



Marketing **by Experiment**

By Yoram (Jerry) Wind

Adaptive experimentation
ensures that research is
fast and flexible.

A company sets a \$100 million marketing budget for a product launch. A year later, it has spent the budget, and management is able to assess the results. Or is it? It has detailed data on every aspect of the launch campaign, but it still cannot answer a very fundamental question: Was this the optimal budget? (What would have happened if the company had spent \$50 million or \$150 million?) With a one-time test, management has little guidance in setting the next budget.

Executive Summary

Rather than seeking single answers to simple questions, researchers must experiment with diverse strategies. “Adaptive experimentation” is a philosophy that integrates research and action. This approach is important in today’s swiftly changing business environment, where researchers must challenge their assumptions and devise fresh tactics. By becoming advocates of adaptive experimentation and faithfully implementing it, they can secure a seat at the table and influence critical business decisions.

Suppose that instead, management had set up a carefully designed experiment to test different levels of spending. In one market, it would invest at a level comparable to a \$100 million launch; in a second market, it would invest at a level comparable to a \$50 million launch; and in a third market, it would invest at a level comparable to a \$150 million launch. At the end of the year, they would be able to compare the results of the different markets, and then use this learning as the foundation for the next set of experiments in the following year. If the \$150 million budget level happens to emerge as the hands-down best option, then the company could invest 80% of its total budget in that strategy on the next round. But it still might devote the remaining 20% of its total budget to other experiments, looking at even higher or lower levels or experimenting with other variables.

A single test offers a single answer. The management that had pursued the single budget for the product launch wasted a year while discovering very little. Multiple strategies, as part of a rigorous experimental design, offer opportunities for greater learning.

This approach of “adaptive experimentation” is particularly important in a rapidly changing business environment, where researchers should challenge assumptions about what works and come up with other approaches. Because of market shifts and imitation, a winning strategy might last for only three to six months. This means that the experimentation must be continuous to identify the next strategy. Changing technology and business models raise new questions about current marketing thinking:

- If TiVo users are no longer looking at TV commercials, then how can companies best get their advertising messages across?
- How can companies tap into the rising interest in social networking Web sites such as MySpace?
- Does the existence of new media channels make a \$2.6 million investment in a 30-second Super Bowl advertisement more or less valuable?
- The expansion of simulated environments such as Internet-based Second Life has created parallel universes for adver-

tising, but what combination of “first life” and Second Life approaches are most effective?

In an environment of discontinuous change, research can answer questions like these only through trial and error. Adaptive experimentation permits this process, but in a systematic manner. Adopting the philosophy of adaptive experimentation is the best way to become a learning organization that continuously challenges its strategies, measures their impact, improves them, and encourages innovation.

In this environment, the effectiveness of specific marketing research approaches might erode over time, as the nonresponse problem in surveys illustrates. With the proliferation of telemarketing activities, and the volume of polling, some subjects are just refusing to be interviewed. This problem is particularly troubling in critical segments such as busy physicians and high net-worth individuals. As the value of certain tactics decline, researchers must find new ways to gain insights into market needs, wants, preferences, and responses to marketing strategies. To do this and learn about what works, they should experiment with diverse marketing research methods.

Adaptive Experimentation

Both the development of strategy and the design of marketing research could benefit from adaptive experimentation. In contrast to discrete, one-shot tests and research, adaptive experimentation is rigorous, multifaceted, and continuous. It can pursue several hypotheses simultaneously or sequentially, using the results of each round of testing as the foundation for the next experiment. Adaptive experimentation integrates research and action. It is not a technique, but a philosophy and method for learning and managing evolving enterprises.

Although serendipity can be important in developing ideas, adaptive experimentation is not random. It consists of carefully designed experiments that test various marketing and business strategies across different geographies and product categories. These strategies can include assorted advertising levels, media mixes and messages, sales force sizes, organizations, pricing options, and many other dimensions.

Adaptive experimentation can start with a simple design (e.g., testing marketing budgets), and then researchers add more complexity in subsequent rounds of experiments—such as exploring marketing mixes and other variables, and using Latin square or alternate experimental designs. Adaptive experimentation can employ methodologies such as the Multitrait-Multimethod Matrix (MTMM), as part of the portfolio. D. Campbell and D. Fiske developed the MTMM approach to test the validity of various methods, such as pen-and-paper tests, direct observation, and performance measures. (Read their article, “Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix,” in the March 1959 issue of *Psychological Bulletin*.)

A rigorous design increases the efficiency and effectiveness of the experiments, reducing the number of them required to gain insights. Rather than using full factorial testing, researchers can move to fractional factorial testing to identify a subset of meaningful combinations. By using such efficient

approaches, researchers can more easily engage in continuous testing and create a nimble marketing strategy.

Strategy as Experimentation

Adaptive experimentation can offer a crucible for testing both marketing strategy and new business models, as pioneering companies in diverse industries and contexts demonstrate. Researchers almost universally recognize the power of adaptive experimentation in direct mail. The cost of designing tests is very low, and they can easily measure outcomes. With large mailing lists, there are abundant opportunities to develop multiple experiments. This makes direct mail particularly well-suited to low-cost experimentation. Direct marketers test many approaches, see what messages and designs work best, and then continue to refine their hypotheses on the next round of tests.

Early research with direct mail, for an insurance company, found that it was able to triple its response rates through well-designed experiments. And a major financial services company used a set of adaptive experimentation to test hundreds of credit card offerings every month. It created tests focused on various messages and execution, then assessed the results and designed new ones.

Researchers have demonstrated the power of adaptive experimentation in other areas. For example, California-based

design consultancy IDEO employs it to develop new products through what it refers to as “enlightened trial and error.” Yet despite the successes in direct mail and new-product development, researchers have underused adaptive experimentation.

The time has come to expand the use of adaptive experimentation. For instance, a pharmaceutical company designed experiments to test the optimal level and mix of promotional activities, increase patient compliance, connect with untapped physician segments, and achieve other objectives. To test its strategy for promotion, the company used a multicell adaptive experiment. For 16 weeks, it used varying levels of detailing, sampling, advertising, and medical education in different regions. The company then adjusted the approaches in each of the markets, based on the initial experiments—quickly identifying the most effective tactics for specific areas.

Companies can also test bolder strategies for new offerings and revenue models, in an integrated fashion. A pharmaceutical company wanted to experiment with a shift from a brand-centric strategy to a customer-centric one: from selling branded drugs for treating a single illness to addressing the concerns of patients suffering from more than one ailment. For example, many patients with diabetes might also have problems with cholesterol.

The experiments examined strategies that combined diabetes with cholesterol, breast cancer with depression, and HIV

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with depression. This led to a set of experiments with product and service offerings, information and education, psychology and social support, business relationships, pricing and revenue models, and customization—plus the creation of virtual communities. They also examined integrated marketing, localized and global strategies, and e-business opportunities. Through careful experimentation, the company could test a unique way of looking at its business.

Benefits of Experimentation

Adaptive experimentation offers many benefits over the more common implementation of a single strategy.

Stimulating breakthrough ideas and a culture of innovation. Adaptive experimentation sees the entire organization as a laboratory, which promotes discontinuous thinking. This leads to breakthroughs in strategy, rather than minor tweaks to the next ad campaign. When researchers see adaptive experimentation as a way of life, employees realize that it is all right

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to fail. Failure is part of experimentation; the ability to fail is vital to learning. Experimentation in a company without this mind-set can be very disruptive. And without a culture of experimentation, organizations might kill or not appreciate successful experiments because they represent a threat to the status quo.

The sobering fact is that the leading companies in their industries don't develop many innovations (e.g., the iPod came from a computer company, not a music company). This is an indication that many companies are too timid in their thinking and initiatives. They are not taking bold leaps to challenge the views of their industries and come up with radical new ideas and approaches. Adaptive experimentation can help identify, develop, and implement these.

Focusing on measurement and improvement. An attitude of experimentation encourages measurement across the organization, to understand results. Researchers create experiments with clear measurements of the effectiveness of the approaches that they test, including return on marketing investment. Companies can also integrate the results of these experiments into corporate dashboards. This mind-set of measurement leads to research-based actions. And advances in database marketing allow for better analysis of adaptive experimentation's results, at the individual and segment level.

Confusing competition. Unless competitors know the master design when a company is engaged in a number of experiments, they have no way of inferring the underlying strategies from the company's activities and results. Competitors might be able to see the individual experiments, but still not know where they are leading. In contrast, a typical test market or

prototype might tip the hand of the company to competitors, often undermining the advantage of the strategy.

Addressing real-world applications. Some have criticized marketing research approaches that fail to deliver real-world results. Adaptive experimentation is grounded in actual implementation, so results are more likely to be valid and generalizable in practice.

Experimentation in Research

Marketing researchers ought to see adaptive experimentation as a key tool and as an effective philosophy for guiding all research. It is also very useful in addressing complex decisions that do not lend themselves to standard marketing research.

With any given approach, researchers can use experimentation to refine it. Experimentation can improve the quality, effectiveness, and efficiency of research tools and approaches. For example, in using panels, which incentives are most useful, which ways of identifying new panel members lead to the best results, and how are online and offline panels different? A set of experiments could lead to strategies for improving response rates or other outcomes.

Adaptive experimentation can test combinations of tools. Researchers can experiment with different mixes of marketing research tools, such as surveys based on convenience samples, conjoint analysis, and tracking surveys. What combination yields the best results for a specific company or research challenge?

Adaptive experimentation can be a guiding philosophy for research. It encourages researchers not to become overreliant on a single research tool or set of tools. Instead, it promotes the development of a portfolio—and researchers continually sharpen, test, and expand that with each round of experiments. Researchers can apply this mind-set to all research activities.

Obstacles and Opportunities

Given its benefits, why don't researchers employ adaptive experimentation more broadly? There are a number of obstacles to adopting it. Cost is a concern, because it is typically more expensive to design and implement multiple strategies than a single strategy. And experimentation requires a process for measuring results. There is also resistance from those involved in experimental cells that do not perform well. To overcome such resistance, particularly in a sales force, the solution might be to adjust incentives. For example, a company can guarantee salespeople a level of income regardless of the results of their experimental cells. This protects them from feeling penalized when the company places them in a cell it expects to have lower performance (e.g., where marketing spending is reduced). But this also raises the costs of implementation.

In addition, companies face opportunity costs because of the potential for failure of experimental options. These costs can be particularly great for experiments that are risky, such as using no advertising in a given cell. Some extreme experiments might even hurt overall brand equity. And certain strategies might have unintended negative consequences, so one should

try to avoid such experimental options. In this case, researchers need to take immediate action to protect the brand—which can also be quite expensive. Furthermore, management might be concerned about disruption of the business, because companies can find it challenging to execute capably against the current strategy and experimental ones—while continuing to test and learn.

But again, cost is not the only obstacle to adaptive experimentation. Perhaps the biggest barrier is the mind-sets of researchers and managers, which can limit their thinking and creativity. For more information read *The Power of Impossible Thinking* (Wharton School Publishing, 2004) by Yoram (Jerry) Wind and Colin Crook, with Robert Gunther. The current mind-set sees marketing research as a precise application of a set of tools, rather than a philosophy of investigation. Management treats marketing research as a practical and applied engineering discipline. Although this engineering view is important, it is too narrow. Management needs to observe marketing research through the lens of broader scientific inquiry, in which researchers raise and test big questions. Challenging the mind-set of continuing with the current, known, and comfortable is a must.

In applying adaptive experimentation, researchers need to weigh the costs and added complexity against the results and benefits. Adaptive experimentation might be more costly in the short term, but it produces the most value in the long term. The benefits, as discussed, are compelling. It is time to apply experimentation more broadly to the philosophy and practice of marketing research. With advances in data availability and measurement, all organizations can adopt adaptive experimentation.

Cost is a particular concern for small companies, which might have limited resources to engage in adaptive experimentation. But given (1) the risks of the wrong marketing and business strategy, (2) that they can rarely afford the time involved in standard research, and (3) the likelihood that larger competitors will move to preempt if their directions are clear, small companies might have more compelling reasons to employ adaptive experimentation than large firms do. Small companies, however, do have to be very attentive to reducing risks and costs as they proceed. They can achieve this by effectively managing the learning organization.

Adaptive experimentation can also allow a large company to act more like a small one. Quick, little experiments allow the company to fail fast and cheap and test innovative strategies without risking everything. Valid and reliable testing at low cost also permits lower-level managers (particularly those of regions or countries) to experiment without having to jump through bureaucratic hoops for approval. This streamlines the process of innovation, and allows for more widespread and diverse experiments.

Beginning to Experiment

Senior executives make many major business decisions without the benefit of marketing research. This is unfortunate, because marketing research is often directly relevant to launching business models, growth plans, or other strategic initiatives. With a focus on business challenges, adaptive experimentation can raise the stature and usefulness of marketing research within the organization.

With corporate demands for growth and innovation, marketing and marketing research have to deliver more. At the same time, marketers have been asking for a seat at the table to influence key business decisions. Becoming champions of adaptive experimentation and implementing it on an ongoing basis is the best way to ensure that they get this seat. Adaptive experimentation will make marketing research more applicable to top management wrestling with the company's major strategic issues. It can offer insights and answers for these decisions—such as whether to continue using TV advertising, enter new distribution systems, or launch marketing and cobranding initiatives. This creates an opportunity to expand the application and impact of marketing research, increase its value, and raise its stature in the organization. This will also help bridge the silos of marketing and other disciplines, creating a more integrated approach.

Looking at the organization more broadly, adaptive experimentation coupled with flexible corporate strategy is an integral part of creating “adaptive enterprises.” In *Adaptive Enterprise* (Harvard Business School Press, 1999), Stephan H. Haeckel characterizes this as a shift from “make and sell” organizations to “sense and respond” organizations. The adaptive organization uses feedback loops for sensing and interpreting, deciding and acting, and continuing to refine the strategy and adapt to changing conditions.

With burgeoning new technologies and an avalanche of data, the potential for new approaches to marketing research is enormous—as is the need to develop them. We need to add adaptive experimentation to our portfolio of approaches, and adopt it as a core philosophy for how we conduct marketing research. We need to start experimenting now—and keep experimenting—to continuously improve our strategies. ●

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