

The Profound Impact of Critical Chain Buffer Management on New Product

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I've studied this pretty thoroughly now and have come to an important conclusion. Critical Chain Buffer Management, I believe, will have profound impact on NPD productivity over the next three to five years.

Today, many NPD managers do not understand what Critical Chain Buffer Management is or why it will have such a great impact on product development. Simply stated, it is a new and radically different way to conduct project management and resource allocation. Critical Chain Buffer Management, when fully implemented, will boost an organization's NPD output by at least 50%. Indeed many organizations will see much more than the minimal 50% increase. I hate to state claims like this, yet the more I see, the more I am confident in the statement. Critical Chain Buffer Management will enable organizations to get better than 50% more new products out the door.

I must admit that I was quite skeptical three years ago

when I first started looking at Critical Chain Buffer Management. I have been in the product development field for over 25 years, with the last twenty in consulting. I've used a lot of tools and techniques in many organizational settings. And

ing research for NPD Portfolio and Pipeline Management suggest that benefits from such project management improvement efforts can run neutral to negative for a considerable amount of time. Not until 85% or so of the NPD projects in a

Critical Chain = radically new project and resource planning method

Buffer Management = radically new project execution management method

I've seen many fads come and go, especially in the necessary creative side of things. My first instinct was to treat what people were calling "Critical Chain Management" for NPD projects a bit like snake oil... a good pitch, but a waste of time and money. Well, I see it much differently now.

The challenge, as I've discovered, is not Critical Chain Buffer Management itself. Rather it is getting organizations to the point where they can reap its benefits. This is no simple task. Data gathered during Adept Group's benchmark-

discrete portfolio are fully engaged in Critical Chain Buffer Management and these projects share a central repository of data on people resources and project tasks do major benefits accrue. Getting to 30% to 40% inclusion of projects appears to be simple for most organizations. It is getting and staying over the 85% level that is the challenge. Once this critical mass is achieved, benefits can accrue quite rapidly. The gap between 40% and 85% seems to be somewhat of a Sisyphus rock rolling experience for many. How an organization gets there --

Critical Chain Buffer Management

exactly what the organization does to get a high level of steady project inclusion -- is the key to success.

A major challenge for some companies is that Critical Chain Buffer Management can only be carried out using enterprise software. In fact, for it to work (remember the goal is to improve output form NPD by better than 50%), each person working on a project must report every few days to once a week on how much time he or she will need in order to complete a task that is current. This information enables real-time calculation of which tasks, across all projects, should be the focus of attention so as to avoid project slippage. It is like learning that you are going to get a headache and are able to take an aspirin before you actually get it.

Another way to look at Critical Chain Buffer Management is that it enables managers to figure out who should be working on which task, for which project, and at what time. What makes this so significant is that Critical Chain Buffer Management does this under nor-

mal NPD conditions: an incredibly high degree of uncertainty in task durations, a high variability of task outcomes and a complex interconnect between an array of resources and tasks. It is the real-time nature of enterprise software that enables this.

Some of the other hurdles to realizing the benefits of Critical Chain Buffer Management are also important to note. But they are surmountable. Beyond deploying enterprise software, most organizations will need to change or modify development processes, establish much more effective and creative front-end practices, implement better portfolio mix management, and setup meaningful project prioritization methods. People and leadership matter as well. Project management, team leadership and team members will need to gain an understanding of Critical Chain Buffer Management and shift their orientation and behaviors to support a systems approach toward NPD work.

The significance of Critical Chain Buffer Management is, quite notably, the significant gain in NPD output. Most organizations cannot afford to ignore it. Competition will eventually force it. An interesting question arises with Critical Chain Buffer Management, though. If your organization could maneuver to exploit the method and could quickly double its NPD productivity, would dou-

Why Critical Chain Buffer Management Is So Important

Critical Chain Buffer Management will quickly boost NPD output by greater than a 50%. Think of this as equivalent to expanding your resource base by greater than 50%.

bling the number of projects the correct thing to do strategically? Or, would top management prefer to cut resources in half? My bet is that Critical Chain Buffer Management will simultaneously induce output improvement and an increase in the innovativeness in those products being development. Fewer resources will be expended on development activities (think stage gate) and more resources will shift to innovation (think front-end). To reap this strategic gain an organization will likely need to improve its front-end processes. Still, no matter how an organization chooses to gain from Critical Chain Buffer Management, it is serious stuff, with serious benefits.

My message is that the benefits from Critical Chain Buffer Management are tremendous. No one should want their organization to be last among competitors to embrace the methodology. With that said, management must understand

The Investment, Value Proposition, and Commitment

Depending on the organization, the total investment for Critical Chain Buffer Management implementation -- inclusive of software, process changes, implementation supports and training -- can range from \$2,000 to \$10,000 per product developer (technical and marketing personnel). My estimate of the value proposition for Critical Chain Buffer Management is that, at minimum, it offers a 10-fold return on investment within less than two years, with ongoing returns accruing thereafter.

Cutting the investment or organizational effort before critical mass is reach, though, could be quite harmful to the initiative. Serious top management commitment is requisite to success. Managing the investment - doing the right things at the right time - is what makes the difference. This is where consultants can help guide the effort. There are ways to manage the timing of efforts, minimize the investment, maintain the focus, and anchor the benefits.

Critical Chain Buffer Management

that Critical Chain Buffer Management is not a simple off the shelf purchase. Organizations need to get ready to exploit its value. That takes leadership, commitment and effort.

If you would like to learn more about Critical Chain Buffer Management in new product development and how to enable your organization to benefit from it, please do not hesitate to contact me via email or phone. I can arrange a one-on-one discussion to walk you through exactly what it is, how it works and how to benefit from it.

These studies won't show up for another two or three years. If you wait, you'll need to add to that time another year or so before benefits accrue to your organization. It is simply more prudent to get on with it and be smart about it.

I've learned a great deal from the research and I am happy to share it. If you wish to see more on these Portfolio and Pipeline Management insights, email to: PPM_insights@adept-plm.com.



Paul O'Connor is an expert in the field of New Product Development Productivity. He consults on process implementations and improving NPD performance. His article in the Journal of Product Innovation Management entitled "Implementing a Stage-Gate Process: A Multi-Company Perspective" has been cited by numerous authors and is used as a teaching aid in several MBA programs. He is also a contributing author on implementing product development process to The Handbook of New Product Development. Mr. O'Connor is also a Past-President of PDMA.

Ten Reasons For My Conclusions About Critical Chain Buffer Management

1. The value proposition is too attractive to ignore.
2. Industry is now moving beyond the early adopters of Critical Chain Buffer Management. We've seen the gains and we've learned from mistakes. It is time to transition Critical Chain Buffer Management to mainstream use.
3. We can explain why organizations have realized the benefits. It is not a mystery how Critical Chain Buffer Management works. In fact, understanding Critical Chain Buffer Management sheds considerable light on the lunacy of expecting great gains from traditional project management in NPD.
4. The magic 85% project inclusion level recently discovered in our research reveals that the central issue in gaining benefit from Critical Chain Buffer Management is that of reaching and maintaining critical mass. The issue is not Critical Chain Buffer Management itself.
5. Critical Chain Buffer Management recognizes and accounts for the fact that NPD tasks are uncertain in both duration and outcome. Traditional project management techniques (think MS Project like) do not do this.
6. Critical Chain Buffer Management is the managing of the projects and resource allocation... not just planning of the project. It tells project leaders where to take action when the action is required.
7. Critical Chain Buffer Management is not industry specific. Some think it is just for high tech industries. Others think it is specific to the construction industry. Both are wrong. Critical Chain Buffer Management is highly suited to project settings where there is uncertainty of task durations, variety of possible task outcomes, interconnects across projects and resources. This is new product development across many industries.
8. Strategic gains from shifting resources to creating innovative concepts that are more innovative can dwarf the direct economic return on Critical Chain Buffer Management.
9. Critical Chain Buffer Management, as a method, recognizes that people can only work on one task at any instant in time. Just because a task is on a Gantt chart does not mean a person is doing it or that it will be completed on schedule.
10. Critical Chain Buffer Management offers too much potential benefit to wait for after-the-fact longitudinal studies by academics to empirically prove its worth.



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