

# The Stage-Gate® Model: An Overview

BY SCOTT J. EDGETT



**Success. Do you have the ability to successfully develop and launch new products and services into a competitive marketplace on a sustainable basis?**

Companies that answer yes to this question have one thing in common: They understand that product innovation is a critical capability. They have successfully designed, implemented and internalized Idea-to-Launch innovation processes for conceptualizing, developing and commercializing new products and services. More commonly, these processes are known as the Stage-Gate® model.<sup>1</sup>

## Stage-Gate®: A Proven Approach

Stage-Gate is a value-creating business process and risk model designed to quickly and profitably transform an organization's best new ideas into winning new products.<sup>2</sup> When embraced by organizations, it creates a culture of product innovation excellence - product leadership, high-performance teams, customer and market focus, robust solutions, accountability, alignment, discipline, speed and quality.

Companies willing to work hard at creating innovation capabilities become top performers and are realizing the benefits. Success rates, in the marketplace, are 2.5 times higher (63-78 percent) than the poor performers that achieve only a 24 percent success rate.

Given the large amount of resources – both people and money - dedicated to innovation in most companies, the rate of return for success versus the cost of failure will have a significant impact on whether your organization will achieve its revenue and profit goals from new product innovation. Hence the need for a business process like Stage-Gate which drives value.

Who are these companies with Stage-Gate innovation processes that seem to win more in the marketplace than they lose? It is not hard to identify them in any given industry. These are the companies that year-over-year have a proven innovation track record in their industry sectors. Firms, for example, like 3M, Abbott Nutrition, Baker Hughes, BASF, Corning, Exxon, GE, Hallmark, Kellogg, Pepsi, National Oilwell Varco, Procter & Gamble, to name but a few.

More than 80 percent of companies in North America use some type of a Stage-Gate innovation model. Worldwide the adoption of Stage-Gate continues to grow as organizations seek to improve their innovation capabilities.

## Proven Success Drivers

Just having an Idea-to-Launch process in place does not guarantee success. It must also have the traits that are proven to impact success. Does your process have those traits?

Benchmark data has proven that successful companies share some common features when it comes to innovation and their internal process capability. Five of these proven success ingredients of a good process are:

1. Customer driven focus
2. Upfront activities
3. Tough Go/Kill decision points
4. Truly cross-functional teams
5. Top management involvement

These success traits should be built into an organization's DNA. Are they built into yours?

### 1. Customer Driven Focus

Customer focussed innovation drives success rates that are twice as high in the marketplace and have a much higher productivity rate (4.5 times). It is the number one key to success and profitability. The goal is to maintain a sharp focus on developing and delivering new products that are differentiated, solve major customer problems and offer compelling value propositions to the customer.

**How:** A customer driven focus is built into the entire Idea-to-Launch process. Beginning right at the start with the front-end of the process, ideas, both internally and externally generated, are validated by voice-of-customer analysis. A customer driven focus continues in each subsequent stage of the process by having constant

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interactions with the customer, for example: concept screening and testing, early and rapid prototype testing to ensure the design is staying true to what the customer wants and will pay for, gauging customer reaction and purchase intent via working prototypes and customer trials.

Key questions are asked and answered throughout each stage of the process to ensure that the development team understands what main benefits are important to the customer. This ensures that the new product/service will offer new and unique benefits that provide superior value to the customer and are better than the competition's offering.

## 2. Upfront Activities

Success or failure of a new product is often determined before it even enters the development stage. It is the critical upfront activities that define the attributes, features and benefits that will comprise a winning new product and provide an understanding of the customer's perceived value.

Companies with solid upfront activities built into their innovation process find this also reduces time to market. It does so by sharpening the product and project definition; ensuring the product specs are correct; confirming product design early in the process and minimizing expensive last minute changes and project scope creep. Top performing companies avoid rushing into product development thinking that they know best what the market wants. Instead, they take the critical steps to ensure a well-defined product definition exists that has been validated with solid input from marketing. Project scope creep and expensive, time-delaying, last minute changes that could have been prevented with better information are minimized.

**How:** Upfront activities are built right into the process with the necessary time and resources allocated. A thorough analysis of the market, competition and customer is undertaken in advance of the development of the product. Activities such as concept screening and testing, feasibility assessments for technical, legal, financial and manufacturing are also conducted to create a solid business case to evaluate the project's merits before development work begins. Time is spent to understand what a winning new product must be. In many top performing firms one outcome of building into the process a strong customer driven approach, supported by solid upfront activities, is the creation of a clear, fact-based product definition. This then becomes a key output or deliverable for this stage of work.

## 3. Tough Go/Kill Decision Points

Too many projects, not enough resources; pipeline moving too slowly; projects that are never killed. These are all common symptoms that the innovation governance system is not working properly. Top performers ensure that they have in place clear Go/No Go decision points (or Gates) and clearly identified decision makers.

Decisions are made at their Gate meetings. They understand that effective Gate meetings are critical to enabling the entire process. In fact, having tough Go/No Go decision meetings is one of the top drivers of a successful Stage-Gate process.

**How:** Move towards having 'Gates with Teeth'. Select decision points throughout your process where management and project teams can come together to review a project and its merits for future funding. Each project is reviewed against clear decision criteria and the project's resource needs are compared against other competing projects in the pipeline. Fact based decisions are made at these meetings. The decision makers are the people who own the resources and can make the allocation decisions required by the project teams to move their project forward. Timely decisions are made and projects are actually approved or killed.

## 4. Truly Cross-Functional Teams

Innovation projects are complex and affect or require input from many different parts of an organization. Therefore, the way project teams are organized and how well team members work together will impact both time-to-market and project success rates. Strong, talented project leaders who are accountable for a project's success leading truly cross-functional teams is a well-known success driver. Unfortunately, many companies find they do not have enough of these types of skills within their innovation teams and organizations. Some companies still follow a functional silo resource allocation approach to projects.

**How:** Ensure your organization has clearly identified project leaders with the skills to manage complex projects under tight timelines. In today's global development environment teams need to have the cross-functional skills and resources necessary to ensure that they can be successful. Remove roadblocks that might hinder team members and, in turn, ensure project leaders and team members are accountable for the results.

## 5. Top Management Involvement

It all starts at the top. Top management must not only be clearly committed to product innovation, they also need to demonstrate strong and visible support. It cannot be understated. Without this visible support success rates will decrease. Senior management must 'walk the talk'.

**How:** The leadership is responsible to set and communicate the innovation strategy and direction, allocate the necessary funding and provide guidance on the balance between short term needs and long term goals of the organization. Senior management must also maintain the right balance between oversight of innovation projects and empowering teams to get the job done. Executives need to set the pace and provide the support necessary for success.

## Stage-Gate® – An Idea-to-Launch Process<sup>3</sup>

Can an organization dramatically improve the quality, speed, and profitability of their new product projects while driving down the risk of failure? Absolutely.

The Stage-Gate idea-to-launch model is the industry standard for managing new product innovation excellence. The ground-breaking, widely implemented process expertly integrates numerous performance driving best practices into an easy-to-understand recipe for success. Its robust design engages users of all decision levels and functions, enabling quality execution, timely Go/Kill decisions, alignment and speed. The result: Superior products reaching markets faster and more profitably.

Whether a company is developing game changing technologies and products that alter competitive landscapes and create new markets, or it is introducing new-to-company products to generate new revenue streams, or whether it is defending market share by releasing improved versions of products, the Stage-Gate model improves performance and reduces your risk of failure.

In addition to the benefits that are well-documented by research and benchmarking results many companies that have implemented and adopted an authentic Stage-Gate process realize the following benefits:<sup>4</sup>

- ✓ Accelerated speed-to-market
- ✓ Increased new product success rates
- ✓ Decreased new product failures

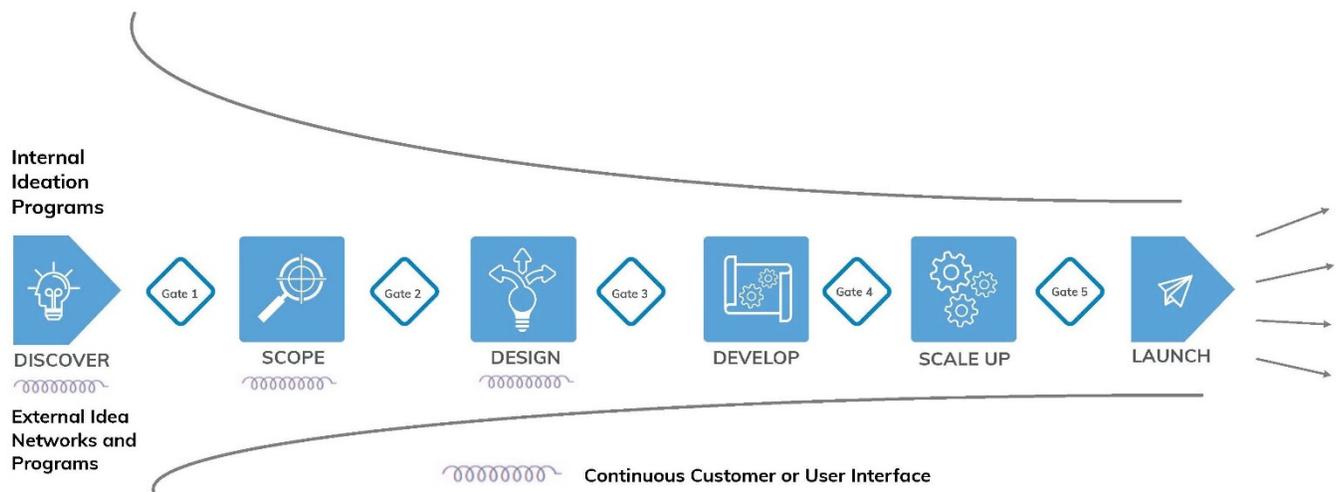
- ✓ Increased organizational discipline and focus on the right projects
- ✓ Fewer errors, waste and re-work within projects, less scope creep
- ✓ Improved alignment across business leaders
- ✓ Efficient and effective allocation of scarce resources
- ✓ Improved visibility of all projects in the pipeline
- ✓ Improved cross-functional engagement and collaboration
- ✓ Improved communication and coordination with external stakeholders.

## How Does a Stage-Gate Process Work?

The Stage-Gate process is based on the belief that product innovation begins with ideas and ends once a product is successfully launched into the market. (See Figure 1)

The Stage-Gate model breaks down the often complex and chaotic process of taking an idea from inception to launch into smaller stages (where project activities are conducted) and gates (where business evaluations and Go/Kill decisions are made). In its entirety, Stage-Gate incorporates upfront pre-development activities (customer driven business justification and preliminary feasibilities), development activities (technical, marketing, and operations) and commercialization activities (market launch and post launch learning) into one complete, robust business process.

Figure 1: A Typical Stage-Gate® Process



## The Stages

A project leader drives the project through each stage. Each stage is designed to collect specific information to help move the project to the next stage or decision point. Each stage is defined by the activities within it. These activities are completed in parallel (allowing for projects to quickly move toward completion) and are cross-functional. The activities are designed to gather information and progressively reduce uncertainty and risk. Each stage is increasingly more costly and emphasizes collection of additional information to reduce uncertainty. The results of this integrated analysis become a set of deliverables that provide the input to decision meetings (Gates).

In the typical Stage-Gate model, there are 5 stages, in addition to a robust front-end or Idea stage.

### Discover

- Pre-work designed to discover and uncover business opportunities and generate new ideas.

### Stage 1 – Scope

- Quick, inexpensive preliminary investigation and scoping of the project. It is largely desk research.

### Stage 2 – Design

- Detailed investigation involving primary research (customer, market and technical) leading to a Business Case that includes product and project definition, project justification, and the proposed plan for development.

### Stage 3 – Develop

- The actual detailed design and development of the new product and the design of the operations or production process required for eventual full scale production.

## Stage 4 – Scale Up

- Tests or trials in the lab, plant and marketplace to verify and validate the proposed new product, brand/marketing and production or operations plans.

## Stage 5 – Launch

- Commercialization: the beginning of full scale operations or production, marketing and sales.

## The Gates

Preceding each stage, a project passes through a gate where a decision is made whether or not to continue investing in the project (a Go/Kill decision). These serve as quality-control checkpoints with three goals: ensure quality of execution, evaluate business rationale, and approve the project plan and resources.

Each gate has a different purpose. For example, Gate 1 is a gentle, early screen of new ideas while Gate 3 is a tougher, business rational driven decision gate that approves projects to enter into the more expensive development stage. Each Gate is, however, structured in a similar way:

**Deliverables:** The project leader and team provide decision makers (Gatekeepers) with the high-level results of the activities completed during the previous stage.

**Decision Criteria:** Every project is measured against a clearly defined set of success criteria. The criteria should be robust to help identify winning products sooner. The authentic Stage-Gate process typically incorporates six proven criteria: (See sample scorecard in Figure 2)

Figure 2: Sample Gate 2 Scorecard

CRITERIA	0	4	7	10	SCORE
<b>Strategic Fit &amp; Importance</b> • Degree of alignment with business and/or innovation strategies • Importance of the project to the company	• Lack of alignment • Project not important			• Considerable alignment • Project is very important	
<b>Product &amp; Competitive Advantage</b> Degree to which the potential product: • Offers greater benefits to the customer • Impacts competitive advantage	• No competitive advantage; no impact on our ability to compete			• Provides highly differentiated benefits • Greatly enhances ability to compete	
<b>Market Attractiveness</b> • Size of the market • Rate of growth for the market	• Small or niche market • No or limited market growth			• Very significant market • High market growth	
<b>Synergies &amp; Core Competencies</b> • Leverage our core competencies in marketing, sales, manufacturing/ operations, and/or distribution • Availability of required resources (skills, capability and experience)	• Limited or no ability to leverage core competencies • Required resources are not available and cannot be acquired			• Strong opportunity to leverage core competencies • Required resources are available and accessible	
<b>Technical Feasibility</b> • Degree of technical complexity • Size of the technical gap	• Highly complex technical solution • Very large technical gap			• Straightforward technical solution • No or limited technical gap	
<b>Financial Reward vs. Financial Risk</b> • Length of payback period • Level of financial risk	• Long payback period • Very high financial risk			• Good payback period • Limited financial risk that is acceptable	
<b>RECOMMENDATION:</b>	<input type="checkbox"/> GO	<input type="checkbox"/> KILL	<input type="checkbox"/> RECYCLE	<input type="checkbox"/> HOLD	<b>TOTAL SCORE</b>

Source: SG Navigator™ (www.stage-gate.com)

- Strategic Fit
- Product and Competitive Advantage
- Market Attractiveness
- Technical Feasibility
- Synergies/Core Competencies
- Financial Reward/Risk.

**Outputs:** A decision is made (Go/Kill/Hold/Recycle). If a Go decision is made, then new product development resources are committed to continue the project. The action plan for the next stage is approved. A list of deliverables and a date for the next gate meeting is set.

The Stage-Gate model is designed to improve the speed and quality of execution of product innovation activities. The process helps project teams prepare the right information, with the right level of detail, at the right gate to support the best decision possible. The process empowers the project team by providing them with a roadmap with clear decisions, priorities, and deliverables at each gate. High quality deliverables submitted to Gatekeepers enables better, more timely and fact-based decisions for allocating capital and operating resources.

Modern Stage-Gate models also embrace and strongly support the need to be:

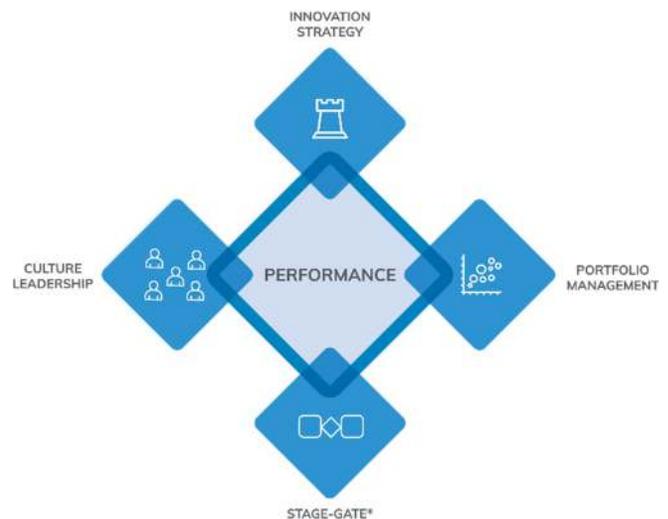
- Fast and flexible – multiple processes exist to match project complexity and risk
- Customer driven - a customer centric approach is built throughout the entire process
- Dynamic and vibrant front-end – an ideation stage that is both internally and externally focussed to generate the best new ideas.

### A Complete Innovation Performance Framework<sup>5</sup>

The conceptualization and development of new products and technologies is one of the more complicated initiatives an organization can undertake as new ideas migrate from ideation through the feasibility, development and scale-up stages and, finally, into commercialization. The Stage-Gate process is a time tested and proven way to guide an organization through this. However, top performing companies also realize that this is only one piece, albeit a critical part of their internal innovation capability. The Stage-Gate process cannot be successful in isolation from other critical innovation capabilities. Instead top performers have also taken steps to ensure that their innovation strategy, portfolio management and culture is aligned and integrated with their Stage-Gate process.

(See Figure 3)

**Figure 3: The Innovation Performance Framework®**  
**Innovation Performance Framework®**



These four, key internal pillars (Innovation Performance Framework) combined drive innovation value on a sustainable basis. Top performing companies have mastered all four critical capabilities – have you?

#### Footnotes:

1. Stage-Gate® and Innovation Performance Framework® are registered trademarks of Stage-Gate Inc.
2. Stage-Gate process was originally created by Stage-Gate International's co-founder Robert Cooper. For a comprehensive overview see *Winning at New Products*, 5th Edition
3. This section is adapted from <http://www.stage-gate.com/resources>
4. Additional benchmarking data and articles can be found on [www.stage-gate.com](http://www.stage-gate.com).
5. Edgett, S.J. "Innovation: A Critical Capability", *The European Business Review*, January-February, pp. 28-30, 2014

#### About the Author

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