

Attention: Results are Down!

Your NPD portfolio may be harmful to your business's health



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Recent NPD studies contain a number of surprises: Most shocking is that the impact of new product development (NPD) on the sales and profits of many corporations is down, when looked at in terms of contribution to total sales and profits. How has happened, and why? Robert Cooper takes a hard look at the facts and examines a number of possible reasons for this trend. He also provides recommendations on how companies can rebalance their NPD portfolios to become more profitable.



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Product development impact and profitability are down! New product sales fell from 32.6 percent of total company sales in the mid-1990s to 28 percent in 2004, according to a major PDMA Foundation study released in 2004.¹ The same study shows that profits derived from new products are down from 33.2 percent of business profits to 28.3 percent over the same period.

ies, bad launches, or deficient design and development work. 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 ratings.² And Research and Development (R&D) spending in the

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Why are results are down?

These significant decreases in just a handful of years are cause for concern. What's going on? New products remain a major component in corporate revenue and profits. But something is happening to make them a smaller portion of that revenue and profit.

There's no evidence that people are doing a worse job today: poor market stud-

ies, bad launches, or deficient design and development work. 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 ratings.² And Research and Development (R&D) spending in the U.S. remains unchanged: for example, 2.76 percent of GNP in 1985 versus 2.82 percent in 2001.

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 businesses are preoccupied with minor modifications, product tweaks, and minor responses to salespeople's requests, while *true product development has taken a back*

seat. Look at the facts as shown in Exhibit 1 on this page.

True innovation is down

Companies 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 an APQC benchmarking study in 2004. 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 the PDMA Foundation 2004 Study, which revealed that "the number of projects motivated by cost reduction, repositioning and incremental improvements has grown, while the percentage of major revisions, product-line additions, new to the firm and new-to-the-world projects has dropped."¹ 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 months¹. Businesses are not

Exhibit 1: Breakdown of the Portfolio by Project Types—Then and Now

% of Projects in the Development Portfolio			
Development Project Type	1990	2004	% Change from 1990
New to world – true innovations	20.4%	11.5%	43.7% 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	20.8% increase
Improvements & modifications to existing company products	20.4	36.7	80.1% increase
Total	100.0%	100.0%	

SOURCES: APQC 2004 study² and JPIM article¹.

undertaking the challenging, step-out and significant innovations and new products they once did. They are focusing on incremental improvements which inherently take less time.

Portfolio composition

These alarming trends—from venture-some projects to lower risk projects—are clear in the PDMA Foundations study.

Astute executives in some businesses recognize the dangers. The APQC study reveals that executives are concerned about their portfolio of development projects, as shown in Exhibit 2 on this page. Managements 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.²

“The best” versus “the worst”

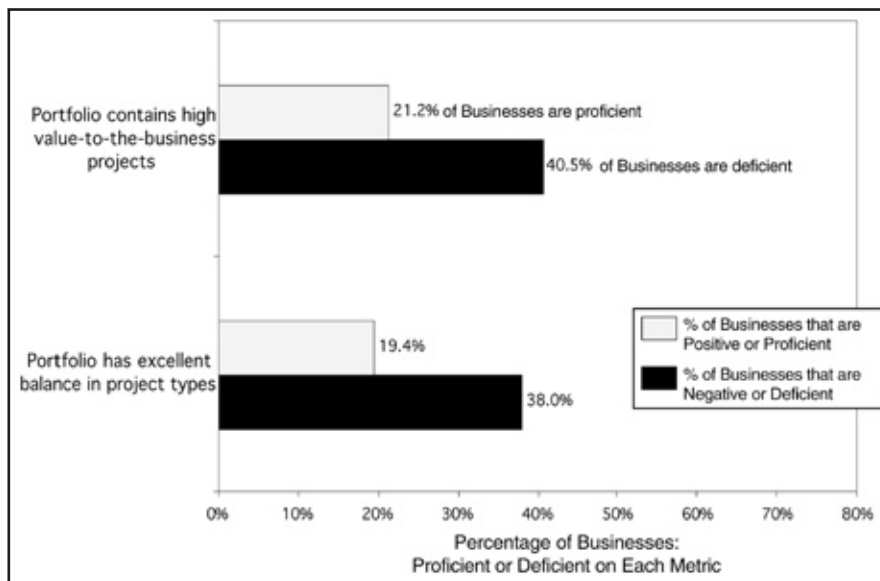
What is particularly disturbing is the fact that the “the best” companies at NPD today resemble the average company of 15 years ago when it comes to their portfolio mix. By contrast, the average company today has seen its portfolio shift markedly in the last 15 years. See Exhibit 3 on this page:

- In 1990, 20.4 percent of the average portfolio comprised true innovations or new to the world products and projects.
- By 2004, that had been cut almost in half, down to 11.5 percent of the portfolio.
- But not so in best performing businesses: In 2004, innovative products represented 17.1 percent of their portfolios, almost what it was in the average business in 1990.²
- Look at the worst performers in 2004: They undertook few innovative projects, down to 8.5 percent of their development portfolios.

In short, the profile of the average business's development portfolio is getting worse and moving away from the profile found in best performers. But best performing businesses continue to elect a more innovative development portfolio.

The message is clear: If your development portfolio resembles the average business's (column headed “Average Business 2004” in Exhibit 3), with a preponderance of NPD centered around improvements, modifications and additions, maybe it's time to re-

Exhibit 2: Characteristics of the Typical Development Portfolio



SOURCE: APQC 2004 study².

Exhibit 3: Portfolio Breakdowns of the Best and Worst Performing Businesses in 2004 Compared to Businesses in 1990

Development Project Type	% of Projects in the Development Portfolio			
	Best Performers 2004	Worst Performers 2004	Average Business 2004	Average Business 1990
New to world – true innovations	17.05%	8.53%	11.48%	20.4%
New product lines to the company	25.87	22.99	27.12	38.7%
Additions to existing product line in company	26.82	22.01	24.66	20.4%
Improvements & modifications to existing company products	30.26	46.47	36.75	20.4%
Total	100.00%	100.00%	100.00%	100.0%

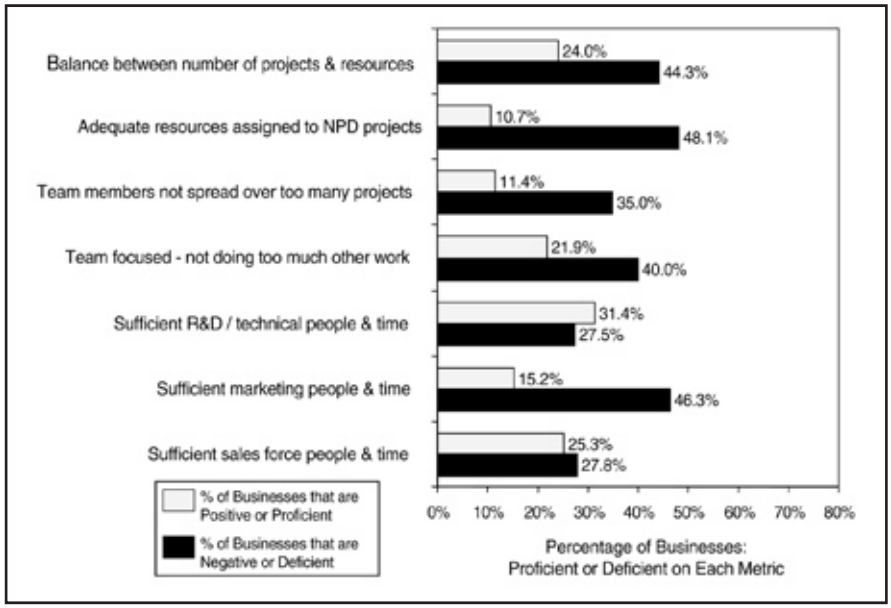
SOURCES: APQC 2004 study² and JPIM article¹.

Recent Benchmarking Studies

These alarming trends in portfolio composition are visible in two recent NPD benchmarking studies—

- APQC Benchmarking Study. 2003 and 2004. See three-part series: Cooper, R.G., Edgett, S.J. & Kleinschmidt, E.J., “Benchmarking best NPD Practices,” *Research Technology Management*, Vol. 47:1 Nov-Dec. 2003, pp. 31-43; May-June 2004, pages 50-59; and Nov.-Dec. 2004, pp. 43-45.
- PDMA Foundation 2004 Comparative Performance Assessment Study (CPAS). See “PDMA foundation CPAs study reveals new trends,” *Visions* Vol. XXVIII; No.3, July 2004, Pages 26-29. Additional details may be downloaded at pdma.org.

Exhibit 4: Evidence of the Resource Crunch in NPD



SOURCE: APQC 2004 study².

think what product innovation really means. That emphasis may also explain why your product development results as a business have not been stellar of late. This type of portfolio won't produce the results than most companies desire, and certainly is not what the best performers do.

Understanding the root causes

Before we leap forward to solutions, let's reflect on what's causing this portfolio shift. In discussions with managers as part of several recent studies, we identify four main drivers:

Driver #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.⁴

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 a drop in cycle time (witness the PDMA best practice results above), but also a

deterioration of the quality of the portfolio of development projects.

Driver #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 con-

“ Today businesses are preoccupied with minor modifications, product tweaks, and minor responses to salespeople's requests. ”

sume 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 the sales force and the customer happy; they also maintain the 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 suck away the resources needed to develop genuine new products, 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”

Driver #3—A resource crunch

The battle cry, “make the numbers” and “make the quarter,” has led to serious resource deficiencies for many business's new product efforts. The financial goal has become “doing more with less”; and so managements fail to commit the necessary resources to NPD, cutting vital technical and marketing staff. The point has been made by Katz; moreover look at the hard research evidence in Exhibit 4⁵ on this page:

- Businesses are putting more projects through their development pipelines with no real increase in resources. The great majority—76.0 percent of businesses—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.²
- With too many projects underway, people are spread too thin (88.6 percent of businesses 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 (RD&E) 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 NPD projects.

This *resource crunch* has a direct impact on the nature of the portfolio that a business elects. Simply stated, management favors incremental projects when faced with a serious resource constraint. Why? When resources are tight, managers take few chances—they elect 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...."

Driver #4—The wrong project selection criteria

The most popular project prioritization methods by far are financial tools: payback period, NPV and the productivity index. Financial techniques work very well for known projects where financial outcomes are predicable. 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 (IRI) 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!*⁶ An over-emphasis on financial criteria for project selection will necessarily 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 predicable.

Possible solutions

Here's some advice I offer managements who face these portfolio balance problems.

Develop a product innovation and technology strategy for your business. And let that strategy dictate the breakdown of your development portfolio.

About half of all businesses do not have a well articulated strategy to guide their product development efforts.² Such a strategy defines your business's new product goals; it delineates the areas of strategic focus—the markets, segments, product types and technologies where you'll focus your development efforts; and most important, it defines resource deployment—where you'll spend your funds and people resources.

Consider using and sticking to "strategic buckets"

Strategic buckets simply define where management desires the development dollars to go, broken down by project type, by market, by geography, or by product area.⁷ Strategic buckets is based on the notion that *strategy becomes real when you start spending money*, and thus translating strategy from theory to reality is about making decisions on where the resources should be spent strategic buckets. In the example in Exhibit 5 on page 14, management begins with the business's strategy and then makes strategic choices about

resource allocation: how many resources go to new products versus improvements, modifications and extensions versus platform developments? With resources allocation now firmly established and driven by strategy, projects within each bucket are then ranked against each other to establish priorities.

Note that projects in one buckets such as "new products" do not compete against those in another bucket, such as "improvements and modifications." If they did, in the short term, simple and inexpensive

“Businesses are not undertaking the challenging, step-out and significant innovations and new products they once did.”

projects would always win out, as they do in many businesses. Instead, strategic buckets build firewalls between buckets. Thus, by earmarking specific amounts to "new products" and to "platform developments," the portfolio becomes much more balanced.

Change your old metrics!

Recognize that an over-emphasis on short-term financial performance will invariably harm your new product efforts. While short term financial results are important, consider introducing other metrics as well to gauge a business's performance, for example metrics that capture the longer term and the potential for growth of the business.

An example: An important change the former CEO of ITT Industries made was to

revamp the measurement system for General Managers of business units. Traditionally, the key performance metrics had been short term financial results: profits and costs meeting targets. In order to encourage more innovation, the CEO declared that "percentage of sales from new products" would be tracked by business unit, and senior managers measured against this metric.

Ironically, in spite of its apparent importance, this form of measurement is not widespread: Only 34.3 percent of businesses make new product metrics part of senior management's performance objectives, the weakest of all senior management practices.²

Balance speed with profitability and impact.

When speed begins to dominate at the expense of everything else, it's time to rebalance and rethink one's development objectives. Remember: The goal is a steady stream of profitable new products. And while speed and

cycle time reduction are factors in achieving profitability, there are other drivers too.

An example: "Speed is dead at Procter & Gamble," declared the Manager of Corporate New Initiatives Delivery. He went on to explain that many of the actions taken to save time actually had a significantly negative impact on the company's NPD results. Today the emphasis is more on *doing it right* rather than *doing it fast*; and the results are evident, with P&G's total new product effort never more profitable.

Change your project selection criteria.

There is no universal criterion or project selection tool to rate, rank and pick projects! The right method and criteria depend on the nature of the project, and where in the pipeline the project is.

How to remedy portfolio balance problems

Here are some strategies to remedy portfolio balance problems. Details are given in the article.

- **Develop a product innovation and technology strategy for your business.**
- **Let that strategy dictate the breakdown of your development portfolio.**
- **Consider using—and sticking to—"strategic buckets"**
- **Change your old metrics.**
- **Balance speed with profitability and impact.**
- **Change your project selection criteria.**
- **Feed the pipeline.**

For smaller, low risk projects, such as modifications, extensions, cost reductions, and tweaks, use a combination of a financial model, such as payback or NPV, along with a simple scoring model. The scoring model includes criteria such as “ease of implementation”, “availability of production capacity” and “customer importance.”

For genuine new products, where financial outcomes are less predictable, use a multi-item scoring model, with criteria such as strategic fit, competitive advantage, leverage, market attractiveness and financial return-versus-risk. (An example is found in reference⁷.) As the project progresses through the various gates, increasingly shift to financial metrics and quantitative success criteria for project validation and justification.

For platform developments, technology developments and radical breakthrough projects, financial criteria are almost useless, especially early in the life of such projects when the key investment decisions must be made. Thus, use a scoring model but with criteria that are more strategic in nature and emphasize strategic importance, strategic leverage and feasibility.

Feed the pipeline

Having a well-oiled idea-to-launch process is fine; and so is having a strategic direction. But without blockbuster ideas for new products, the exercise is anemic: If the feed to the pipeline is dry, don't expect a portfolio of big winners! Recognize that conceiving breakthrough new product ideas is hard work and requires a variety of efforts. Some of the methods that work well include Voice of the Customer (VOC) research, idea contests, creativity techniques, scenario generation, and strategic planning.

Proactively manage


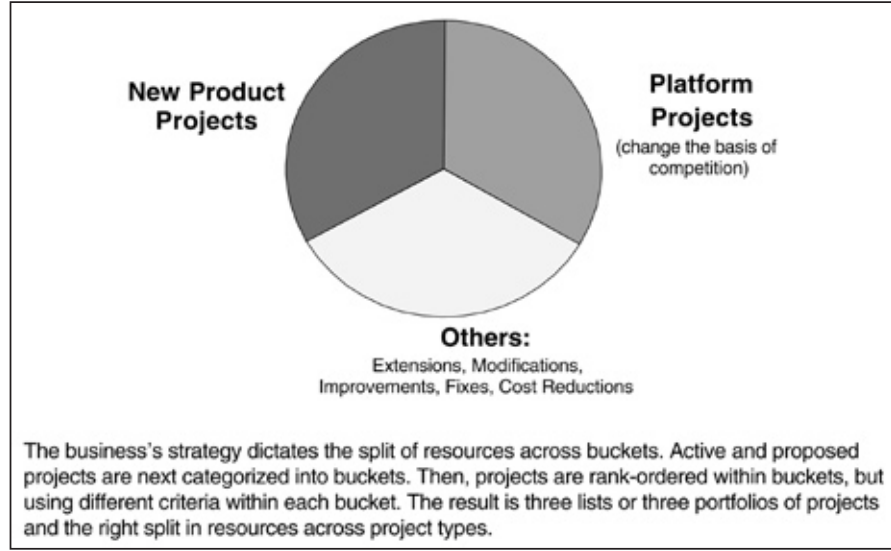
If your NPD portfolio is weak, then your business's new product results are sure to follow. Recognize that *every development project is an investment*, and just like your stock market portfolio, the mix and balance of these new product project investments must be carefully scrutinized. A portfolio that is strategically driven, is fed by a proactive idea generation process, relies on the right selection criteria to pick projects, and balances quality-of-execution with speed to market is the solution that many leading firms have elected to improve their NPD performance. 

Exhibit 5: Strategic Buckets—Resources Are Strategically Allocated by Project Type into Buckets



SOURCE: *Portfolio Management for New Products*⁷.

References

¹ PDMA studies: Adams, M. & Boike, D., “PDMA foundation CPAS study reveals new trends”, *Visions*, XXVIII: 3, July 2004, 26-29; and: *The PDMA Foundation 2004 Comparative Performance Assessment Study (CPAS)*. For mid 1990s data, see: Griffin, A., *Drivers of NPD Success: The 1997 PDMA Report*. PDMA 1997.
² APQC benchmarking study: Cooper, R.G., Edgett, S.J. and Kleinschmidt, E.J.,

⁴ Cooper, R.G. & Edgett, S.J., “The dark side of time and time metrics in product innovation”, *Visions*, XXVI: 22, Apr-May 2002, 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, Sept 1992, 188-199.
⁵ Katz, Gerry, “Not so fast,” *Visions*, XXVIII: 4, Oct 2004, 8; and: Cooper, R.G. & Edgett, S.J., “Overcoming the crunch in resources for new product development,” *Research-Technology Management*, 46:3, May-June 2003, 48-58; also reference [4], *Visions* 2002.
⁶ 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, 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, Oct 2001, 361-380.
⁷ Strategic buckets explained in: Cooper, R.G., Edgett, S.J. & Kleinschmidt, E.J., *Portfolio Management for New Products, 2nd edition*. Reading, Mass: Perseus Books, 2002.

“Strategic buckets define where management desires the development dollars to go.”

“Benchmarking best NPD practices—II: Strategy, resource allocation and portfolio management”, *Research Technology Management*, 47:3, May/June 2004, 50-59. For 1985 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, 71-85. This study was begun in 2003 and ended in 2004.
³ For current portfolio breakdown data, see APQC study, reference ². Source of 1990 breakdown: Kleinschmidt, E.J. & Cooper, R.G., “The impact of product innovativeness on performance,” *Journal of Product Innovation Management* 8, 1991, 240-251.

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