

# Getting The Kinks Out

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The origin of any business is an idea that fulfills an existing, anticipated, or created consumer need, which can be one satisfied by either a product or a service. Yet, every year literally hundreds of thousands of ideas never germinate beyond the earliest stage. There are also at least an equal number of ideas that move well beyond the idea stage into an iterative development state that consumes the critical window of opportunity – the time available to be first to market – or, worse yet, fully exhausts the product life cycle opportunity – the time horizon in which the customer need exists. Of course, success stories exist: those new products that evolve from an idea, through research and development, to commercialization quickly and efficiently. These innovations can single-handedly reinvigorate struggling companies or further distance market leaders from competitors.

Following is only a small portion of what is involved in getting a product from idea to commercialization: the product development phase. As noted earlier, the catalyst to new product development is the identification of a consumer need that is either not being fulfilled or is being fulfilled in an ineffective or inefficient manner. Some companies actually employ a strategy that capitalizes on the product development and commercialization shortfalls of competitors. To overcome the “first to market advantage” of the originating competitor these companies often focus to improvements in product efficacy, quality, cost, customer service, or other supply chain elements. Nokia’s entry into the wireless communication market and its devastating impact on Motorola is such an example.

Regardless of your strategy, new product development remains a critical path function, an

absolute requirement to market entry. Product development can range from relatively straightforward, in cases where existing technology can be integrated and configured to satisfy a consumer need, to extraordinarily complex and risky. In the case of personal care products there is often a major dependency on developing chemical combinations that address a consumer need, or address it better and cheaper.

Companies dependent on scientific breakthroughs – creating new technologies to establish, maintain, or grow market share – are faced with extraordinary challenges. This being the case, how do you plan a breakthrough or reduce the risks and costs associated with trying to develop something that has not been done before?

Certainly there are methodologies for estimating probability of success; however, focus instead on five other, often overlooked factors, that greatly influence an organization’s ability to develop new products quickly and cost effectively.

## Five Factors

- 1 Product development end state visualization
- 2 Integrated plan, schedule development and organizational alignment
- 3 Express communication and decision-making
- 4 Point of impasse and redirection
- 5 Leadership

### 1. Product Development End State Visualization

For any team to operate at its utmost intellectual, physical, and emotional capacity, it needs to be

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inspired, even more so when it is trying to achieve what has never been done before. The inspiration for a product development team is borne out of its belief in the value that will be generated for the consumer, the incremental benefits accrued to the company and, ultimately the individuals integrally involved. In other words, the destination must be understood, meaningful, and valuable to the participants.

## 2. Integrated Plan, Schedule Development and Organizational Alignment

Product development is essential to the business process; it reinvigorates and replenishes. It also, however, is integrally dependent on other business functions to succeed. As with other business functions, product development must be process-driven to ensure the optimal utilization of time, dollars, and resources.

All of the tasks and the specific interdependencies that need to be synchronized to transform a specific idea to a product must be established, understood, and executed. The process, or sub-process is only part of a much larger product development process that describes the network of inputs and outputs that feeds information to – and relies on – information from the product development team. At minimum, the team must understand the specific market need that is being targeted and what the consumer values, the perceived worth of the benefit, the cost threshold – the point at which the product generates acceptable profits. Most of this information flows from sales and marketing groups, in addition to other critical organizations. Finance, regulatory affairs, manufacturing, and quality assurance all have integral roles in supporting product development. Each of these group's sub-processes are part of the full network.

The more clearly the interdependencies are defined and managed, the better, faster, and more cost effective the product development process. Many of the demands placed on product development emanate from organizations other than sales and marketing, yet it is amazing how many companies hold fast to a silo mentality that

deters this critical collaboration. Whether it's developing a new innovative product or improving an existing product, process definition is critical. The more complex the product and larger the company the greater the need for process development and application.

If you buy into the premise that process is critical in developing new products you may also agree that processes are often viewed as the solution to organizational inefficiencies – the silver bullet. Unfortunately, it is common for good processes to be established but not applied. It has yet to be discovered why organizations so committed to defining a process ignore it once it is in place. The same holds true for project planning. Companies often place much more emphasis on choosing project planning software than they do on applying it properly with discipline.

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## 3. Express Communications and Decision Making

Most manufacturers probably have some knowledge of Skunk Works, a very well known and successful research and development group in the aerospace industry. Skunk Works has among its successes the SR-71 Blackbird, the F-11 Nighthawk, the U-2, and the F-22. Few realize that Skunk Works originated more than 50 years ago as a way to accelerate product development efforts and increase success rate on aggressive, breakthrough technology projects. Skunk Works creates a project sub-culture in an environment that cuts through bureaucratic red tape, organizational structure inefficiencies, and communication barriers that otherwise encumber project activities.

Through the years, many companies have attempted to mimic the Skunk Works approach – in some cases even “borrowing” the name – to apply a special focus to product development projects; most have realized limited success. The reason is that these companies adopted the process, but not the philosophies and cultural elements. Skunk Works established communications and decision-making protocols based on their projects' needs,

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not what fit the general business. Too often, projects fall hostage to communication and decision-making protocols that are well suited to managing the business; however, they fall way short when trying to move through an inefficient product development process. Outdated communications and decision-making tendencies drag down product development efforts. Create instead project charters that call for a behavior that supports high performance. Elements of the charter can include punctuality at meetings, accountability to commitments, consistent and timely information sharing, team member peer reviews to advance synergy and continuous improvement. Then, obtain the sponsorship – at whatever level is required – to allow an empowered mode of operation. The same high-level managers whose approval you need will not afford you the benefit of excuses if your product development efforts fail, so make your requests conditions for success.

#### **4. Point of Impasse and Redirection**

How many product development organizations know when to quit and redirect efforts? Did you ever hear the old saying “Don’t beat a dead horse?” Some organizations not only beat the horse but also insist on riding it. An approach is needed that allows an organization to identify the earliest point at which it is prudent to redirect activities rather than continuing down a specific research path beyond value, getting through the research iterations as quickly and efficiently as possible. Besides the work required to identify the point of impasse, a tremendous amount of discipline and leadership is necessary to facilitate the process. In addition, the organization must adapt to a mindset that accepts the approach as the optimal way to get to the new compound or technology. In some cultures this requires a major paradigm shift. Key to the approach is identifying the major technical hurdles and the development milestones necessary to reliably predict the ability to overcome the hurdles.

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#### **5. Leadership**

Processes first and foremost must be developed with value generation in mind. Any non-essential steps should be omitted. Assuming a good process is in place and a methodology for continually improving it exists, what’s left is disciplined application. This requires strong sponsorship – management commitment – and facilitation. Because introducing a new process or modifying existing processes challenges current tendencies that have become a natural way for people to perform functions, strong facilitation is required. Stakeholders need to understand and buy into the value of managing activities in a specific manner and timeframe. For product development this certainly is the case.

Initiatives requiring people to work together cannot be accomplished quickly and efficiently without leadership. In fact, the single greatest deficiency in failed product development execution is poor leadership.

Sufficient priority must be placed on leadership skills in favor of technical competence. Quite frankly, if the specific product development effort is dependent on the leader’s technical competence, then consideration should be given to changing project leaders. Few projects fail for lack of the team’s technical competence.

Product development is exciting and fun work; nonetheless, it is work. It is very easy for product development people to get caught up in the day-to-day tasks, forgetting that the creative efforts must produce high potential products quickly and on an ongoing basis. Maintaining the group’s focus and intensity is a huge responsibility that rests on the leader’s shoulder.

In conclusion, I would refer to “Five Stages of Project Management Excellence” at the end of this article for a model that describes the evolutionary stages of project management applied to product development. At what stage is your organization?

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## Five Stages of Project Management Excellence

The maturity of project management practices within an organization can be described in five different stages:

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### Stage 0: Informal Management

- Unstructured approach
  - Success dependent on individual experience
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### Stage 1: Functional Excellence

- Defined functional processes/expertise
  - No integration across functions
  - “Over the wall” interactions
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### Stage 2: Project Excellence

- Well defined project management process
  - Cross functional teams
  - Business driven decision making
  - Strong individual project planning
  - Effective utilization of standard and customized project management tools
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### Stage 3: Portfolio Excellence

- Planning techniques enable portfolio management
  - Explicit processes facilitate robust market, product, and technology strategies
  - New opportunities rapidly and effectively integrated into priorities
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### Stage 4: Collaborative Development Excellence

- Fully integrated development chain including internal functions and external partners
  - R&D throughput maximized by optimally leveraging capabilities and core competencies
  - Optimized processes enable highly effective and efficient interactions
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IMPROVING PERFORMANCE:  
Time to Market, Schedule Conformance, Cost Variance, Time to Profitability



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