

Chapter 1: The Quest for Breakthrough Ideas

History is in essence a history of ideas.

H.G. Wells, *The Outline of History*

Product innovations are the life blood of the modern corporation. Look at any major company doing well today – Apple, Procter & Gamble, Toyota, GE – and invariably you’ll see a steady stream of successful new product launches. But product innovation is in trouble – R&D productivity is down: There is less bang for buck today; blockbuster or game-changing product innovations are absent in most firms’ development portfolios; and increasingly there is pressure from the financial community to improve innovation results.

Fixing the shortage of blockbuster and game-changing product innovations is what this book is about. Many companies already have a solid idea-to-launch process or Stage-Gate[®]* system in place (see Exhibit 1.1).¹ That’s an important part of the puzzle, because without an effective new product process, good new product concepts never reach the marketplace. But a solid idea-to-launch process is not enough: What many senior executives are realizing is that there is a *real shortage of strong, high-value ideas* and development projects entering and progressing through their development pipelines. In short, the process is robust enough, but the cupboard is bare – the *pipeline feed is dry*.

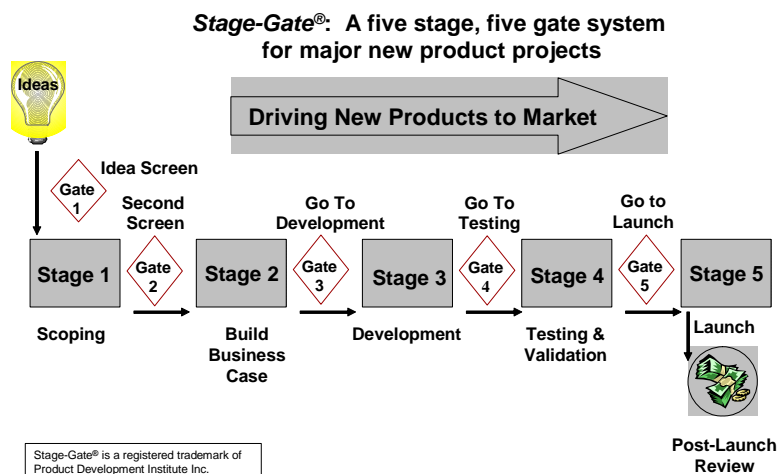


Exhibit 1.1 A typical Stage-Gate product innovation system is used by virtually every best performing company to drive their new product ideas through to successful market launches.

* Stage-Gate[®] is a registered trademark of the Product Development Institute Inc., see www.prod-dev.com.

Product Innovation is the Key Management Imperative

Companies around the world have emerged from a period of retrenchment, cost-cutting and operational excellence, and are now focused on a vision of *sustained organic growth*. Senior executives and Wall Street have finally figured out that no company ever shrank its way to greatness. Rather, product and service innovation must be the engine for growth. As the Chairman and CEO of P&G put it so boldly:

“Innovation is a prerequisite for sustained growth. No other path to profitable growth can be sustained over time. Without continual innovation, markets stagnate, products become commodities and margins shrink.”²

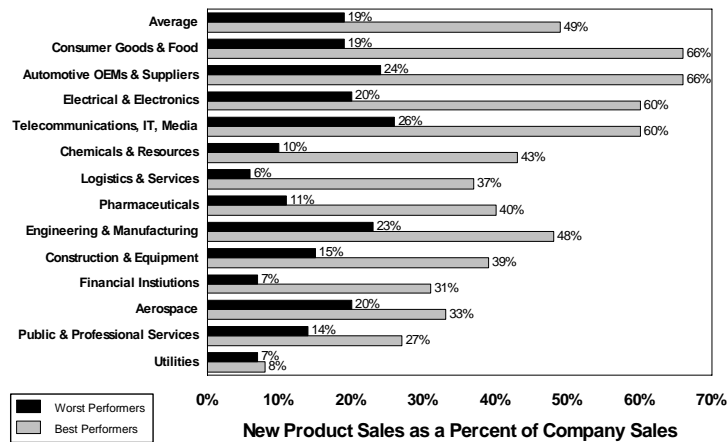
Innovation has become the hot button for chief executives everywhere, according to *Business Week*.³ CEOs and business leaders around the world see increased competitiveness; they see challenges to their business models as they go forward; and they see many products and services being commoditized. They also see that all these roads and converging trends lead to innovation.

For many corporate executives, product innovation has become *the only game in town*; and if not the only game then it's certainly the most important one. The message is simple: Either you succeed at product innovation or you will fail as a business! That is, *innovate or die*! The ill-fated dot.com boom and bust was only the precursor to the rapid rise of innovation's role. Look around and witness those companies doing well today – Procter & Gamble whose new launches are setting sales and profit records in its industry; Apple with its iPod, which has created a whole new industry overnight; RIM (Research In Motion) whose BlackBerry is the coveted communications device in business today; Toyota with its hybrid Prius, which has raised the bar in engine technology; and Motorola whose ultra-thin Moto RAZR cell phone is in huge demand. And an analysis of data from Fortune's annual survey of the most admired companies in America reveals that “value as a long term investment” is closely linked to the “innovativeness of a company”.

Product innovation is vital to the growth and prosperity of the modern corporation. New products now account for a major portion of companies' sales revenues annually in the U.S., at almost 30 percent of the top line of the profit and loss statement.⁴ Even more astonishing is that the best performing companies see a remarkable 47.6 percent of annual sales coming from new products, and an astounding 49.1 percent of annual profits derived from new products. That's almost half of these companies' profits and sales coming from new products! Similar results are shown in a major global study of innovation, which reveals the impact that new products have on company sales broken down by industry (Exhibit 1.2).⁵ Check your industry and compare how your company fares. Again the top performers achieve almost half their sales from new products, but, in some industries, new products account for two-thirds of current sales!

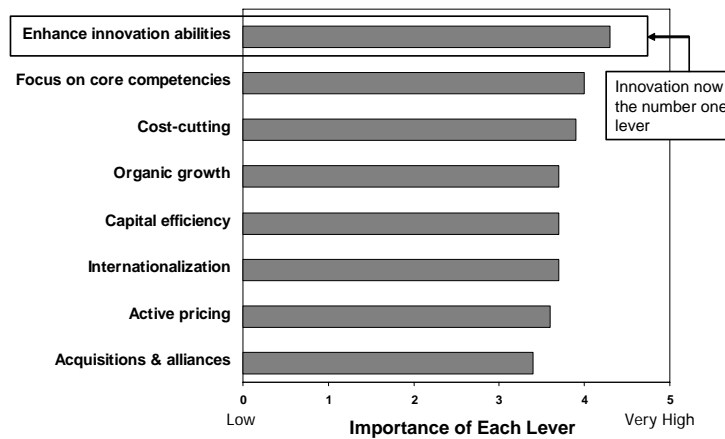
The reasons for the current heavy emphasis on product innovation are evident. Globalization, the growth of outsourcing and off-shoring of not only manufacturing but R&D, rapidly changing markets and competitive environments, commoditization of existing products and the search for competitive advantage, and the quickening pace of technological change are but some of the drivers of innovation. Thus, expect to see product and service innovation play an even greater role in deciding corporate fortunes in the years ahead.

The key role of innovation has not gone unnoticed by the financial community, with Wall Street placing increased pressure on CEOs to deliver. Indeed, a Cheskin and Fitch survey revealed that almost half of CEOs view product innovation as *very critical to their business's future success*,⁶ while a global Arthur D. Little survey showed that *enhancing innovation capabilities* is viewed by CEOs as the *number one lever* to increase corporate profitability and growth – see Exhibit 1.3.⁷ Note that innovation is rated well ahead of cost-cutting in Exhibit 1.3, a traditional lever used by senior executives to increase profits. The message from the financial community is that *organic growth* based on product innovation is paramount.



New products on the market 5 years or less.
Source: A.D. Little Innovation Excellence Study 2005, endnote 5.

Exhibit 1.2 New products represent a huge percentage of company sales; this percent also varies greatly by industry. Note how much better the best performers are – 2.5 times higher new product sales on average.



Source: A.D. Little Innovation Excellence Study 2005, endnote 5.

Exhibit 1.3 Of 8 key levers to increase corporate profitability and growth, CEOs identified innovation as the most important, and ahead of cost-cutting.

But It's Not So Easy

If generating a steady stream of innovative and profitable product innovations was as easy as some of the pundits make it out to be, then half the companies in America and Europe would be incredibly wealthy, and the others would be doing quite well. And there would be no need for searching for new best practices, nor for this book.

The fact is that product innovation performance is in trouble, in spite of all the hype from CEOs, the pundits and Wall Street. Corporations and nations continue to spend heavily on R&D, and yet productivity is down. For example, the largest spenders on R&D – The 2005 Global Innovation 1,000 – spent \$407 billion on R&D in 2005, representing a 6.0% increase from 2004 and a 4.2% annual growth since 2000.⁸ And the pace is accelerating! Nationally, U.S. companies spend about 4.9 percent of sales on R&D, a percentage that has not changed much over the last few decades.⁹

What has changed, however, is the output, namely sales revenues from new products. Since 1990, new product revenues have dropped by 14 percent as a percentage of sales – from 32.6 percent of sales in 1990 to 28.0 percent in 2004.¹⁰ That is a huge drop-off in output-to-input or R&D productivity in little over a decade. And it's clear that something has gone very wrong with many firms' development pipelines.

Why is Productivity Down?

We looked at the many possible causes of this decrease in R&D or new product development (NPD) productivity.¹¹ There's no evidence that people are doing a worse job today: bad launches, deficient design and development work, or poor market studies. Indeed, a comparison of the quality of execution of key activities between 1985 and today – from initial screening through to market launch – reveals no change in quality-of-execution ratings.¹²

The one factor, however, that does show a dramatic change, and that explains the decrease in profitability and impact, is the balance in the portfolio of projects undertaken today versus in 1990. Simply stated, today's businesses are preoccupied with minor modifications, product tweaks and minor responses to salespeople's requests, while true product development has taken a back seat.

Currently companies lack the bold breakthroughs and game-changers necessary to drive their sales and profits to new heights. Too many corporations *are picking the low hanging fruit* when it comes to product development! Look at the facts, shown in Exhibit 1.4. Businesses undertook almost twice as many “new to world” or true innovation products in 1990 as they do today as a percentage of their development portfolios, according to a major benchmarking study we undertook.¹³ Now things are reversed. Today, businesses undertake almost twice as many minor projects – improvements, modifications and tweaks – as they did in 1990.

These trends are also evident in a study conducted by the Product Development Management Association (PDMA), which revealed that “the number of projects motivated by cost reduction, repositioning and incremental improvements has grown, while the percentage of major revisions,

Percentage Breakdown of Projects in the Development Portfolio

Development Project Type	1990 ²	2004 ¹	% Change from 1990
New to world – true innovations	20.4%	11.5%	43.6% decrease
New product lines to the company	38.8	27.1	30.1% decrease
Additions to existing product line in company	20.4	24.7	21.0% increase
Improvements & modifications to existing company products	20.4	36.7	79.9% increase
Total	100.0%	100.0%	

Sources: 1. Cooper-Edgett-Kleinschmidt benchmarking study, endnotes 12 & 13; and 2. Kleinschmidt & Cooper, endnote 13.

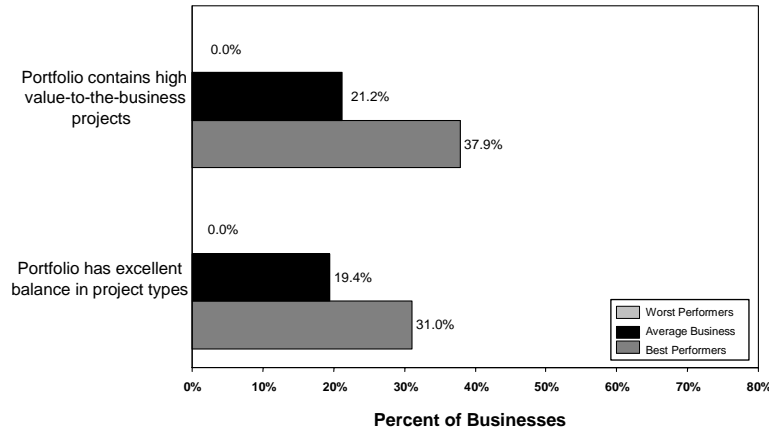
Exhibit 1.4 In the last 15 years, there has been a major shift in types of development projects undertaken to much less innovative and less venturesome projects.

product-line additions, new to the firm and new-to-the-world projects has dropped”.¹⁴ For example, new-to-world and new-to-firm projects have decreased from 30 percent of the portfolio in 1995 to 25 percent in nine short years – a 17 percent decrease. This may explain why cycle times have decreased so dramatically, from 41.7 months to 24 months: Businesses simply are not undertaking the challenging, step-out and significant product innovations they once did; instead, they are focusing on incremental improvements which inherently take less time. This is an alarming trend in the composition of the portfolio – from venturesome projects to lower risk projects.

Astute executives in some businesses recognize the dangers. Our benchmarking study reveals that executives are indeed concerned about their portfolio of development projects, as shown in Exhibit 1.5.¹⁵ The management in only 21.2 percent of businesses indicate that their development portfolios contain *enough high value-to-the-corporation projects*; but twice as many or 40.5 percent of businesses do not. And only 19.4 percent of business managements claim that their portfolio has the *right balance* between short term and long term projects; 38.0 percent do not.

Top Performers Model the Way

What are the secrets to more successful and profitable innovation? To answer the questions, we identified best performing businesses in our benchmarking study – those top 20% of businesses that outperformed the rest in NPD on a variety of financial and time metrics. When one lowers the microscope on these best performers, a different portfolio picture emerges. For example, in Exhibit 1.5, best performing companies have higher value projects in their development pipelines, and a much better balance and mix of projects. The portfolio breakdown in Exhibit 1.6 reveals why:



Source: Cooper-Edgett-Kleinschmidt benchmarking study, endnotes 12 & 13.

Exhibit 1.5 Development portfolios in most firms are substandard. But note how much better the best performers are, especially versus the worst performing businesses.

- Best performers today have twice as many true innovations in their development pipelines (17.1 percent of their portfolios) than do worse performers (8.5 percent).
- But note how much things have changed: The average business in the mid 90s had an even higher proportion of innovations (20.4 percent) than today’s best performers.
- Almost half the projects in worst performers’ portfolios are small projects – tweaks, modifications and extensions (46.5 percent of the total portfolio), much more than is the case for best performers.

One cannot prove that a certain portfolio mix of projects yields better performance, but the analysis is convincing. First, best performers have decidedly more innovative development portfolios – a higher proportion of true innovation projects and a lower proportion of minor projects. Second, years ago, the average company had an even better portfolio than today’s best performers.

Percentage of Projects in the Development Portfolio

Development Project Type	Best Performers 2004	Worst Performers 2004	Average Business 1990
New to world – true innovations	17.1%	8.5%	20.4%
New product lines to the company	31.1	23.0	38.7
Additions to existing product line in company	25.8	22.0	20.5
Improvements & modifications to existing company products	26.0	46.5	20.4
Total	100.0%	100.0%	100.0%

Sources: Cooper-Edgett-Kleinschmidt benchmarking, endnotes 12 & 13; also: Kleinschmidt & Cooper, endnote 13.

Exhibit 1.6 The development portfolios of top performers are far more innovative than portfolios of poor performers... and similar to the portfolios of the “average company” 15 years ago.

Why the Shortage of Innovative Projects: Understanding the Root Causes

Before we leap forward to solutions, let's reflect on what's causing this portfolio shift.¹⁶ In discussions with managers as part of several recent studies, we identify five main roadblocks to an innovative development portfolio.

Roadblock #1 – speed demons and racing to market

The last decade or so has witnessed a preoccupation with reducing cycle time and on speeding new products to market. While cycle time reduction is an admirable goal, often the results of trying to reduce time-to-market have unexpected and negative consequences. For example, cutting corners on projects, dumbing-down projects, and poor team morale have all been blamed on excessive emphasis on cycle time reduction.¹⁷

One very negative result of this heavy emphasis on speed is that decision-makers tend to gravitate towards the smaller, low hanging fruit projects. The easiest way to reduce cycle time, but with negative consequences, is simply to select projects that are *fast and easy to do*. The result is not only a drop in cycle time, but also a deterioration of the quality of the portfolio of development projects.

Roadblock #2 – reacting to customers' and salespeople's urgent requests

A parallel cause is the urgent response to a customer's or a salesperson's request for a new product. Often the product is not new at all, but merely a repackaged, slightly modified or tweaked product. Individually, these projects do not consume many resources; but collectively they can divert a large proportion of resources away from genuine product development.

These urgent sales requests must be handled: They are vital to keeping your sales force and your customers happy; they also keep your product line fresh and up-to-date. But if these projects begin to dominate your portfolio, then in the long run, your business is in trouble. Such urgent projects will devour the resources needed to develop genuine product innovations, blockbusters and new platforms for growth. As one executive noted:

“Many of the smaller projects have to be done – they're needed to respond to a customer request. The trouble is... they consume almost all our development resources.”

Roadblock #3 – a resource crunch

The battle cry, “make the numbers” and “make the quarter”, has led to serious resource deficiencies for many businesses' new product efforts. The financial goal has become “doing more with less”; and so executives fail to commit the necessary resources to product innovation, cutting vital technical and marketing staff.¹⁸ Moreover, look at the hard research evidence in Exhibit 1.7:¹⁹

- Businesses are putting more projects through their development pipelines with no real increase in resources. The great majority have a poor balance between resources available and the number of projects underway; only 10.7 percent allocate enough resources to NPD projects to ensure that they are undertaken in a quality fashion.
- With too many projects underway, people are spread too thin (only 11.4 percent of businesses do not spread their people and resources across too many development projects).
- There is no focused effort: Project team members are spread over too many other activities and not focused enough on their product development projects. Only 21.9 percent of businesses achieve adequate resource focus.
- NPD projects suffer from a lack of resources from all functional areas. Only 31.4 percent of businesses have enough technical resources on projects. Marketing and Sales resources are even more deficient: In only 15.2 percent and 25.3 percent of businesses respectively are there enough Marketing and Sales resources available to projects.

This *resource crunch* has a direct impact on the nature of the portfolio that a business elects. Why? When resources are tight, managers take few chances – they choose the “sure bets”, which are typically the smaller, closer-to-home projects. Here’s a typical comment:

“My business has a limited R&D budget. I can’t afford to risk a major percentage of that budget on a handful of big projects. I’ve got to hedge my bets here, and pick the smaller and lower risk ones. If I had a larger R&D budget, then I might tackle some more venturesome projects...”

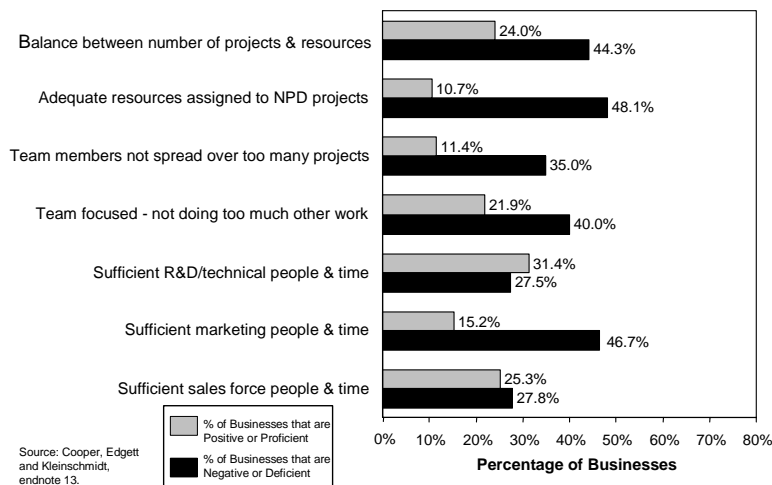


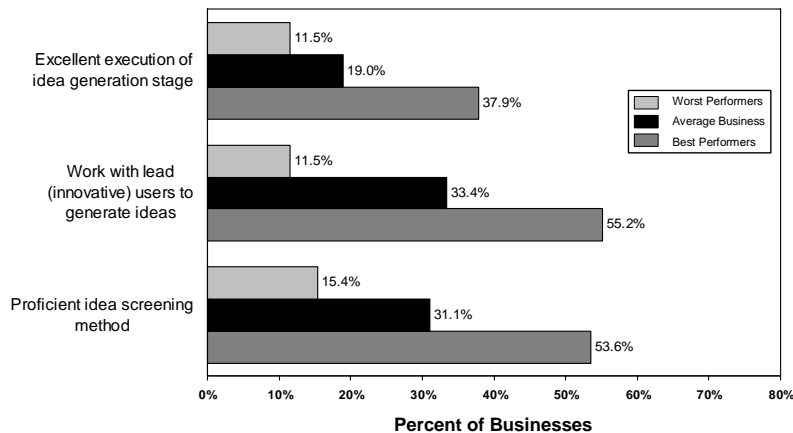
Exhibit 1.7 There is a resource crunch across the board in NPD – too many projects; and team members are spread too thinly and are unfocused, regardless of the functional department.

Roadblock #4 – a lack of blockbuster, game-changing ideas

Perhaps the *most important and most challenging deficiency* is simply a dearth of innovative, creative and game-changing ideas. The pipeline is dry in too many companies. In our benchmarking study, for example, only 19 percent of businesses were judged to have a proficient ideation front-end to feed their development funnel, as shown in Exhibit 1.8. In the same exhibit, note that only one-third of companies work with lead or innovative customers to create their next breakthroughs.

Corporations cannot achieve their aggressive innovation goals if they continue to focus on small, incremental development products and projects. The quest for competitive advantage and achieving significant increases in sales and profits through product development means that the portfolio of projects must change. For that to happen will require new, bold and innovative product ideas – some real game-changers and blockbuster ideas.

Note that best performers, to a certain extent, model the way here again. In Exhibit 1.8, twice as many best performers boast a well-oiled ideation phase and execute ideation proficiently when compared to the average firms. But even among best performers, there is much room for improvement. Similarly, 55 percent of best performers seek out innovative users and work with them to create innovative new product concepts. These are some hints that more effective ideation is indeed one of the solutions to what ails many companies' new product efforts.



Source: Cooper-Edgett-Kleinschmidt benchmarking study, endnote 12.

Exhibit 1.8 Idea generation needs major improvements in most firms. Best performing businesses undertake much better and more proactive ideation.

Roadblock #5 – the wrong project selection criteria

Less than one third of businesses were judged to utilize a first-rate idea screening, evaluation and selection methodology – see Exhibit 1.8. As any venture capitalist will attest, the ability to make the right investment decisions – to evaluate and select would-be projects early and when little information is known – is key to success. Yet most corporations use the wrong methods for

screening innovative ideas, or no methods at all. By contrast, and by almost a two-to-one ratio, best performers use effective methods to screen and select new product ideas.

The most popular project selection and prioritization methods by far are financial tools: payback period, NPV and the productivity index. Financial techniques work very well for well-defined projects, such as modifications and extensions, where financial outcomes are predictable. But for step-out projects or early in the life of a project, applying such tools is likely to do more damage than good. Indeed, an Industrial Research Institute study revealed that for new product projects, those businesses that rigorously applied financial models as the main selection tool *ended up with the worst portfolios!*²⁰ An over-emphasis on financial criteria for project selection will drive the portfolio to smaller, lower risk projects, simply because their returns at first glance appear better, they are lower cost to do, and these projects are much more predictable.

Remove the Roadblocks and Fix the Problems

If a steady stream of game-changing and innovative new product ideas and projects is the goal, then review the typical roadblocks above and find out what's standing in the way of innovation in your company. Then fix the blockages, namely:

- Back off the relentless pursuit of speed – remember, the goal is profitable product innovations, not fast execution of a bunch of projects that are low-value initiatives and low hanging fruit. As one executive at P&G noted: “Speed is dead at P&G... a decade of pursuing speed has caused us to do many stupid things!”
- Avoid a reactive mode to every sales force request and put a cap on the number of reactive projects you do.
- Put the necessary resources in place to enable innovation, and even create a ring-fenced and dedicated innovation team that does nothing but innovative projects.
- Create robust and high-value new product ideas to feed the funnel.
- Rethink how you evaluate, rate and rank projects – your project selection methods.

The Need for a Proactive Idea Generation and Management System

A shortage of robust ideas plagues too many firms' product innovation efforts, but it takes roughly 100 ideas to yield one successful new product. So you must shovel a lot of earth to find a few diamonds! This is a huge attrition or fall-off rate, as shown in Exhibit 1.9. Given the importance of ideas as feed to the pipeline, together with this large attrition rate, what is needed is a *formal, systematic and professional idea generation and management approach* – one that generates and screens lots of ideas and good quality ones. Indeed, according to the Arthur D. Little study, of five best practices identified, idea management has the strongest impact on the increase in sales by new products (see Exhibit 1.10) – that is, having effective idea management results in an extra 7.2% of sales from new products.²¹

For every 100 ideas... one successful new product

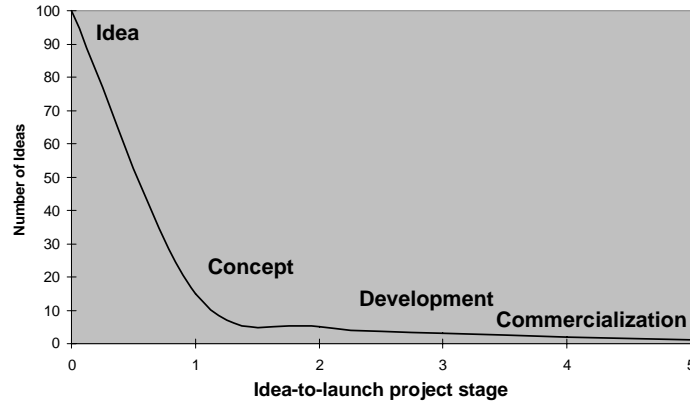
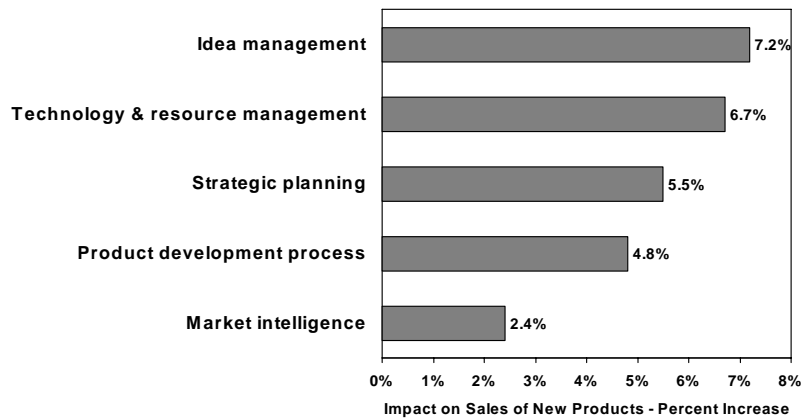


Exhibit 1.9 Many new ideas are required to create one major new product – there is a huge attrition rate.



Source: Adapted from A.D. Little Innovation Excellence Study, 2005, endnote 5.

Exhibit 1.10 Of the five most important drivers of NPD performance, idea management has the highest positive impact on sales revenue.

Elements of an Effective Idea Management System

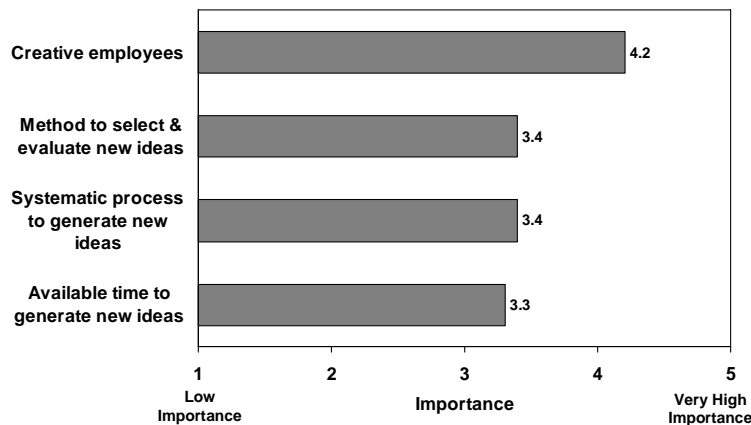
What are the most important elements of an effective idea management effort? First is creative employees that are actively involved in the ideation process (refer to Exhibit 1.11).²² Some firms, such as Swarovski and Saint-Gobain, have developed comprehensive systems for engaging their employees in the ideation process and produce huge numbers of solid ideas this way.

Other key elements of about equal importance from the study in Exhibit 1.11 include:

A systematic process to generate new ideas. Good ideas are not just serendipitous or the result of chance. Yes, serendipitous and chance ideas can be fruitful ones. But ideas can also be made to happen. Increasingly companies are building systematic methods for generating ideas into their early stages of their idea-to-launch process. Much of the book is devoted to proactive methods for making new product ideas happen – the Discovery stage of your product innovation process.

Available time to generate new ideas. When employees, even creative employees, are so busy that they can barely cope with the day-to-day work, don't expect them to be overly innovative and creative. One needs time to be creative and thoughtful, and not just at 4:30 on a Friday afternoon after a busy week.

A method to select and evaluate new ideas. Many companies lack an effective method to evaluate or rate and rank ideas. The traditional evaluation techniques don't work – for example financial tools – simply because ideas are too embryonic to be subjected to a rigorous financial analysis; and it's almost impossible to undertake a reliable financial analysis on the most innovative of projects with so many unknowns. With a poor idea evaluation scheme in place, many excellent ideas will be killed, while ideas that are less innovative and with less potential will survive, simply because they are smaller, less innovative and less risky. Later in this book, we look at more effective ways to screen innovative ideas.



Source: Adapted from Arthur D. Little Innovation Excellence Study, 2005, endnote 5.

Exhibit 1.11 The most important factors in idea management are creative employees, a method to effectively select the best ideas, and a systematic process to generate ideas.

Where to Begin?

Perhaps the first place to begin crafting an effective idea management system is by identifying potential sources of ideas: Where do the good ideas come from? Perhaps more important is the question: Where should they be coming from, and which valuable sources are you missing? Prolific or favorite idea sources may be evident in your company, but there is no conclusive evidence that ideas from any one source are the best. So think more broadly than the handful of traditional sources. Indeed many studies show that good ideas come from a broad range of sources, as shown in Exhibit 1.12. For example, external sources are almost as vital to ideation as are internal sources such as R&D and Marketing. As a result, for example, P&G has shifted its emphasis from internally-generated ideas and products to external, with the goal of at least 50 percent of new products coming from outside the company. Thus the notion of a “best source” and focusing only on it may be much too narrow.

When one expands the definition of innovation ideas to include new business models as well as new products and services, the mix and importance of sources shifts somewhat. Exhibit 1.13 shows the results from the latest IBM CEO global survey.²³ Here employees and external partners are the major sources, with traditional ideation sources, such as internal Sales and R&D units buried in the middle of the pack.

The point is that to drive innovation, your idea system must tap into a broad array of potential sources both inside and outside the company – employees, executives, customers, collaborators and partners, and even private inventors. No longer can you rely on a few people or a few departments to be the only source of innovation ideas. Ideation is now a business function or activity requiring the involvement of everyone in the business and even those external to, but affiliated with, your business.

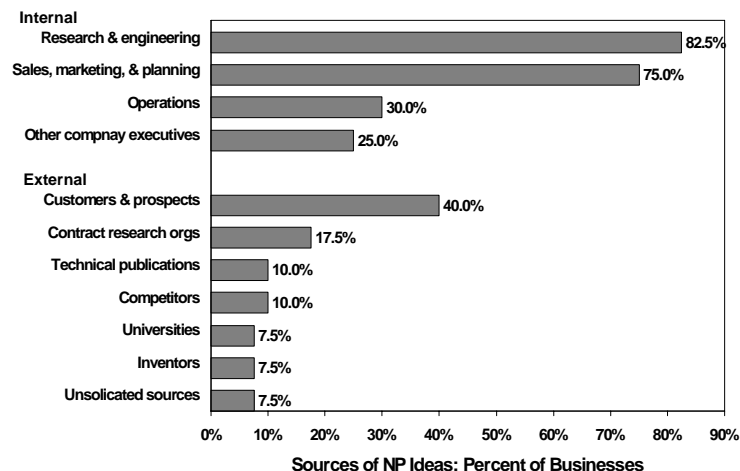
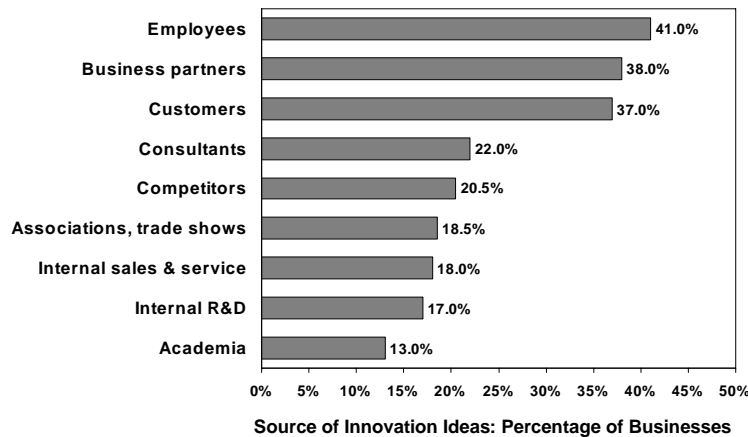


Exhibit 1.12 Traditional new product idea sources vary widely – these are the primary sources of new product ideas.



Source: IBM, *Expanding the Innovation Horizon: The Global CEO Study, 2006*, endnote 23.

Exhibit 1.13 Sources of all innovation ideas (includes new business models as well as new products and services) show new patterns with more emphasis on partners and employees, less on R&D and sales units.

Create a Focal Point or I-Group

Next, establish an *idea person, focal point or idea group*. One problem with ideation is that it's viewed as everyone's job yet nobody's responsibility. And so the task of capturing and screening ideas often falls between the cracks. Without an idea capture and handling system, good ideas are often lost; and other ideas just sit in people's heads or on their computers. Without action, like grapes on a vine, these ideas wither and die.

Some companies call this idea person or focal group an "I-Group". Its role is to manage the idea capture and handling system. This I-Group...

- stimulates the creation of new ideas and opportunities
- captures ideas from inside and outside the company
- enhances and fleshes out ideas to the point where they can be evaluated
- secures a Go/Kill decision on the ideas
- and if Go, moves the ideas along – into the first steps of the product innovation process.

Install a Formal Front End on Your Development Process

Here's how this front end of the innovation process, namely the idea capture and handling system, should work (see Exhibit 1.14). Compare this best practice process to what happens in your company.

Ideas from multiple sources are recorded on a standard idea submission form or template, either electronic or physical. These ideas are sent to the I-Group for a decision and action. Here, ideas are pre-screened, enhanced, massaged, incubated, combined and "visualized". The I-Group then

present the fleshed-out ideas to a management committee, the Gate 1 screening group, for a Go/Kill decision. Of course, feedback is provided to the idea submitter or source.

Ideas that are killed or deemed too early are stored in the idea vault (also shown in Exhibit 1.14). This idea vault should be an electronic one, and perhaps even an open system, where other employees are invited to review and improve ideas in the vault.

If the idea is given a Go decision at Gate 1, then the Gate 1 gatekeepers agree to a “go-forward” action plan, and commit the resources needed to move the idea through the next stage, namely Stage 1 or Scoping. And thus the idea transitions from a gleam in someone’s eye into an early-stage development project – there is momentum and the project has begun its journey through the product innovation process.

Establish the Communication Lines and Shake the Branches

A final step to creating an idea management system is to establish the flow lines, mechanisms, processes and events to encourage, and even to help create, ideas which then flow to the I-Group. As one executive described it:

“Previously our Idea Team [a task force charged with gathering ideas and vetting them] viewed their role simply as this: They spread a net under the apple tree, and waited for the apples – the ideas – to fall. Once a month, they picked up the net with all the apples, and had an idea screening meeting where the apples were sorted – good apple, bad apple, and so on. The good ideas were moved forward into the first stage of our new product process.

Now the role of the Idea Team is quite different. Yes, they still put a net under the tree. But now, they climb into that tree, and *vigorously shake the branches*. And the apples fall in great numbers. It’s a very proactive and aggressive effort, and the Idea Team really ‘causes ideas to happen’.”

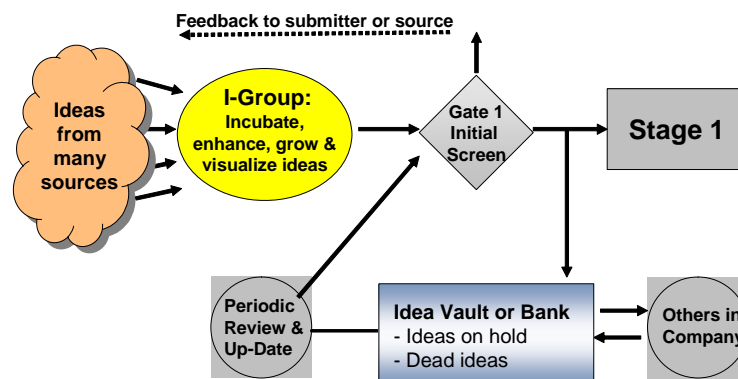


Exhibit 1.14 Install a systematic idea capture and handling process, complete with a focal point or I-Group, a Gate 1 screen to yield a Go/Kill decision, and an open-system Idea Vault.

The processes and methods to access the sources and “shake the apple tree” are described in the chapters to follow – methods designed to access the sources and generate ideas both internal and external to the firm. Note that all ideas, regardless of the source, are fed into the I-Group for handling and initial vetting. This group becomes the on-ramp or entrance road to the innovation process.

Make Your Company an Innovation Machine

The challenge is this: How do you generate, conceptualize and select winning new product ideas and opportunities, including some big ideas and game-changers? In this book, we outline methods and approaches to do so that are proven in top-performing companies. We begin with ways to help define your product innovation strategy in the next chapter. After all, from strategy, all else flows: Your innovation strategy defines the *hunting grounds* for new opportunities – what’s in bounds and perhaps more important, what’s out of bounds. The search fields are defined!

We continue with this strategic theme in Chapter 3, and look at various strategic approaches to anticipating the future and thereby identifying great innovation opportunities. These methods include developing peripheral vision, using scenario generation, and identifying and exploiting disruptive technologies.

The customer is a source of superb opportunities and ideas in many companies. Voice of Customer (VoC) methods have been developed and refined to the point where numerous best performing companies use them regularly to create innovative ideas. These are highlighted in Chapter 4, where we explore both newer methods such as crowdsourcing and lead user analysis and more traditional VoC ideation approaches such as ethnography.

Your external environment should be a limitless source of new product ideas, but are you seeing them? Seeking ideas from other sources outside the company is the topic of Chapter 5. Open innovation is heralded as the new wave in innovation, enabling your company to tap into creative minds around the world. We use P&G’s “connect + develop” initiative as a model. Other externally-oriented methods are also explored, including patent mapping, competitive triggers, working with suppliers and leveraging creativity at universities.

Your own employees are potentially excellent sources of ideas. Toyota’s employees submit an estimated 80,000 ideas annually! How many new product ideas do you get from your employees? Chapter 6 explores how to harness the creative ability of your entire organization through creativity events and active idea solicitation schemes.

Many companies engage in fundamental research and science projects. The rationale is that such fundamental projects should create the foundation for new opportunities and new ideas that could change the basis of competition. But often fundamental research results in little of value. Find out in Chapter 7 how leading firms harness the creative and scientific abilities of their scientific community to provide the feed to the product innovation process.

Finally in Chapter 8, we focus on picking the winners – how to screen and evaluate these ideas and early-stage opportunities. The challenge is difficult because innovative ideas are often fraught with uncertainty and unknowns, rendering traditional investment-and-evaluation techniques all but useless. Moreover these are early-stage opportunities when little information is available. But still a decision must be made. How effective you are at this may well decide the success of your business's total innovation effort.

So read on and find out how your business can increase the quality and value of ideas and opportunities for product innovation – how you can generate a steady stream of game-changing, robust and high-value new product ideas.

Chapter 1 - Endnotes & References

- ¹ Stage-Gate® is a registered trademark of the Product Development Institute Inc. See www.prod-dev.com.
- ² Cooper, R.G. & Mills, M., “Succeeding at new products the P&G way: A key element is using the “Innovation Diamond”, *PDMA Visions*, XXIX: 4, October 2005, pp. 9-13.
- ³ Hamm, S., “The View from the top”, *Business Week*, April 3, 2006, pp. 52-54.
- ⁴ New products here are defined to include true innovations as well as new items in the product line and significant product revisions and improvements, all launched within the last three years. Source of data: PDMA 2004 study. See: Adams, M. & Boike, D., “PDMA foundation CPAS study reveals new trends”, *Visions*, XXVIII: 3, July 2004, pp. 26-29; and: *The PDMA Foundation's 2004 Comparative Performance Assessment Study*.
- ⁵ *How Companies Use Innovation to Improve Profitability and Growth*. Arthur D. Little, Innovation Excellence study, 2005.
- ⁶ *Fast, Focused, Fertile: The Innovation Evolution*, Cheskin and Fitch: Worldwide, 2003.
- ⁷ Arthur D. Little study, see endnote 5.
- ⁸ “Smart Spenders: The Global Innovation”, Booz Allen & Hamilton, November, 2006.
- ⁹ Source of R&D to sales spending data: endnote 8.
- ¹⁰ For 2004 data, see endnote 4. For 1990s data, see: Griffin, A., *Drivers of NPD Success: The 1997 PDMA Report*. PDMA 1997.
- ¹¹ Cooper, R.G., “Your NPD portfolio may be harmful to your business’s health”, *Visions*, XXIX: 2, April 2005, pp. 22-26.
- ¹² For 1985 quality-of-execution data, see: Cooper, R.G. & Kleinschmidt, E.J., “An investigation into the new product process: steps, deficiencies and impact”, *Journal of Product Innovation Management*, 3:2, 1986, pp. 71-85. For current quality of execution data, see our major benchmarking investigation undertaken by the authors with the APQC (American Productivity & Quality Center): Cooper, R.G., Edgett, S.J. & Kleinschmidt, E.J., *Best Practices in Product Development: What Distinguishes Top Performers*, at www.stage-gate.com and *Improving New Product Development Performance and Practices* by APQC, Houston. Also: Cooper, R.G., Edgett, S.J. & Kleinschmidt E.J., “Benchmarking best NPD practices-3: The NPD process & key idea-to-launch activities”, *Research-Technology Management*, 47:6, January-February 2005, pp. 43-55.
- ¹³ For current portfolio breakdown data, see our benchmarking APQC study in endnote 12; also: Cooper, R.G., Edgett, S.J. & Kleinschmidt E.J., “Benchmarking best NPD practices-2: Strategy, resources and portfolio management practices”, *Research-Technology Management*, 47:3, May-June 2004, pp. 50-60. Source of 1990 breakdown: Kleinschmidt, E.J. & Cooper, R.G., “The impact of product innovativeness on performance,” *Journal of Product Innovation Management*, 8, 1991, pp. 240-251.
- ¹⁴ PDMA study. See endnote 4.
- ¹⁵ Our benchmarking-APQC study, see endnotes 12 & 13.
- ¹⁶ This section on root causes is taken from *Visions* article, endnote 11.
- ¹⁷ Cooper, R.G. & Edgett, S.J., “The dark side of time and time metrics in product innovation”, *Visions*, XXVI:22, April-May 2002, pp. 14-16. The negative impacts of cycle time were first articulated in: Crawford, C.M., “The hidden costs of accelerated product development,” *Journal of Product Innovation Management*, 9:3, September 1992, pp. 188-199.
- ¹⁸ This point is made by: Katz, G., “Not so fast,” *Visions*, XXVIII:4, October 2004, p. 8. See also: Cooper, R.G. & Edgett, S.J., “Overcoming the crunch in resources for product innovation,” *Research-Technology Management*, 46:3, May-June 2003, pp. 48-58; also endnote 17.
- ¹⁹ See our benchmarking-APQC study; endnotes 12 & 13.
- ²⁰ IRI portfolio study: Cooper, R.G., Edgett, S.J. & Kleinschmidt, E.J., “New product portfolio management: practices and performance”, *Journal of Product Innovation Management*, 16:4, July 1999, pp. 333-351; and: Cooper, R.G., Edgett, S.J. & Kleinschmidt, E.J., “Portfolio management for new product development: results of an industry practices study”, *R&D Management*, 31:4, October 2001, pp. 361-380.
- ²¹ Arthur D. Little study, see endnote 5.
- ²² Arthur D. Little study, see endnote 5.
- ²³ IBM, *Expanding the Innovation Horizon: The Global CEO Study*, 2006.