eliminate those policy obstacles.

Secondly, active management of buffers takes time to become a habit; and all of us tend to revert to old ways as soon as there is a minor hiccup. Close oversight by top management to make sure that buffers are being managed ("constantly peering over the shoulders" as David Hoover from NDI put it) was necessary until active buffer management became second nature.

Finally concepts can be taught by outsiders; but how to do the job differently can only be "taught" by managers inside. (Joe Bradley, Retd. Captain and Operations Officer of Puget Sound Naval Shipyard taught many of the classes himself.)

What was presented

Sep 09, 2004 (Thursday)

7:00-8:00	*Breakfast and registration*
8:00-8:30	Opening Address: Sanjeev Gupta, CEO Realization Technologies
8:30-9:15	One company, two approaches to implementing: **Medtronic**, Steve Schwister
9:15-10:30	Sustaining a large high-tech implementation: **Lucent Technologies**, Paul Mandigo
10:00-10:30	*Networking Break*
10:30-12:00	**Keynote: Donald G. Reinertsen**, acclaimed author of "Managing The Design Factory"
12:00-1:30	*Lunch*
1:30-2:15	Inducing change through systems and processes: **eircom**, Jim Heffernan
2:15-3:00	Report from Down Under (**Bombardier, Breville, Skye**) by David Hodes of TOC Centre, Australia
3:00-3:30	*Networking Break*
3:30-4:15	Structure without bureaucracy: **NDI** (provider of advanced optical and electromagnetic measurement solutions), David Hoover
4:15-5:00	Coordination and control in cross-enterprise product development: **Hamilton Beach/Procter-Silex**, Paul Blankenship
5:00-6:00	**US Naval Shipyard Transformation:** Joseph M. Bradley, Capt (Ret.) and CDR. Kettell
6:00-7:00	*Open Bar*
7:00-9:00	*Dinner*

Sep 10, 2004 (Friday)

7:00-8:00	*Breakfast*	
8:00-8:30	**Systems and Local Performance Measurements:** Dr. Ajai Kapoor, VP Services	
8:30-9:15	**Warfighter Systems Testing, AFOTEC:** Lt. Col. Denise Kloeppel and Duke Porritt	**Drug Development, P&G Pharmaceuticals:** Mike J. Burns & B.L. Rosato
9:15-10:00	**Product Roadmap:** Ravi Shankar, VP Engineering, Realization	**LSI Logic:** Linda Blauner and Celia Cheng
10:00-10:15	*Networking Break*	
11:00-11:45	**Aircraft Maintenance, US Naval Aviation Depot Cherry Point:** Wayne Corey	**Product Roadmap:** Ravi Shankar, VP Engineering, Realization
10:15-11:00	**Critical Chain and Earned Value:** C. Sridhar	**Plant Engineering, Genencor:** Landon Steele
11:45-12:30	**Integrating CC into US Naval Shipyard Business Systems:** Mike Tracy, NSSG	**Modeling Drug Discovery & Development for Flow:** Jaideep Srivastav
12:30-1:30	*Boxed Lunches*	

Conference over at 12:30 on Sep 10, 2004

Realization
We make projects flow.™
www.realization.com