New Product Introduction
MANAGING THE CROSS-FUNCTIONAL PROCESS OF INTRODUCING NEW PRODUCTS TO MARKET

While methodologies such as PACE and Stage-Gate® provide the framework to formalize and improve the New Product Introduction (NPI) process, a cursory application of these methods only takes you so far. For most companies, the real challenge is getting people to fully adopt their associated NPI process guidelines. With full support for industry best practices and innovative technology, PTC solutions can successfully drive the adoption, speed, and repeatability of effective product introductions across your organization.

Definition of NPI Process

Competitive pressures, cost challenges, and increased customer expectations are driving companies to improve the way they develop and introduce products to the market. Whether you’re cultivating internally born ideas, or trying to respond to customer requirements and market demands, the new product introduction process can help. It enables all constituents to speak a common language. It automates tasks, exposes performance bottlenecks, drives consistent execution and continuous improvement. And, it provides management visibility into the product development pipeline. Since NPI is so intertwined with other product development processes, its adoption and execution significantly influences your potential for success.

Evidence for the need of an NPI process comes from a 2004 PTC-PDMA research study.
Understanding the Need for NPI Process

While most companies recognize the need to develop and deploy some form of a process-controlled NPI approach, many still face the fundamental challenge of the process not being adopted by users. Too often, documented NPI guidelines sit on the shelves and are not incorporated into the project team’s daily work. There are many reasons for this lack of adoption. Typically, the collection of project metrics is a very tedious manual task, forcing the team to spend an inordinate amount of time collecting data, and less time executing critical-path activities. Further, access to real-time project status is rare, forcing project teams to work reactively rather than proactively. “Firefighting” is all too frequent, as teams spend valuable time jumping from one issue to another. Wastefully, the same problems are solved multiple times. The net result is incomplete content, missed project milestones, and delayed product launches.

Benefits of an Optimized Process for NPI

An effectively deployed and adopted new product introduction process enables you to properly manage product development activities in order to deliver the right products to the market at the right time, while keeping costs under control. Some of the many benefits resulting from optimizing the new product introduction process include:

Products Introduced On-Time
- Shorten the time from a product’s concept initiation to its release to manufacturing
- Plan and manage overall duration of the NPI process and each of its phases
- Manage change and lifecycle for various deliverables
- Standardize format and attributes for different deliverables

Higher Productivity
- Capture and automate company specific new product introduction process steps
- Incorporate a best-practice project plan, document templates, and metrics
- Identify and reduce time spent on non-value add activities
- Provide project visibility to all team members to eliminate questions about pending assignments
- Focus effort and increase R&D throughput

Lower Project Costs
- Define, plan, track, and manage project cost
- Increase the number of projects completed on-budget
- Quickly identify, capture, and resolve action items and risks
- Identify and eliminate repeating activities
- Speed adoption, and improve consistency of process execution

Greater Revenue from New Products
- Provide process visibility to management, accelerating benefit of implementation
- Improve quality of metrics, and reduce collection time
- Focus on the most critical quality initiatives
- Achieve timely market introduction of the complete product
The Solution – PTC’s Product Development System

A typical new product introduction process contains four major steps:

1. **Initiate Project.** The initial step of the NPI process is to properly start and manage the project and its deliverables. A cross-functional team representing, among others, engineering, manufacturing, sales and marketing, and quality, is put together as a core team of the NPI execution. An initial project plan is developed from a template based on best practices and benchmark data. Resource planning and trade-off studies are performed to identify potential outsourcing and offshore development opportunities.

2. **Develop Business Plan.** Before committing required resources or proceeding with product development, it is critical to validate future product profitability. Using standard business case templates, management must calculate the cost and business benefit of proceeding with the project. Market opportunity, market risk, and technical risk are evaluated to gain an understanding of the main business drivers behind this project, and to ensure the desired ROI.

3. **Execute Project.** The major development work (effort and time) begins after all the key project criteria are satisfied and the project is approved for execution. Development of deliverables required for the next phase is managed through to completion. Main project parameters, such as project plan, milestones, and costs, are constantly updated as development proceeds. Required resources are managed in order to complete the project on-time and within budget.

4. **Conduct Gate Reviews.** This step is continuously repeated throughout the NPI process, ensuring that main, predefined conditions are achieved before moving on to the next phase of the project. Major gate reviews determine whether or not to continue investment in a specific project. ‘Go’ or ‘No-Go’ business review meetings are held between critical phases of projects, with the results captured both to ensure that project development is on track, and to provide project progress visibility to all team members and management.

“*To be competitive in the global marketplace, innovation-driven organizations need to deliver new products and services to market quickly and cost effectively. Indeed, a company’s ability to achieve these sometimes-conflicting objectives simultaneously is key to its success. To meet this challenge, global leaders make it a priority to maximize productivity at the project level. They understand that streamlining communications and processes at this level will help them meet their overall organizational goals faster and with fewer resources.***”

– PRTM - Pittiglio, Rabin, Todd, and McGrath
Critical Capabilities

The PTC Product Development System™ provides the following capabilities that are essential for effective execution of the new product introduction process:

- Single, Web-based, structured, cross-discipline product data solution for integral management of complete product and project data

- Deliverables-based project management

- Best Practice (PACE and Stage-Gate) project template capturing plan, workflow, team, assignment, repository folder structure and document templates

- Integral project scheduling, execution, and status reporting, as well as milestone, deliverable, and cost tracking

- Cross-project and initiative reports, such as dashboard, scorecards, bubble charts, pie-charts, and stack charts provide current project data and real-time visibility into performance metrics and project status to all members and executive sponsors

- Advanced workflow capabilities, including support for nested processes, process referencing, conditional branching, voting, synchronization, timers, iterative loops, and response-based routing

- Common virtual workspaces for both internal cross-functional team members and external constituents (suppliers, partners, customers)

- Direct integration from leading CAD authoring tools such as Pro/ENGINEER®, Cadence®, CATIA®, AutoCAD®, Mentor®, Inventor®, SolidWorks®, and Unigraphics®

- Visualization and markup of 2D/3D data

- Online collaborative design review and phase gate review meetings

PTC – Uniquely Qualified

PTC’s Product Development System (PDS) delivers an optimal solution for managing the NPI process because it offers both a pipeline view and portfolio view across projects. Managers and executives can quickly identify issues through consolidated views and graphical indicators, then generate reports in real-time based on actual current project information. PTC’s PDS can manage a vast range of information regardless of systems, organizational differences, or geographic boundaries. Participants can author, access, and manage this data so that the right information is available when team members need it.

But while the PDS technology is critical to maturing any product development process, it’s just one step toward attaining business value. To truly be successful, companies also need to remove inefficiencies that currently exist in their NPI process, so they can take full advantage of that technology. Just as important, companies need to ensure that everyone across the organization understands and adopts the new processes and technology.

After 20 years of successfully deploying process and technology improvements across thousands of customer sites, PTC Global Services understands all the components required for companies to achieve their product development goals. Our solutions include the right blend of process consulting, system implementation, and education services you need to realize real business value quickly. Global Services will recommend industry best practices that fully leverage PTC technology, so companies realize more value from your technology investment while avoiding costly customizations. Moreover, each of our solutions incorporates a unique training approach that accelerates full user adoption of new technology and processes.