# What's Next?: After Stage-Gate

Progressive companies are developing a new generation of idea-to launch processes

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# What's Next?

## After Stage-Gate

*Progressive companies are developing a new generation of idea-to-launch processes.*

**Robert G. Cooper**

**OVERVIEW:** As the creator of the Stage-Gate® process, I am often asked, "What's next after stage-gate?" For years, I've not had an answer. Now, we're seeing new approaches emerging from progressive companies that represent a new generation of idea-to-launch processes. In some cases, it's an evolution of Stage-Gate to a better, faster model; in other firms, its closer to a revolution, moving to a very different system. But there is anything but unanimity as to what the next generation idea-to-launch system should be. This article looks at what leading firms are doing to move beyond their current idea-to-launch methodology and tries to integrate these practices into a next-generation system.

**KEYWORDS:** Stage-Gate, Phase review, Gating, Idea-to-launch process, Agile development, Accelerated development, Adaptive development

The original Stage-Gate system was created in the 1980s, based on an in-depth study of successful "intrapreneurs" within major corporations as they drove successful new products to market. Their practices and the lessons they learned provided the foundation for that early stage-and-gate model. Over the years, Stage-Gate has evolved and incorporated many new practices (see, for instance, Cooper 1994, 2008, 2011). Some companies have also developed their own versions of Stage-Gate, building in some positive elements, but also some negative ones.

Today we see that the Stage-Gate process has generally had a positive impact on the conception, development, and launch of new products (Cooper 2011, 2013a; Cooper and Edgett 2012). But there are also criticisms, some the result of the nature of the process and others of the way companies implemented the system. The world has changed a lot since the first Stage-Gate system was implemented—it is now faster paced, more competitive and global, and less predictable. In this context, Stage-Gate has attracted a number of criticisms: It is accused of being too linear, too rigid, and too planned to handle more innovative or dynamic projects. It's not adaptive enough and does not encourage experimentation. It's not context-based—one size should not fit all. Its gates are too structured or too financially based, and the system is too controlling and bureaucratic, loaded with paperwork, checklists, and too much non-value-added work (Becker 2006; Lenfle and Loch 2010). Some authors have taken issue with these criticisms, arguing that most are due to faulty implementation (Becker 2006), while some deficiencies have been corrected in more recent evolutions of Stage-Gate (Cooper 2011). But issues do remain, and thus a handful of leading firms are rethinking and re-inventing their idea-to-launch gating system. Through my ongoing study of benchmarking best practices, presentations at the annual Stage-Gate Innovation Summit, and personal interactions with leading firms, I've constructed an overview of likely directions for the next generation of idea-to-launch systems.

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### The Next Generation Idea-to-Launch System: The Triple A System

At first glance, the practices and recommendations of firms creating new idea-to-launch systems look a lot like the traditional process; there are still stages where work gets done, and there are still gates where decisions are made. But the details of the process and its function are quite different: What emerges is a more agile, vibrant, dynamic, flexible gating process that is leaner, faster, and more adaptive and risk-based. This is what I call the Triple A system—it is adaptive and flexible, agile, and accelerated (Figure 1).

**A1—Adaptive and Flexible:** The next-generation idea-to-launch system is adaptive. It incorporates spiral or iterative development to get something in front of customers early and often through a series of build-test-revise iterations. The product may be less than 50 percent defined when it enters development, but it evolves, adapting to new information, as it moves through development and testing. The system is also flexible insofar as the actions for each stage and the deliverables to each gate are unique to each development project, based on the context of the market and the needs of the development process. This is the opposite of an SOP (standard operating procedure) approach to product development, which prescribes standardized actions and deliverables. There are also fast-track versions of the process for lower-risk projects. And in the next-generation system, a risk-based contingency model dictates that appropriate activities and deliverables be determined based on an assessment of project assumptions and risks. Finally, Go/Kill criteria are flexible—there are no standard sets or universal criteria for each gate—and gates are integrated with portfolio management.

**A2—Agile:** The next-generation system also incorporates elements of Agile Development, the rapid development system developed by the software industry. For example, sprints and scrums—short time-boxed increments in which the deliverable is something that can be demonstrated to stakeholders (rather than documentation)—are part of the new system. Equally, these new systems emphasize moving quickly and nimbly from milestone to milestone and rely on a much leaner system with all waste removed—no bureaucracy, no unnecessary activities anywhere in the system.

**A3—Accelerated:** The next-generation idea-to-launch system is focused on accelerating the development process. Projects in the system are properly resourced, especially major projects, and fully staffed by a dedicated cross-functional team for maximum speed to market. Activities within stages overlap, and even stages overlap; the notion of a "stage" is less relevant in this new system. There is more emphasis on the fuzzy front end, making it sharper and less fuzzy, so that the project is clearly scoped and key unknowns, risks, and uncertainties identified as early as possible. Finally, robust IT support is provided to reduce work, provide better communication, and accelerate the process.

### An Adaptive and Flexible Process

Emerging idea-to-launch systems take their power from being adaptive and flexible—able to shape themselves to
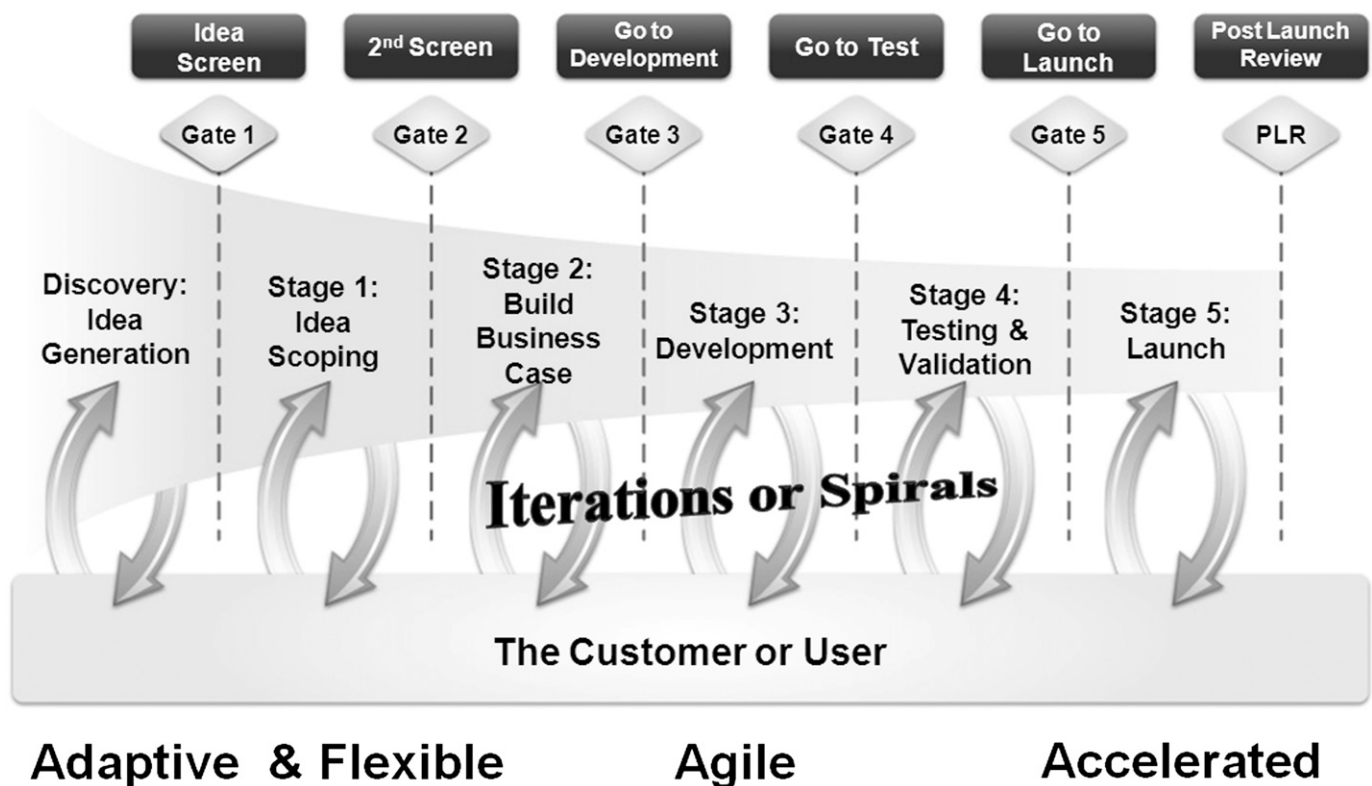


**FIGURE 1.** The next-generation idea-to-launch system

the context of particular projects. These qualities arise from four attributes in particular: spiral development cycles, context-based stage definitions and activities, risk-based contingency models to drive decision making, and flexible criteria for Go/Kill decisions.

### Spiral Development

The traditional Stage-Gate process requires that the product and project be defined before the project moves into development. Indeed, "sharp, early and fact-based product definition" is a fundamental principle of Stage-Gate (Cooper 2011, 2013a). But the world moves too fast today to make a stable and rigid product definition possible for some businesses and projects. Often customers are not clear on what they want (or need) in the first place, so it's impossible to get a 100 percent accurate product definition prior to development. As Steve Jobs, never a proponent of traditional market research, famously said, "People don't know what they want until you show it to them" (Isaacson 2011, 567). And sometimes requirements simply change in the time that passes between the beginning and end of development—a new customer need, a new competitive product, or a new technological possibility emerge, and the original product definition is no longer valid.

Thus smart firms, especially those doing riskier and bolder projects, have made the idea-to-launch system much more adaptive. The product may be less than 50 percent defined as development begins, but comes together during development; the product's design and definition adapts to new information, customer feedback, and changing conditions on its way to launch. Such firms have built in multiple spirals or iterations of development that permit experimentation with users (Figure 2), with each spiral consisting of:

- *Build.* In each iteration, build something to show the customer—a rapid prototype, a protocept, a crude working model, an early beta version.
- *Test.* Test each version of the product with customers—let them tell you what they like and what value they see.
- *Feedback.* Gather feedback on that version of the product from the customer or user.
- *Revise.* Reset your thinking about the value proposition, benefits sought, and the product's design based on the feedback, and start again.

Each loop moves the project closer to the final product design. This spiral approach promotes experimentation, encouraging project teams to fail often, fail fast, and fail cheaply, a principle that Jobs applied throughout his development career at Apple (Isaacson 2011). Corning has adopted this approach with 60–90-day plans that include numerous iterations that yield testable versions of the
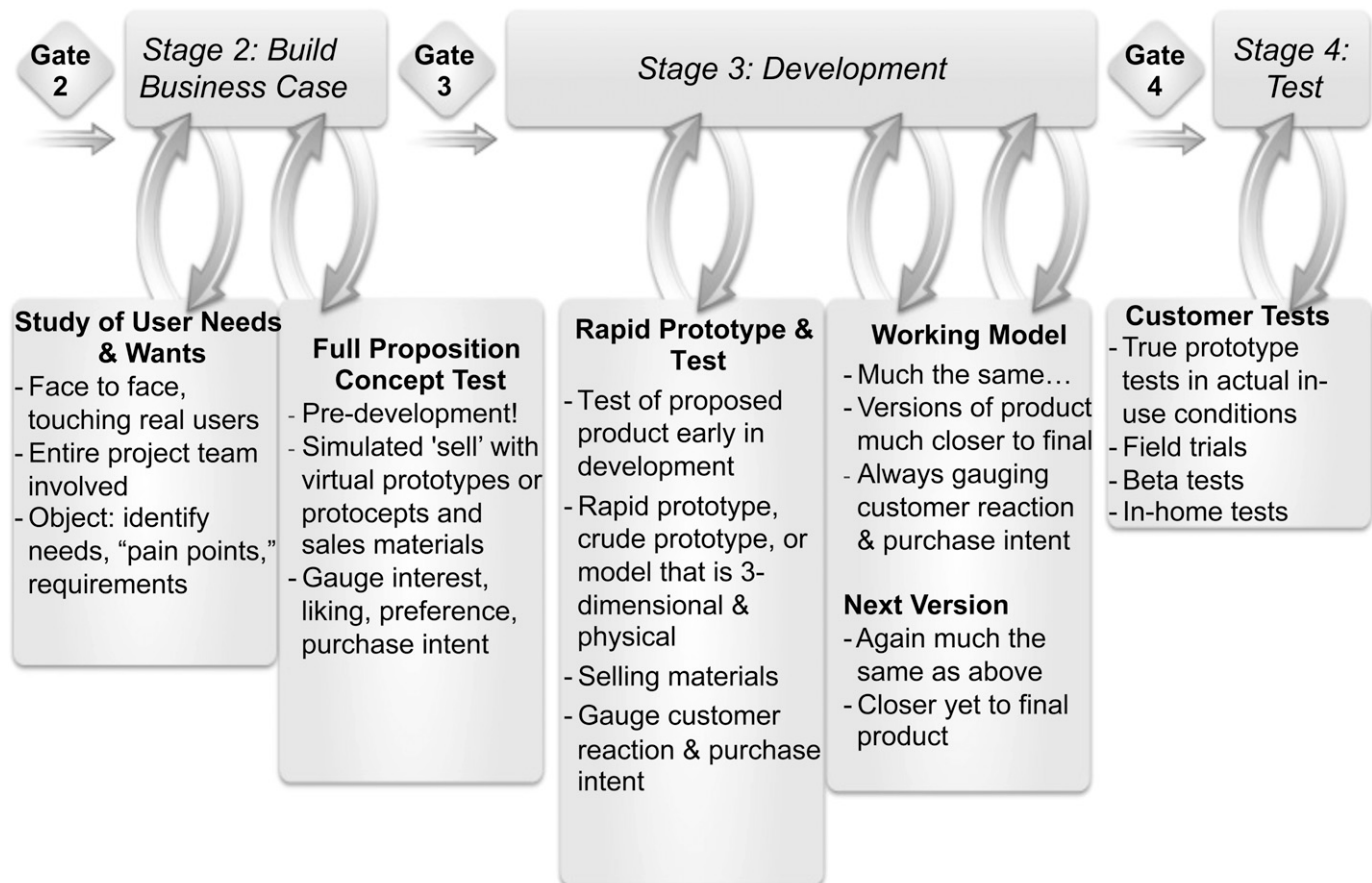


**FIGURE 2.** Spiral development built on build-test-feedback-revise iterations

product as a deliverable at key milestones (often weekly or biweekly). This looping or spiral development is consistent with two core tenets of the Agile Manifesto for software development: a focus on quick response to change, and continuous customer or stakeholder involvement in the development of the product.

### Context-Based Stages and Gates

In the first generations of Stage-Gate, a single model was developed, intended to handle the most difficult or complex new product projects within a company. The irony is that most projects the company undertook were much simpler, and only a handful were the complex initiatives that the process had been designed for. Many firms have now developed faster-track or lighter versions of Stage-Gate to handle less risky, better-defined, and less complex development projects; recent benchmarking studies show that 75 percent of top-performing businesses use a scalable idea-to-launch process (Cooper and Edgett 2012). For example, there are often three versions of Stage-Gate (Figure 3):

- The full five-stage process to handle major, high-risk developments;
- A light version for moderate risk projects, such as significant modifications, improvements, and extensions; and

- An express version for very small developments, such as a sales-force request requiring a minor product change.

In addition, many firms have introduced special versions of Stage-Gate to handle technology development projects where the deliverable is not a new product, but rather a technological capability (Cooper 2006). Such projects still require the discipline of a gating process, but the activities, deliverables, and criteria for Go are unique to these projects; hence, they merit their own system. Some examples:

- The Kellogg Company has three versions of its K-Way innovation process: the regular five-stage process to handle new products, a lighter three-stage process for smaller projects, and a three-stage process to handle technology developments such as new science or invention projects (Maley 2010).
- 3M has its regular new product innovation (NPI) system, a standard five-stage model to handle typical new-product projects. There is also a shorter three-stage, three-gate version used by international subsidiaries, where the US-developed product is modified for sale locally. Finally, there is the three-stage new technology innovation (NTI) system for managing the design and development of a new technology (Gehring 2011).
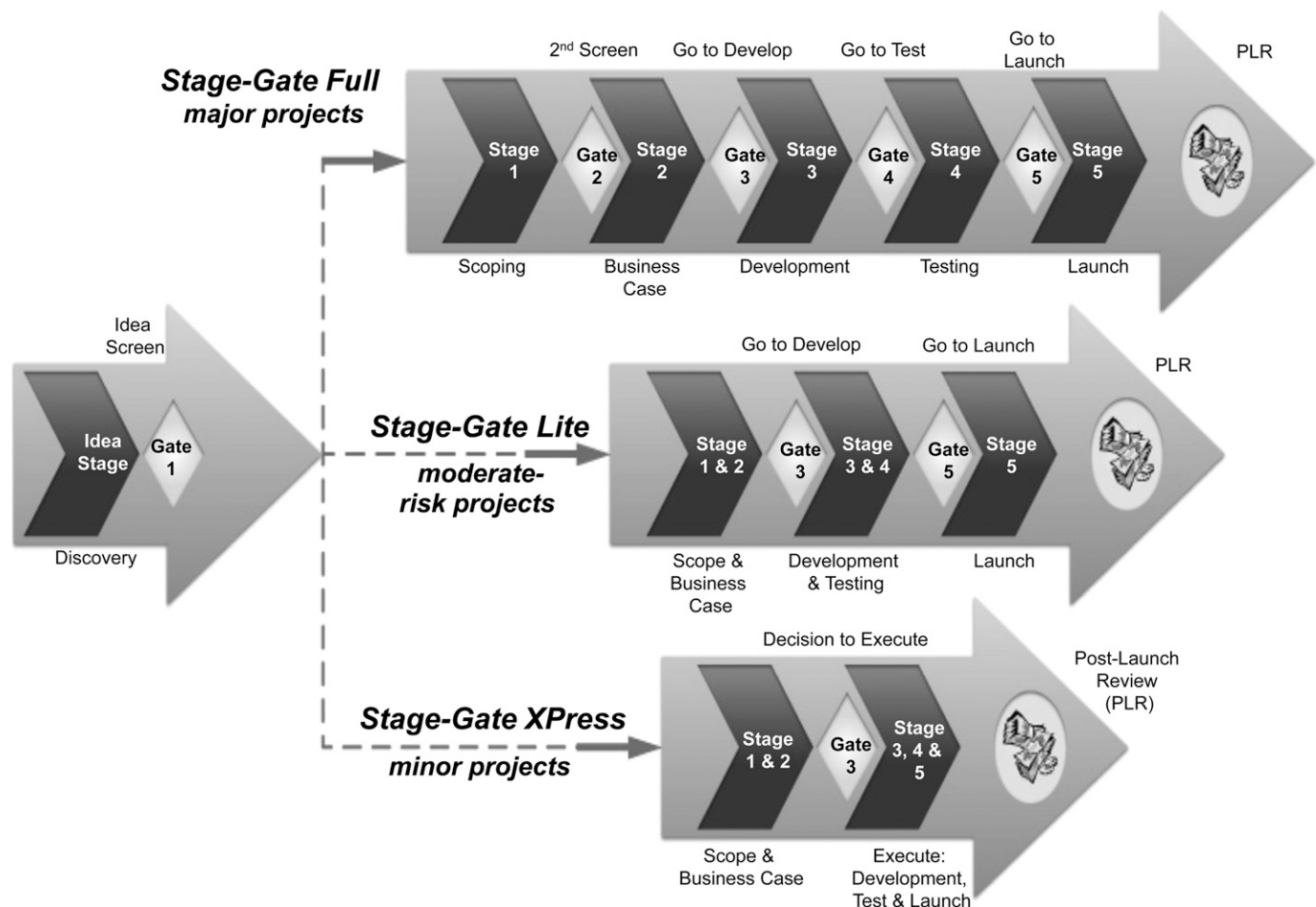


**FIGURE 3.** Scalable Stage-Gate systems

- P&G, by contrast, has decided not to employ different processes for fast-track projects versus its durable five-stage SIMPL process. As Dietmar Bressau, Corporate Leader for Innovation Diamond Management, explained in an interview, "When you open the door to two to three processes, then along comes four, five, and six. Ultimately, anything goes. We want to keep one common Stage-Gate process that will be tailored based on the risk profile of an individual initiative—otherwise each team, functional area, or business does its own thing." Nonetheless, the firm has developed a value-driven process for innovation that requires invention. It's called FEI, or Front End Innovation; the argument is that when one brings a project into SIMPL without the invention in place, the project spends forever in the design phase. Thus, the technology development must be handled in advance.
- Hewlett-Packard recognized that its traditional phase-review process, while excellent for mature markets requiring product improvements and extensions, was not so well suited to emerging, fast-moving markets. To meet the needs of these different types of markets, HP now defines three development processes:

- An emergent model for start-up developments, such as cloud computing;
- An agile model for growth sectors, such as blade servers; and

- The traditional phase-review system to deliver lower costs or new features for mature markets, such as desktop PCs (MacCormack et al. 2012).
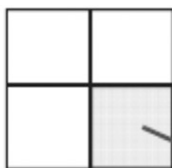
### The Risk-Based Contingency Model

Perhaps the most significant departure from standard gating systems is the ability to custom tailor the process to each and every project—the polar opposite of an SOP approach. In this approach, the entire new product process, from idea to launch, is viewed as a series of steps and activities designed to gather information to reduce uncertainty and thereby manage risk (Cooper 2011, 94–98). Thus the nature of the uncertainties and risk specific to a project should determine what happens in that project. But note that information only has a value to the extent that it can improve a decision (reduce project uncertainties or validate assumptions) that has economic consequences.

Thus, the project team begins with a blank canvas, then

- Identifies key unknowns and uncertainties,
- Pinpoints the critical assumptions (critical in the sense that the assumptions have economic consequences), and
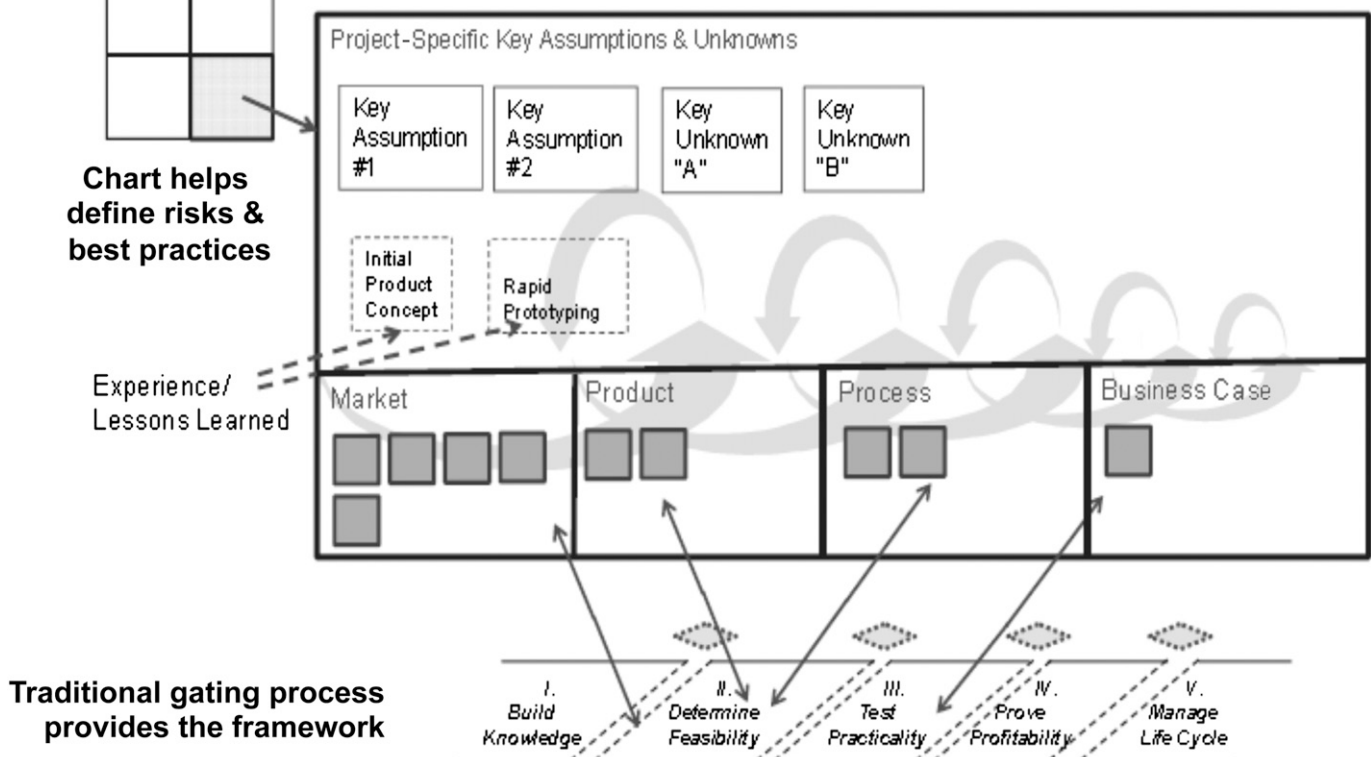- Determines what information is needed to validate these assumptions.



**FIGURE 4.** Corning's risk-based contingency model *(adapted from Kirk 2013)*

The information needs in turn define the deliverables required at the next project review, and hence define the activities required in that stage. In this way, the project team maps out its own set of deliverables and stage activities, specific to its own project. No activities are done simply because they are "on a list" in some manual, or deliverables prepared because there is a template to be completed.

The process is very flexible and efficient; every project has its own custom-tailored methodology with no work included that does not add value. The downside, however, is that project teams must be very experienced to make this work.

An example: Corning has developed and is piloting a contingency model based on project risk (Figure 4). Key assumptions and key unknowns are identified in each stage. And given these key assumptions, critical activities are defined: "Here is what best practice project teams have done, and thus what best practices apply to your project, given its assumptions and risks." So the key assumptions help to define the required activity set for the project. Experienced team members have no problem identifying what is important to do, what tasks are critical, and what best practices to do—not every project requires everything. Gorilla® Glass, which is used for the screen in Apple's iPad, was developed by such a team using this method (Kirk 2013).

### Flexible Criteria for Go/Kill Decisions

Most gating processes rely heavily on financial criteria to make Go/Kill decisions. The extension of context-based models, however, requires rethinking the investment criteria for these decisions. Research evidence shows that financial criteria do not yield the best portfolios, not so much because the financial models are theoretically wrong, but because data are missing (see the review in Cooper 2011, 264–266). In short, business cases are wrong, especially for the most innovative initiatives, and often by orders of magnitude. Thus progressive firms are adopting more flexible criteria.

This flexibility may be most important for technology development projects, which must rely more on strategic criteria than financial, since it is often difficult to predict the longer-term economic impact of the technology. Exxon Chemical was one of the first firms to develop a Stage-Gate system for research-based products, and the firm selected non-financial criteria (such as strategic fit, competitive advantage, and market potential) as Go/Kill drivers rather than profitability metrics.

Similarly, models proposed for highly innovative projects, where financial projections are likely to be unreliable, use scorecard approaches consisting of a mixture of strategic, competitive, leverage, and financial criteria. Additionally, more appropriate financial approaches are employed to deal more effectively with project risk, such as options pricing theory, Monte Carlo simulation, and Expected Commercial Value (for an outline of some techniques appropriate for innovation projects, see Cooper 2013b).

Finally, the gates and their Go/Kill decisions are no longer stand-alone. Stage-Gate was developed before portfolio management became popular in the 1990s, but now leading firms have successfully integrated gates with portfolio management. Portfolio management has become increasingly vital because of concerns arising over the mix and balance of projects in firms' development portfolios, and in particular, the trend to smaller, low-risk projects and away from larger, more venturesome initiatives (see Cooper 2013b, especially Figure 1). Gates occur in real time and look at individual projects in depth; gates are often where a project in trouble is killed after a thorough review. By contrast, portfolio reviews occur periodically (typically four times per year) and look at the entire set of development projects—examining the mix, balance, and prioritization of projects.

### An Agile Process

A second goal of next-generation idea-to-launch systems is to create a more agile and nimble process. Some of the practices here overlap with the adaptive and flexible methods outlined above, and some, but not all, are derived from Agile Development for software.

The various agile methods, based on the Agile Manifesto,[1] promote development, teamwork, collaboration, and process adaptability throughout the life cycle of the project. Two key principles of Agile Development are:

- Working software is delivered frequently (in weeks rather than months), and
- Working software is the principal measure of progress (Beck et al. 2001).

Agile methods thus break the development process into small increments with minimal planning; these increments, known as "sprints," are "timeboxed," limited to very short time frames, typically from one to four weeks, followed by a team meeting called a "scrum" (the term is derived from rugby—the scrum is similar to, although somewhat more physical than, American football's huddle; Takeuchi and Nonaka [1986] introduced the term in this context). At the end of each sprint, the development team must deliver a working product that has been demonstrated to stakeholders. Multiple iterations might be required to release a product or new features.

Physical product development, however, is much different from software development. For one thing, software development is almost infinitely divisible. A software development consisting of one million lines of code can be broken down into one hundred increments of roughly 10,000 lines, each

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[1] See "Manifesto for Software Development" at www.agilemanifesto.org.

> Leading firms have integrated key elements of the Agile Manifesto into their Stage-Gate processes.

increment yielding a working product. But the development of a new machine, a new food product, or a new polymer cannot be incrementalized in this way, and thus the notion of short time-boxed sprints does not apply quite as well.

In spite of these differences, leading firms have integrated key elements of the Agile Manifesto into their Stage-Gate processes. They have built in time-boxed sprints (although these are longer than the one to four weeks allowed for software development) for which the deliverable is something physical that can be demonstrated. The emphasis is on results rather than on documentation, and projects move quickly from milestone to milestone. At each milestone, actual results—for example, a validated working model—are checked against scheduled results.

Here, too, Corning provides an example. For special projects—large, higher-risk, bold projects, such as Gorilla Glass—Corning subdivides the development and testing phases into discrete increments defined in a 60–90-day plan; these are much like sprints but they sometimes last months rather than weeks. Within these increments, there are multiple one-day meetings with senior management—sometimes weekly—to review and move the project along. At the end of each increment, there is a major milestone review at which the project team must deliver something that can be demonstrated to stakeholders; there are physical milestone objectives for milestone reviews. The project moves quickly from management review meeting to management review meeting and milestone to milestone (rather than from gate to gate, as in Corning's traditional gating process).

The method is very resource intensive: the project team is 100 percent dedicated to the project, and senior management is very much engaged in the many reviews. A project can be killed or redirected at any milestone if important assumptions are not validated; it does not wait until the next gate for the Go/Kill decision.

Omicron, a highly innovative Austrian producer of hardware and software for testing electrical power networks, has also integrated some Agile principles into its idea-to-launch system. The firm, like Corning, has a very successful Stage-Gate system, called ATOM (Accelerate To Market), which handles traditional projects well. But for breakthrough projects, when the project is vague or it's unknown what the project will even lead to, the firm uses a different process, BTOM (Breakthrough To Market). The BTOM system provides some breathing room for ill-defined, risky projects, giving them space to get through the "valley of death" in the

early stages, and to the point where something can be shown to management and a customer.

Here's how it works: If such an idea creates enough excitement in the senior management team, the project is approved and resources are provided for a six-month period, unfettered, with no rules and no reviews—in effect, a six-month sprint. At the end of the six months, the project team must have something to show that has been seen and tested by a customer. At that point, there are three possibilities for the project:

1. Termination.
2. Transition to an ATOM project to develop a new product following all the traditional rules and regulations.
3. Continuation of the BTOM project for another six months.

The method is still quite experimental, but it has shown promising results, moving projects ahead that normally would have been killed in the early stages.

### Integrating Agile with Stage-Gate
Adopting Agile doesn't mean abandoning Stage-Gate. Indeed, as Karlstron and Runeson (2006) note in their case study of two high-technology firms using agile and Stage-Gate systems, the Stage-Gate framework can provide important support for agile development processes: "software development projects are not isolated activities. They usually exist as sub-projects in an environment composed of hardware development, marketing, production planning etc. which all must be managed and coordinated concurrently. . . . [A Stage-Gate system] gives support not only for the communication within the project, but also for decision makers sponsoring the project or acquiring the outcome of the project" (204). Similarly, Boehm and Turner (2004), discussing the contrasts between plan-driven software development and agile approaches at length, conclude that future projects will need both agility and discipline, which can be achieved by containing the agile development methodology within the gate model.

Firms are arriving at this conclusion on their own. Corning still uses its Stage-Gate framework even for these agile projects. "After more than 20 years with Stage-Gate, people are very familiar with it—it's a common reference point, and a good communication tool across marketing, production, and R&D," says Bruce Kirk, Director of Corporate Innovation Effectiveness. L.M. Eriksson, maker of telecommunications equipment (hardware and software), has also integrated agile methods with its Stage-Gate system, relying on time-boxed iterations with physical deliverables throughout the development and testing stages.

### Lean and Nimble
Another facet of agile development that many firms have embraced for physical products is the drive to make the system more lean and nimble, in keeping with Agile principles. The definition of bureaucracy is "work that adds no value," and getting rid of such work in your idea-to-launch system is certainly consistent with yet another Agile principle:

> Adopting Agile doesn't mean abandoning Stage-Gate. Indeed, the Stage-Gate framework can provide important support for agile development.

"Simplicity—the art of maximizing the amount of *work not done*—is essential."

Johnson & Johnson has revised its idea-to-launch process to eliminate bureaucracy—work that doesn't add value—using Lean Six Sigma methods. In the company's Ethicon Surgery group, business cases that had been 30–90-page documents that took weeks to prepare are now down to 4 pages and a lot less work (Belair 2007).

P&G's SIMPL process has been similarly trimmed as the company moved to much leaner gates, cutting the volume of deliverables packages to a mere six pages (Cooper and Mills 2005).

And at Praxair, the process manager uses lean methods (value-stream analysis) to see where the problems and time wasters are (Spero 2009). For example, a chemical reactor for R&D work is typically designed for the task, not for the turnaround. But it takes 3 days to do the task, and then 21 days to turn the reactor around for the next task. A reactor designed for both turnaround and task removes a big time waster in the development stage.

## An Accelerated Process

A third goal of next-generation idea-to-launch systems is to accelerate projects. Often, taking simple steps, such as removing the time wasters and blockages through value-stream analysis, cuts the time to market dramatically. Firms are employing a range of methods to accelerate development projects, including overlapping stages and concurrent activities, dedicated teams assigned to properly resource projects, efforts to sharpen the fuzzy front end, and automated systems to support project management.

> Often, taking simple steps, such as removing the time wasters and blockages through value-stream analysis, cuts the time to market dramatically.

### Overlapping Stages and Concurrent Activities

An important way to accelerate projects is simultaneous execution. Here, key activities and even entire stages overlap, allowing projects to move ahead when information is reliable and stable—rather than waiting for perfect information (Figure 5). In this way, the project can be accelerated—development becomes a rugby game, with multiple parallel activities, rather than a relay race, with activities strung out in series. In some cases, it is even acceptable to move activities from one stage to an earlier one and in effect to overlap stages, starting one stage before the previous stage is finished.

Toyota has long used this approach; the rule in the firm's development process is to synchronize processes for simultaneous execution (Morgan 2002). That is, each subsequent function maximizes the utility of the stable information available from the previous function as it becomes available. Development teams must do the most they can with only that portion of the data that is not likely to change.
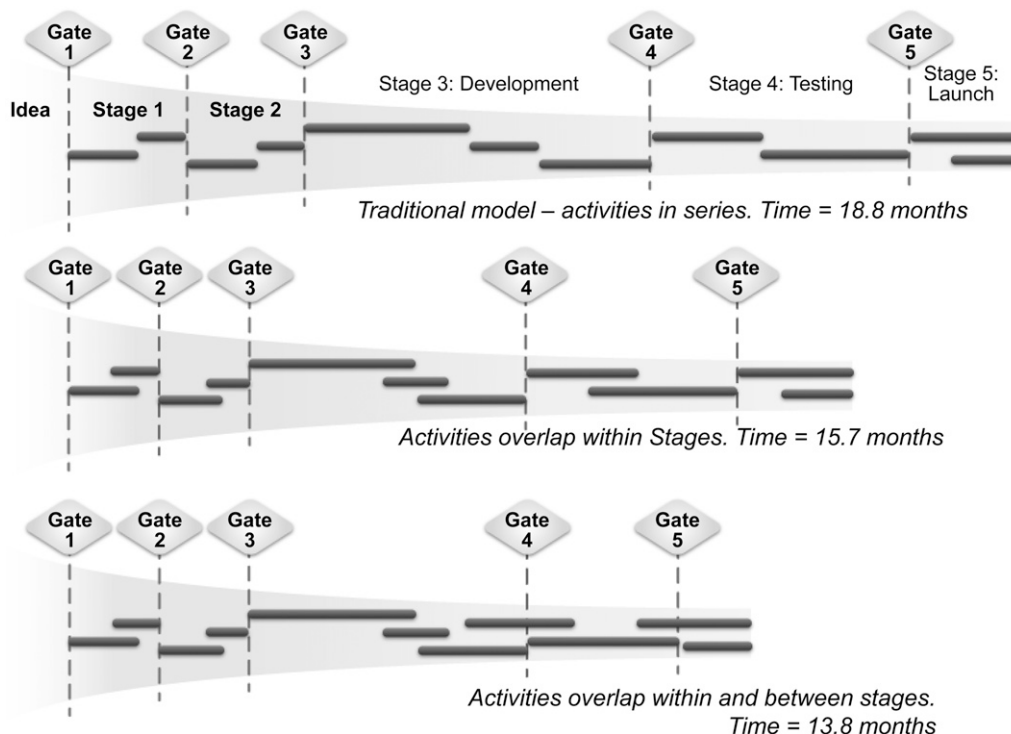


**FIGURE 5.** Overlapping activities and stages

> To my knowledge, no company has yet implemented every element of the next-generation system. But some have come close.

### Properly Resourced Projects with Dedicated Teams

One of the major impediments to fast delivery of new products is a lack of focus and inadequate resources—spreading resources too thinly across too many projects and other work (Cooper 2011, 2013a). Fully dedicated teams are a must to maximize speed. Benchmarking studies show that top-performing businesses in new product development are considerably more focused than others. They also have dedicated resources for product innovation: half have dedicated product development teams (project team members are not working on a lot of other tasks), and more than half have a fully dedicated product innovation group that works on new products full time (Cooper 2011).

### Sharpening the Fuzzy Front End

More thoughtful scoping—better front-end homework to anticipate challenges in advance and get projects requiring new technology on the right track—can do much to save time downstream. A sharper, earlier definition of project needs and solutions can help steer downstream decision making and clarify assumptions and risks.

P&G is addressing this issue in the design of their Agile Innovation Management (AIM) system, instituted to build capabilities in project leaders and bring the agility of the system to the next level. AIM forces a very deliberate focus on the scoping of the project, placing an emphasis on the front-end of the SIMPL process and making the fuzzy front end a little less fuzzy. This is accomplished through a set of questions that must have clear answers before the project moves forward:

- What is the risk of the project and what are the true requirements for success?
- What do you want and when?
- What is possible and when?
- Do you need invention?

If the answer to the last question is yes, the project moves into P&G's technology development system (FEI).

### Automated Systems

An increasingly popular way of accelerating projects is the use of automation software. The benefits of automation are two-fold: less time is required to complete stage activities and deliverables, and the administrative load associated with process execution is reduced. For example, project team members can more easily create gate deliverables, search for documents, and perform other routine tasks when they have ready access to embedded templates and best-practice content. Some systems prepopulate templates for key deliverables (such as status reports, presentations, and resource charts) with project information recorded elsewhere in the system. As a result, documents that previously took hours or days to prepare can be completed in minutes.[2]

### Integrating the Evidence into A Next-Generation Idea-to-Launch System

We've had a glimpse into what some companies are doing to reinvent their Stage-Gate systems, and in some cases move beyond it. Integrating these various improvements and changes—some evolutionary, such as fast-track versions, some more revolutionary, such as the risk-based contingency model—produces a framework for next-generation idea-to-launch systems, which may be contrasted with traditional Stage-Gate development in terms of context, system design, the role of gates, and the organization of project teams (Table 1).

The traditional process is well suited to known and traditional product developments, which are the majority of projects for most firms. But the newer process is designed for more innovative and bolder projects targeted at less well defined but growing markets and relying on newer technology with technology risks. The next-generation system is adaptive and flexible, agile and accelerated. Projects move quickly from milestone to milestone and engage in frequent experiments or spirals, with the evolving product regularly exposed to customers in a series of build-test-revise iterations. Product definition is far from 100 percent at the beginning of development, but evolves as customers confirm the product's value proposition through protocepts, rapid prototypes, and early beta versions. Stages and activities overlap. Indeed, the process is customized to each project via the risk-based contingency approach: starting with a blank canvas, identify the uncertainties and risks, define the critical assumptions, and define the right deliverables and activities to validate the key assumptions.

Gates are still part of the next-generation system, but they are less relevant than in the traditional process, and they are integrated with portfolio management and portfolio reviews. Go/Kill and prioritization decisions may be made at any of these points, as well as at milestones, for example, if an important assumption is not confirmed. Go/Kill criteria are less financially focused, emphasizing more strategic, competitive, and leverage factors; when the criteria are financial, they employ more appropriate financial models to account for risk and options buying. Senior management is more engaged in the investment decision process, ready to commit the necessary resources to execute the project in an accelerated fashion.

Organizationally, the next-generation system requires dedicated cross-functional project teams with the resources needed to move the project forward quickly—dedicated people for important projects, not spread over multiple projects and other tasks. Functional managers become resource

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[2] A number of excellent and accredited IT solutions are available to support idea-to-launch systems. See www.stage-gate.com/certification_directory.php.

**TABLE 1.** The next-generation idea-to-launch framework compared to Stage-Gate development

| | Traditional Stage-Gate | Next-Generation System |
|---|---|---|
| ***The Context*** | | |
| **The Situation** | Mature market | Existing and rapidly growing market |
| | Market and customers well known | Large potential market |
| | Well-known technology | Many market uncertainties and unknowns, some technical risks |
| | Few market or technical uncertainties or risks | |
| **Product Type** | New item in a product line Product improvement, modification, renovation | Innovation: bigger, bolder, more venturesome project |
| | | Higher-risk initiative |
| **Example** | New model of an HP ink-jet printer | Corning Gorilla® Glass |
| **Customer Needs** | Well known and stable over time (via traditional market research) | Some known, some unarticulated |
| | | Many unsolved customer problems and unresolved needs |
| **Market Size** | Large and defined May be maturing, flat, or even declining | Existing, not necessarily large, but growing rapidly |
| | | Growth phase of product life cycle |
| **Competition** | Red Ocean | Some early competitors, who may not yet have the right or dominant solution |
| | Many capable competitors | |
| | Undifferentiated products, even tending to commoditization | Differentiated products |
| **Technology Maturity** | Mature | Newer technology, but largely existing |
| | Well known | May be new to company, but familiar |
| | In house | |
| **Technical Risks** | Few risks; technical hurdles can be overcome easily | Some risks and technical hurdles; hurdles can likely be overcome |
| | Can envision a solution | Technical solution largely envisioned |
| ***The Idea-to-Launch System*** | | |
| **System** | Well-defined traditional Stage-Gate process | Triple A: adaptive & flexible, agile, accelerated gated system |
| | Like a Standard Operating Procedure | Context-based (every project is unique) |
| | Stages laid out in a linear fashion | Risk-based contingency approach; risks and assumptions define deliverables and activities |
| | Activities pre-specified for each stage Standard deliverables defined (with templates) for each gate | Frequent design-build-test iterations (spirals)—more experimental |
| | Fairly repeatable and predictable stage activities: planned, not iterative | Nimble and quick, project moves milestone to milestone (sprints) |
| | Clear, consistent exit and Go/Kill criteria, rigorous gate reviews, monitor to plan | Overlapping stages |
| **Product Definition** | Established in detail up front (>90% specified) | Partly established up front (40%–70% specified) |
| | Based on well-understood customer requirements, defined technical solutions | Updated as feedback dictates (via design-build-test spirals) |
| **Understanding Market and Customer** | Traditional market research, i.e., Voice of Customer, site visits, ethnography | Work with real customers who represent market |
| | Determine needs, wants, desires | Voice of Customer early to determine needs, problems, market potential |
| | | Interact with users via rapid prototypes, early beta versions, etc. |
| **Building the Right Product** | Follow dominant design adding customer-valued features (visible improvements) | Define product, technical choices, features through early and rapid prototypes and beta products to customers |
| | Emphasize process- and cost-focused innovations | Seek customer confirmation of design, value, sales volume through spirals |
| ***The Gates*** | | |
| **Flow** | Project moves gate to gate | Project-driven milestone to milestone |
| | Stages and gates very relevant | Go/Kill decisions at milestones, gates, and portfolio reviews |
| | | Stages and gates less relevant |

**TABLE 1.** *continued*

| | Traditional Stage-Gate | Next-Generation System |
|---|---|---|
| **Go/Kill Criteria** | Largely financial—NPV, IRR, payback period<br><br>Financial risk vs. return assessment | More qualitative and strategic<br>Based on scorecard with both nonfinancial and financial criteria<br><br>ECV, options pricing, and Monte Carlo to deal with risk and options |
| **Gatekeepers** | Senior & middle management from the business unit | Senior and middle management from the business unit<br><br>Sponsors must be senior to ensure adequate resource commitments |
| **Emphasis** | Gate deliverables mostly information and documentation (may overemphasize reports, often voluminous) | Focus on results, not documentation<br>Being able to show something to stakeholders |
| **Deliverables Required** | Well-defined list of deliverables for each gate (standard templates)<br><br>Quite disciplined | Deliverables templates exist, but only as a guide<br><br>Deliverables determined by project context |
| **How Deliverables Are Defined** | Broad standard list for every project | Team and gatekeepers identify key assumptions and unknowns, then define key deliverables<br><br>Project-specific deliverables |
| **Portfolio Management** | Most Go/Kill decisions made at gate meetings<br><br>Portfolio reviews are a check | Gates integrated with portfolio reviews<br>Go/Kill decisions made at both |
| *The Organization* | | |
| **Organizational Structure** | Organized by specialized functions or as cross-functional project team with team members drawn from functional areas | Organized as an accountable cross-functional project team<br><br>Team may be a venture team and/or operate outside the organizational structure, e.g., a Skunk Works or off site |
| **Resources** | Team members on multiple projects concurrently, projects often understaffed<br><br>Time and resource allocation decisions made at gates | Team members dedicated to project<br>Projects properly resourced for maximum effort and focus |
| **Team Structure** | Balanced matrix:<br><br>Project leader is assigned to oversee project<br><br>Team members assigned from functional departments | Project matrix:<br><br>Project leader is assigned to lead and oversee project, has control over resources |
| **Relationship to Functional Departments** | Project leader shares responsibility and authority with functional managers<br><br>Joint approval and direction | Project leader has full responsibility and authority for project<br><br>Functional managers assign personnel, provide technical and marketing expertise |

providers. The project team may be organized as a project matrix or venture team, or may even operate outside the official bureaucracy of the company (for example, as a Skunk Works).

To my knowledge, no company has yet implemented every element of the next-generation system described here. But some have come close. Private discussions with executives in these firms reveal dramatically positive results.

So perhaps it's time to rethink your idea-to-launch system, borrow some of the methods outlined in this article, and strive for more a more adaptive, agile, and accelerated stage-and-gate system.

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