



Outsourcing and Evolution

New Ways to Win in the Product Development Process

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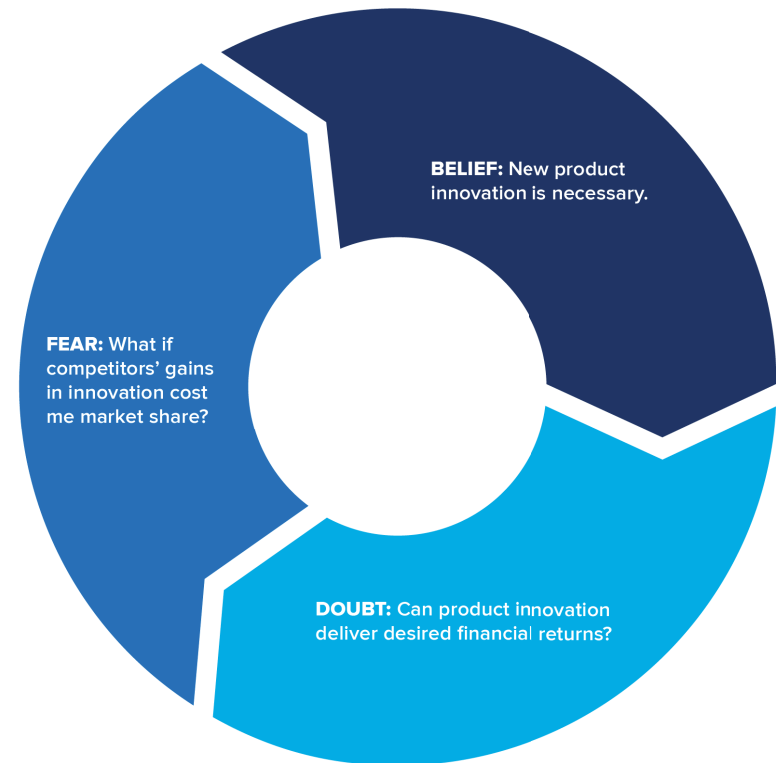
By Scott J. Edgett, Ph.D., CEO Stage-Gate International

The global marketplace has been brutal to companies unable to adapt to increasingly agile competition, especially over the past decade. For those companies still in the mix, executives in manufacturing and operations functions have proved crucial. By focusing on continued improvement in efficiency and effectiveness, these executives have led successful initiatives in productivity improvement, lean manufacturing, supply chain rationalization, sustainability and even reshoring — all invaluable contributions to margin enhancement and quality improvement.

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It's this ability to rapidly react to changing technology and market needs with a portfolio of successful, new products that creates a strong competitive advantage in the global market.

These leaders in manufacturing/operations recognize that the drive for cost reduction or cost containment, by themselves, are not enough to make a company successful in the global marketplace. A company must also innovate and be able to develop and launch a steady stream of winning new products. Doing so supports corporate objectives of increasing revenue, profitability and productivity, and when accomplished via new technologies, can also improve time-to-market. It's this ability to rapidly react to changing technology and market needs with a portfolio of successful, new products that creates a strong competitive advantage in the global market.



Running a successful new product development program is easier said than done, however, and many companies find themselves in a bind. On the one hand, executives question whether or not product innovation can actually yield desired financial returns, especially given poor success rates and product launches that fail to meet sales and profit targets. Time-to-market lags also require approaches that are more flexible and scalable — another daunting challenge to overcome. At the same time, executives worry their competitors' gains in innovation will cost them market share. This fear gives rise to a renewed quest for more product innovation that can somehow yield successful new product introductions under shrinking time-to-market pressures.

When the Stage-Gate® Idea-to-Launch Process Evolves

Many executives understand that innovation is a complex undertaking that affects — and is affected by — all functions within a business. To meet this challenge, many manufacturing/engineering companies have successfully implemented a Stage-Gate Idea-to-Launch Process. However, best practice companies such as 3M, Emerson Electric, GE, ITT and Parker Hannifin have also taken additional steps, customizing and adapting their Stage-Gate processes to ensure all functions within the company are working in concert to continually improve and enhance efficiency and effectiveness.

Take a closer look and you will discover that, although Stage-Gate is a consistent core in how these companies approach innovation, its actual design and implementation has evolved along with the companies themselves as their innovation capability matures. In these best practice organizations, new product development is approached as a multi-functional cooperative effort at both executive and team levels. Manufacturing and engineering executives, in particular, play an important role in all aspects of the innovation process. Taken together, each function adds expertise in the common quest for more successful product innovations, including a search for platforms and initiatives that drive more new product introductions under dwindling time-to-market timelines.

From a manufacturing and operations perspective, then, these efforts begin at the idea stage and continue through development and commercialization. Executives do not wait until the scale-up stage, where product changes are expensive and time-consuming. Using Stage-Gate processes, they leverage both internal and external manufacturing and engineering options, facilitating speed to market and improving flexibility and capability.

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The Online Outsourcing Option

Using online outsourcing partners is one viable option that enhances speed and reduces costs. Such an approach can be utilized throughout the process, beginning in the early pre-development stages of a project all the way through commercialization.

Consider the following example: A mid-sized engineering company puts new product samples in front of customers early and often. This practice enables the company to gain meaningful customer feedback as the new product evolves and migrates through the development process. Traditionally, manufacturing was too busy or unwieldy for unscheduled work that might assist such a practice. Producing samples or prototypes in small batch sizes or one at a time created delays for the new product development

team and also caused internal conflict between functions. The company was able to solve these problems by “opening up” and engaging help from outside the company. By outsourcing sample production through an online outsourcing broker, the company is able meet the need for timely customer prototypes in a cost-effective manner without internal disruptions, capital outlays or time consuming RFPs — a win for all parties involved.

For this company and others like it, the best practice of embracing outsourcing support is now part of traditional Stage-Gate Idea-to-Commercialization Processes. A new breed of online outsourcing partner has emerged, introducing and leveraging a technology-based approach to manufacturing that creates a supply chain on-demand.

COMPANIES LIKE MAKETIME ACCOMPLISH THIS BY:

- Providing access to a large supplier base with diverse capabilities
- Making it easy to scale production activities up and down
- Enabling a single-source point for communication, payments, documentation and management
- Maintaining a digital thread to ensure knowledge is leveraged upstream and downstream for timely manufacturing feedback and cost reduction
- Speeding time-to-market
- Reducing operational costs

Online Outsourcing Meets Stage-Gate

Given this new outsourcing option, each stage of work in the new product development process can be re-examined to see where digital outsourcing partners can add value, reduce operational costs and/or improve speed. For example:

Ideation or Discovery Stage: Manufacturing and operations executives are active participants in suggesting new product ideas and enhancements to improve existing products. External sources can be leveraged to solve engineering/manufacturing challenges and provide ideas for material substitutions, cost reduction, quality improvements and meeting environmental targets. The world is moving too fast to rely solely on internal capabilities and internally-generated ideas.

Scoping and Business Case Stages: An external focus has been built-in to support traditional manufacturing/engineering activities. For example, during the early scoping of a project, questions are asked about production availability, possible impacts given preliminary demand forecasts, capability gaps, manufacturing and operations alternatives and the need for external suppliers or partners. Cost savings and time savings are sought out. Preliminary forecasts for capital expenditures are made for machinery, and less expensive external machining sources are considered to reduce cost, avoid internal bottlenecks and/or avoid delays. A shortlist of suppliers is identified and vetted.

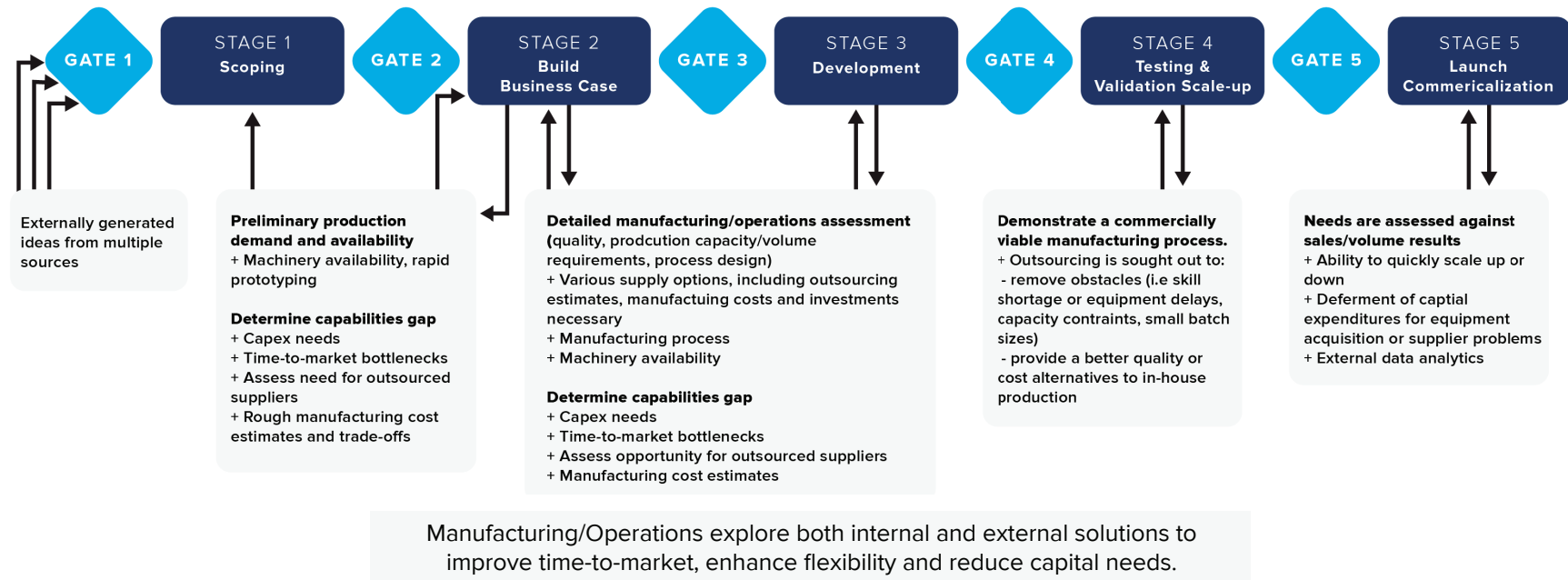
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The business case is further refined, granting a fuller understanding of customer needs, market potential and product definition. Manufacturing input is also honed to provide updated estimates of volume, cost and capital needs. This includes activities such as: assessments of the manufacturing process, quality requirements, production capacity/volume, process design, material/supply chain needs, plant capability, production limitations/trade-offs and scale-up timing. Trade-offs are assessed, and external outsourcing solutions — including online sourcing brokers — are considered to off-set time delays, personnel shortages, production impact and costs (including capital investments).

Development, Validation and Scale-up Stage: Here, the focus shifts to problem solving and delivering a working version of the product for scale-up. Technology problems are resolved, and manufacturing trials are undertaken. In this stage, manufacturing and operations executives are on the lookout for cost savings and problem solving ideas to scale production. Cost and time savings become critical here as delays in this phase of the project can

Manufacturing Leverages Outsourcing Options Throughout the Stage-Gate Process



be very costly and/or time consuming. Outsourcing to an online procurement partner in this stage can remove obstacles (such as skill shortages, equipment delays, capacity gaps/constraints and small batch sizes) or provide a better quality or cost alternative to in-house production. The goal is to demonstrate a commercially viable manufacturing process.

Commercialization Stage: As manufacturing, supply and quality plans are executed to support full production, decisions are reviewed to assess whether outsourcing needs have changed. For example, depending on the actual sales/volume results, the ability to quickly scale up or down, defer capital expenditures or bypass supplier problems can all be addressed using pre-qualified suppliers sourced through online brokers — especially

those that also employ extensive data analytics to enable cost and quality comparisons, which can then be used to expedite similar procurements in the future.

Go/Kill Decisions: Throughout the Stage-Gate process, timely go/kill and investment decisions must be made. Manufacturing executives must be active participants at these pivotal decision points. Their early and continual involvement at Gate meetings, as the project migrates through the process, greatly improves cross-functional communication, alignment and understanding of the project. It also speeds up decision-making for the project teams. These early Gate meetings are often where manufacturing can offer viable options to improve scale-up time and present alternatives for capital acquisitions.

The Many Benefits

These examples show that, in companies exhibiting best practices in innovation, manufacturing/operations executives are taking an active role throughout the Stage-Gate Idea-to-Launch Process. They are not waiting until the later stages to react but, instead, are building in necessary due diligence activities. Beginning in the early stages all the way through the process, they identify the need for partners, helping their companies save money and time. These decision-makers demonstrate that early and continual cross-functional participation leads to better communication and alignment at both the executive and project team level.

The benefits of this approach are many:

1. Improved time-to-market
2. Quicker decisions on whether to seek external suppliers
3. Fewer production delays
4. Reduced capital and operating costs
5. Faster and cheaper samples and prototypes for customer feedback
6. Quick testing of new technology without capital investment
7. Elimination of delays and costs associated with preparing RFPs
8. Elimination of delays and costs associated with vetting potential suppliers.

Online outsourcing improves manufacturing function flexibility by providing more timely options to deal with capacity, financial and time constraints. Similarly, manufacturing/operations involvement from beginning to end of the Stage-Gate process is proven to result in more winning new products.

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About the Author

Scott J. Edgett, Ph.D., is Chief Executive Officer at Stage-Gate International and is internationally recognized as one of the world's top experts in product innovation. A co-author of eight books and numerous articles, Dr. Edgett is a former professor at the DeGroote School of Business at McMaster University.

About Stage-Gate International

Stage-Gate International is a global innovation management consulting firm providing consulting services, products and conferences to accelerate innovation. We specialize in the Innovation Performance Framework®: innovation strategy, portfolio management, Idea-to-Launch Process and innovation leadership and culture.

For more information, visit www.stage-gate.com or email: scott.edgett@stage-gate.com.

About MakeTime

MakeTime is a tech company streamlining the production of CNC machined parts. Powered by data and the nation's largest network of qualified and connected suppliers, MakeTime radically compresses the manufacturing timeline, while simplifying and demystifying its processes. The result is a reliable path to prototyping, production and aftermarket CNC machining that is fast, intuitive and cost-competitive.

For more information, go to: www.maketime.io.

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