Insights in Project Management Excellence

A Newsletter for BnW Associates' Customers and Prospective Clients **Volume 2 Issue 1**

Ted Barth as a Plant Manager of seven plants, discovered most Engineers do not have the appropriate skills on how to manage a project. The ideas and steps he developed to train Project Managers were sorely needed by all manufacturing, engineering, and information technology (IT). This demand started his thriving consulting and training business in Project Management and Problem Solving.

INSIDE:

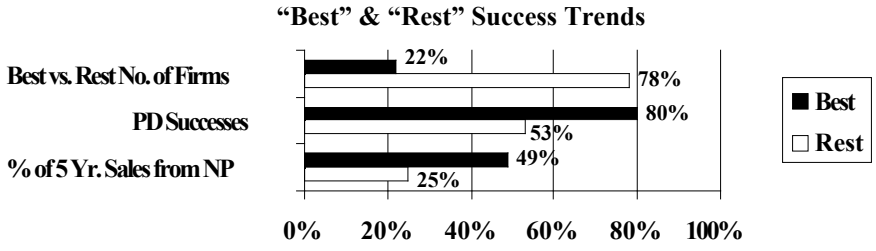
Best Practices in Product Development

This article is a summary of a speech presented by Ted Barth at the Project Management '99 Symposium" in Toronto.

Most companies developing new product development processes or improving their product development process are unaware that benchmarking and best practices information and data are available. Most companies that participate as a lead company or a participant company in a benchmarking study will wait a year or more for the results. There is a source available with current information - PDMA or the Product Development Management Association. PDMA is a professional society with the mission to improve the effectiveness of people engaged in developing and managing new products.

PDMA has conducted a national study each of the last two five year periods. They have built into its foundation prior studies conducted by Booz Allen Hamilton and others conducted from 1968 to 1990. This article will share the highlights of the 1997 PDMA Report so that you and your company can use it to judge how others became the "Best" in performing their product development processes.

The 1997 PDMA study was composed of 80% manufacturing companies, 75% business to business, and an equal mix of high tech and low-tech companies. The "Best" companies were determined by those in the top one third of performance in quality, competitive rank, and customers eyes. Only 22% of the companies in the survey were in the "Best" category. The charts from this study have been summarized to highlight those best practices of the "Best" where the competitive advantage were significantly better than the "Rest". In the comparison below the "Best" had an 80% to 53% advantage of product development successes on new products. The "Best" had a 49% of last five-year sales from new products advantage over the "Rest" who had only 25%. These results alone point to the fact that the "Best" are obviously doing some things or many things very well. If you look at all these "Best" companies and their best practices, there will be many things that you and your company should at least consider doing that works for the "Best".



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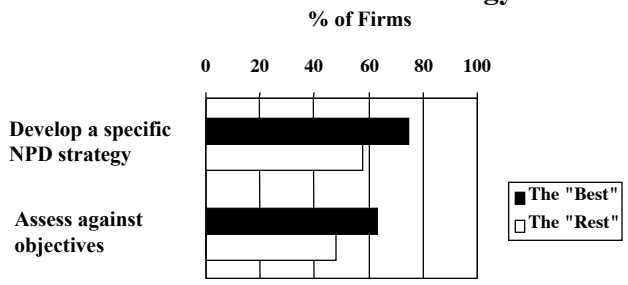
"Best Practices in Product Development" continued from page 1

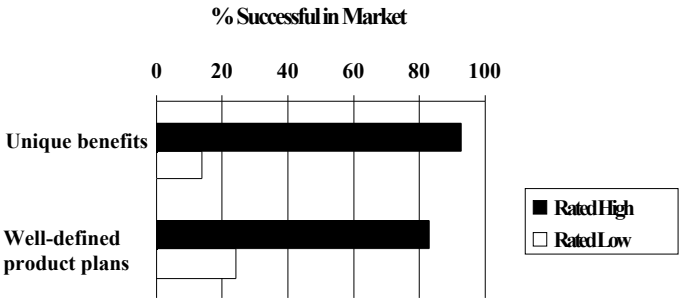
Another major practice is that the "Best" develop a specific strategy, follow it, and measure themselves against it. The chart below shows that the "Best" have a 75% to 58% advantage over the "Rest" when they develop a specific NPD strategy. The "Best" also have a 63% to 48% advantage when they assess performance against objectives. Clearly those who have a product development strategy and measure and assess performance against it have a competitive advantage.

Best Practices in Product Strategy & Planning



When it comes to defining the product, what separates the winners form the losers? The chart below indicates those unique benefits of the product and well-defined product plans are both rated high and have a clear advantage as percent successful in the market. Unique benefits had over a 90% success and well-defined product plans had an 83% success in the market (source: R.G. Cooper "Winning at New Products" book).

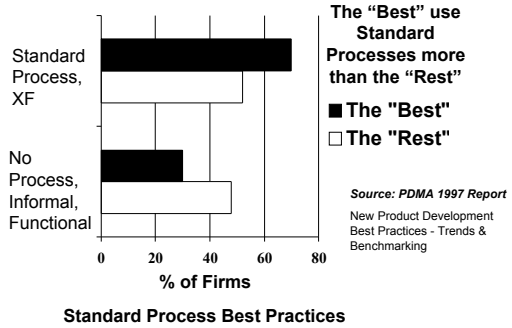
Defining the Product
What Separates Winners From Losers?



One of the most significant results of the PDMA study came from the area of the use, type, and sophistication of a standard product development process. The "Best" in the chart below clearly have a significant advantage of 70% versus the "Rest" of 53% by using a standard, cross-functional process. The cross-functional aspect means specifically that a business process approach is used rather than just a technical or engineering process approach.

"Best Practices in Product Development" continued from page 2

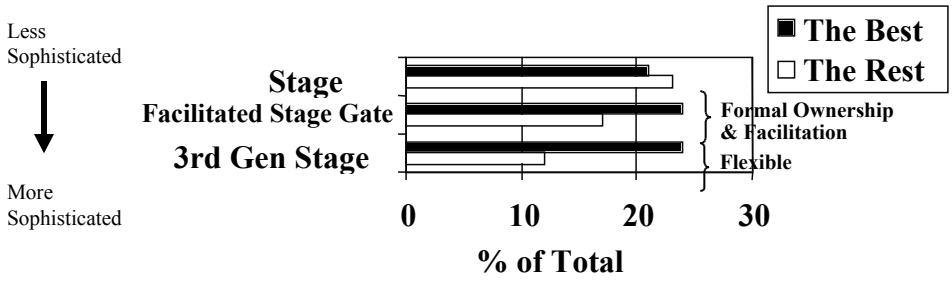
Best Practices in Product Development
STANDARD PROCESSES - WHAT DO OTHER COMPANIES DO?



Standard Process Best Practices

A second important aspect is the method the "Best" do their product development process. About five years ago US companies began moving toward the use of standard processes in product development. This process was called Stage-Gate process. As these processes were developed, they became more sophisticated. A second generation was developed called Facilitated Stage-Gate (see chart below). Facilitated means that the process had a formal process owner in the company and there was facilitation or coaching process to help people trying to use the process to get them started. The "Best" have a 24% to 17% advantage using this second-generation process. Then a 3rd generation Stage-Gate was developed – a flexible process. This was a standard process where there are certain limited number of non negotiable deliverables in the process but most of them are flexible – meaning that those managing the process could modify, add, or delete deliverables to meet the unique needs of the product, project, and the project team. The "Best" had a 24% to 12% advantage over the "Rest" using the 3rd generation Stage-Gate process.

Best Process Sophistication



Lastly, the complexity of process type varies widely using a standard process. The more complex and difficult a project or process type is the more successful is the standard process. "New to the World" and "New to the Firm" process types have huge competitive advantages. In the chart below note that these two types have a 80% to 42% and a 78% to 57% "Best" to "Rest" advantage as a percent of firms decreasing NPD cycle times. The less sophisticated the process type need, the less advantage the "Best" have over the "Rest".

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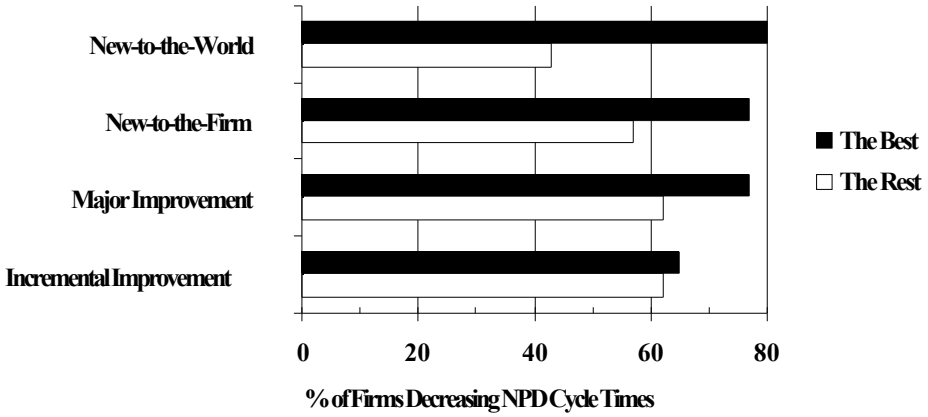
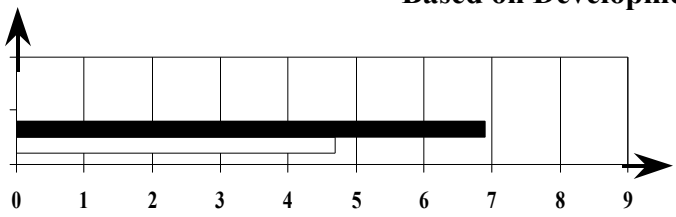
"Best Practices in Product Development" continued from page 3

The Best Differ From The Rest - Process Type



When you look at the development activities utilized in a product development process, there are also some striking indicators on how many and which activities play a key role in product development success for the "Best". The "Best" average just under seven development activities of nine total while the "Rest" utilize less than five activities—see chart below. In fact, the "Best" use about half of the initial development activities of line planning, strategy development, concept generation, and concept screening while the "Rest" rarely perform any of these activities.

Best Success
Based on Development Activities



Development Activities
Line Planning
Strategy Development
Concept Generation
Concept Screening
Business Analysis
Development
Test & Validation
Manufacturing Development
Commercialization

NP Process: Steps, Deficiencies, & Impact
R.G. Cooper June, 86
} Not skipping steps increases

In conclusion, if your role or responsibility includes the product development process and its improvement, you should share these best practice results of how the best product development companies do their product development. Every aspect of these "Best" should be studied carefully and your company should decide which best practices have a chance to help your company move forward. Once you decide which best practices you should prioritize which ones are to be developed and in what order.

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Common Pitfalls Using PM Software To Schedule and Manage Projects

Becoming self taught on project management software (the most widely used software is MS Project) is becoming more prevalent and many pitfalls are commonly encountered.

The most common pitfall is in scheduling, many users enter dates in "Start" or "Finish" which defeats the "Scheduling Engine". An entered date creates a (schedule) constraint, which prevents the software from scheduling forward using task duration's and tasks linked from the start of the project to the finish. Proper linking without constraints simplifies the replanning and rescheduling of a project, as project plans and timing (which is very normal) often change. Using many (schedule) constraints at any point of the project requires the Project Manager to replan all future tasks following instead of allowing the "scheduling engine" to do the work.

A second common pitfall is not creating and assigning a company holiday calendar. This pitfall allows the software to schedule work on company holidays --- as though work can be performed on holidays --- which schedules the project finish date about 5% too early.

Lastly, and the most subtle pitfall --- is tracking progress on the "Gantt Chart". This tracking technique allows the Project Manager to modify planned start and finish dates without recognition of project slippage. To avoid this pitfall, set a baseline (like taking a snapshot point in time) before any actuals are tracked. Then switch to the "Tracking Gantt", which displays your frozen plan and your planned (or replanned) start and finish activity. This tracking technique allows you to see task and project slippage in a very dramatic way. "Unconscious" slippage is avoided and "workout" recovery steps can be taken after status changes indicate slippage.

Stage-Gate Product Development Process

This article is a summary of an article accepted by Project Management Institute at 29th Symposium in Long Beach, California.

The Stage-Gate Business Process is a business decision-making tool that can be effectively integrated with existing new product development tools to increase the effectiveness of product launch success. The Stage-Gate process has been used by companies for the last five years. Stage-Gate does require making conscious decisions at traditional stages of the product development process.

The Stage-Gate process utilizes the three W's -- who, what, and when. The Who is an identification and delineation of roles and responsibilities. The What is the deliverables -- objective elements to be met throughout the process; and the When, the timeline milestones, or gates, which tracks progress of the project on a timeline. A cross-functional gate review and use of business metrics are also a part of this decision making process.

To understand how this works it is helpful to visualize the new product development process as a series of phases with milestones (or gates) at the conclusion of each phase (see the Exhibit I) as each new "gate" is opened. These milestones (or gates) are evaluation and decision making points. Deliverables are used at every gate and they become exit criteria necessary to pass through the gate to the next phase.

Stage-Gate Product Development Process continued from page 5

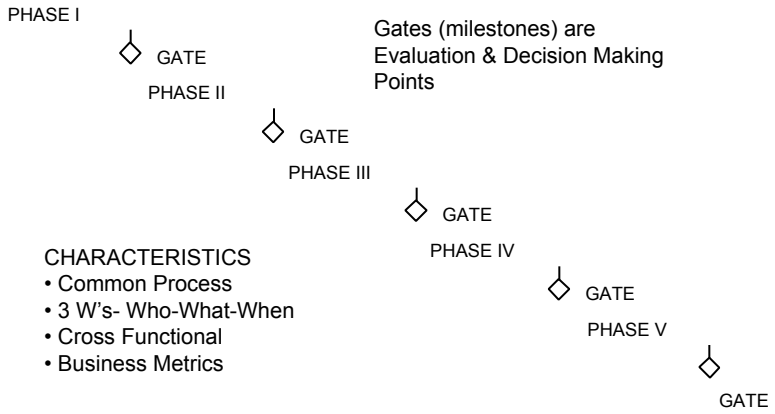

Exhibit 1 Stage Gate Processes - A Management Decision - Making Tool

A gatekeeper manages the decision making process at each gate. Product development deliverables are developed for each major type of development process for each business unit, product, and process. A common method for doing this is to utilize a clearly understood template for each NPD team as the starting point for each NPD project. This template is modified to fit the unique aspects of the project itself and the project resources at the project kickoff.

The Stage-Gate process marks the milestone points (When) with specific deliverables (What) are required to pass through each gate. The deliverables must be developed so that both progressively and collectively they represent all the requirements at product launch. These deliverables include product specific elements and manufacturing processes to manufacture the product.

The combined effect of intermediate gate goals and checkpoints with specific integrated deliverables provides the Stage-Gate user with clear focus as well as a tool to control the quality of the entire NPD process. The bursts of energy and focus to prepare to successfully pass through a gate on a timely basis are key elements (Exhibit 2). These intermediate spikes to meet intermediate deliverable goals at each gate are a fundamental Stage-Gate advantage.

Stage-Gate Product Development Process continued from page 6

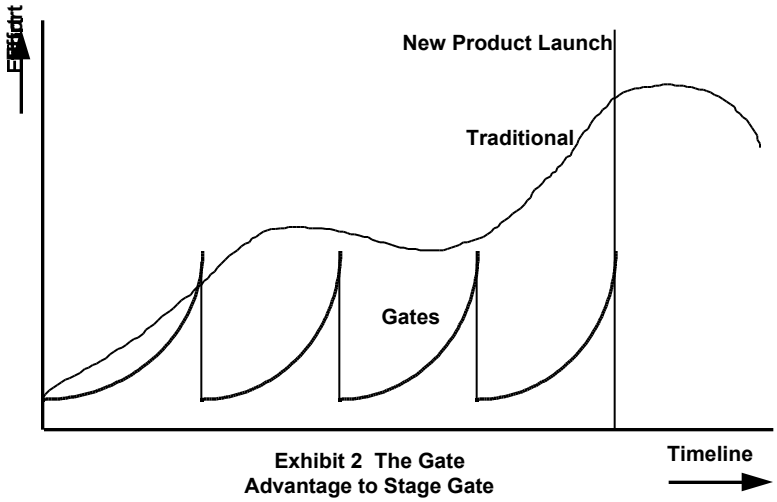

Exhibit 2 The Gate Advantage to Stage Gate

Without a seasoned Project Manager on a Stage-Gate process, there are often omissions at early to middle stages of the process. Also, late discovery project issues at middle to latter project stages will create "surprises". Both "omissions" and late discoveries are eliminated or reduced when the Stage-Gate process is utilized as intended.

Gatekeeper Role in Stage-Gate Process

The gatekeeper has the responsibility and obligation at project initiation to fully utilize the Stage-Gate process as guideline starting points, adjusting the deliverables to match the unique NPD project at hand, establishing gate dates, and mobilizing the NPD team with the three W's.

The gatekeeper's primary role in the intermediate stages- design, development, manufacturing launch- is managing the decision making process at each gate. This includes the preparation for the gate review, the gate review decision making phase, and closure of the review. His or her final role is to provide NPD project closure in such a manner that the lessons learned can be part of an organizational learning process. A key element is to identify what elements of that project contributed to success or failure and share the best practices and the pitfalls with others in the organization.

Stage-Gate Business Process -- Does it Work?

The recent PDMA study in Exhibit 3 indicates that the Best companies using the Stage-Gate process in NPD have a significant advantage over those Best companies that use no process, an informal process, or a functional group. The Stage-Gate process is a major enabler to achieve NPD success.

Stage-Gate Product Development Process continued from page 7

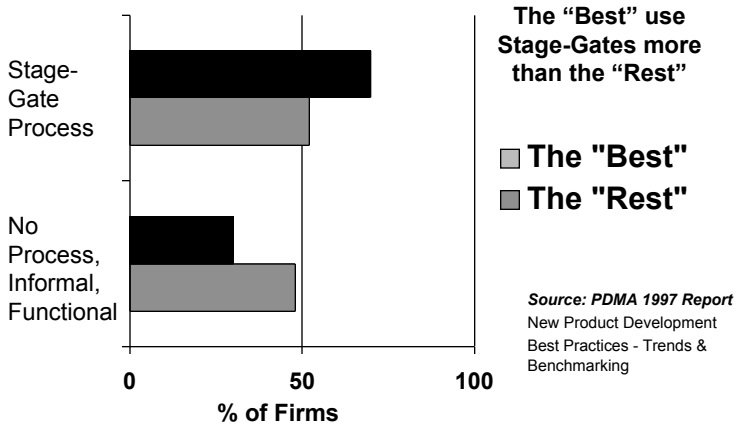

Exhibit 3 Stage Gate Best Practices Processes

Benefits of Stage-Gate

Without either the seasoned individual or Stage-Gate, there are often omissions at early to middle stages. Without the use of a developed Stage-Gate process a Project Manager will often expend significant time and effort developing the three W's. In addition, if the three W's are not identified at the project initiation stage, the NPD project will lose early focus required to mobilize the efforts and coordination of the NPD team.

Stage-Gate benefits during the Product Development process are:

- Deliverables with a responsibility matrix become the gate review agenda at gate or milestone (what & who)
- A Product Development project review and a management review is held at every gate and acts as both a peer review and management review
- Recovery plans and mid course corrections due to poor quality deliverables and "conscious" risk taking are normal and should be seen as part of the process
- The cross-functional gate review provides a balance between all business functions -- not just the technical functions.

Article

Griffin, Abbie. 1997. PDMA Research on New Product Development Practices: Updating Trends and Benchmarking Best Practices. *The Journal of Product Innovation Management 14* (November): 429-455.

Barth, Ted. 1998. "The Complimentary Roles of Stage-Gate Business Process, Conventional Project Management, and Metrics in New Product Development"; Paper accepted by Project Management Institure for 29th Annual Symposium, October, 1998.

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BnW Associates' Biography

BnW Associates is a Manufacturing "Solutions" Company. It specializes in providing solutions to problems and employee internal core competency in New Product Development, Re-Engineering, Capital Investment, and Business Process - IT Projects. BnW Associates has trained over 2300 manufacturing Executives, Professionals, Plant Managers, Engineers, and shop employees in small, medium, and Fortune 500 companies.

BnW Associates Offers: *Assessments; Accelerated Training and Development Programs; Consulting and Mentoring*

BnW Associates provides:

- Expedient and on target assessments
- Successful consulting problem solving, where others internally or externally fail
- Product development, program management processes, and IT/business systems that accelerate bottom line business improvement
- Application specific training and development that are customized to fit your company's unique needs and problems.

BnW Associates is unique in its approaches because:

- We can solve a one time problem on a consulting basis
- We offer "core competency" training and development programs for your employees
- Our training programs are customized to fill the gaps not re-invent the wheel.

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Call/fax/mail BnW Associates for no charge information:

New Product Development

Reprint of "PDMA Research on New Product Development Practices: Updating Trends and Benchmarking Best Practices", Nov. 1997 - 5 year Study

Project Management

The full reprint of this newsletter article "Stage-Gate Product Development" titled "The Complimentary Roles of Stage Gate Business Process, Conventional Project Management, and Metrics in New Product Development" published at 29th Symposium of Project Management Institute

Assessment of proper use of scheduling, tracking, and managing projects using MS Project software

An outline of the three-day Program Manager Training and Development Program

For Manufacturing and Engineering Professionals and Managers

For IT/Business Systems Professionals and Managers

Self assessment of resource planning, workload forecasting, and managing resources using MS Project software

Self assessment of developing "Project Families of Templates" in Microsoft Project and benefits

Process Management

An outline of "10 Fishbone" elements utilizing best practices for development, implementation, and improvement of an effective stage-gate process

An outline of the five-day Process Management Training and Development Program the map "As-Is" and "To-Be" processes and develop gap analysis

Quality Management

An outline of the five-day Total Quality Improvement Training and Development Program for Engineering Managers, Office Managers, and Office Professionals

Professional Societies Contacts for Membership in:

Project Management Institute (PMI)

Product Development Management Association (PDMA)

Supply Chain Council (SCC)

Books & Articles by World Class Authors:

Project Management

Product Development

Teams and Organizational Learning

Best Practices in Manufacturing and IT

The full presentation of "Best Practices in Project Development Information Technology / System Development Projects" presented at Project Management '99 in Toronto

Industry Week's "Americas Best Plants" article

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