

MANAGEMENT FADS AND ORGANIZATIONAL ARCHITECTURE

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The titles displayed in the business section of any good bookstore these days present a seemingly endless array of management prescriptions: *Total Quality Management, Reengineering, Benchmarking, Activity-Based Costing, Just-In-Time Production, Quality Circles, Outsourcing, Economic Value Added, Empowerment, Self-Directed Teams, Venturing, Incentive Compensation, Cycle-Time Reduction, Strategic Alliances, Management by Objectives, 360 Degree Performance Reviews, Matrix Organizations, Downsizing, Learning Organizations, Market-Based Management, Core Competencies, Groupware*. Given this glut of "new" management techniques, one might expect corporate executives' appetite for novelty to show signs of diminishing. Yet judging from book sales, consulting fees, and the proliferation of seminars, the corporate demand for managerial innovations appears to be steady if not growing.

Nevertheless, reports on the effectiveness of such innovations are strikingly divided. Take the cases of Reengineering and Total Quality Management, two of the most popular management techniques of the 1990s. One survey of 500 U.S. managers from large companies conducted in 1994 reported that 76% of the companies represented in the survey had at least tried TQM and that 69% had employed some form of Reengineering.¹ Such remarkable adoption rates have spawned legions of management consultants, many of whom can be counted on to claim that TQM or Reengineering is essential for the success of most if not *all* companies. There is even a highly coveted national prize, the Malcolm Baldrige National Quality Award, that is presented each year to the most successful companies applying the principles of TQM.

But, for all their successes, a significant number of TQM and Reengineering programs have failed to live up to expectations. Recent press stories have expressed growing dissatisfaction with Reengineering programs, to the point where the founders of the movement, James Champy and Michael Hammer, are reported to have shifted the focus of their consulting efforts away from "downsizing" initiatives and toward the pursuit of "growth" opportunities. And reports of discontent with TQM began to appear in the early '90s. For example, a Gallup poll of over 1,200 corporate employees in 1990 reported that while over half said that quality was "top priority," only one third considered their companies' programs to be "effective."² A survey of 300 large companies conducted by *The Wall Street Journal* in 1991 found that executive satisfaction levels with TQM were only 40 percent.³ Some companies, such as McDonnell-Douglas Aircraft and Florida Power & Light, reported having abandoned their TQM programs. Wallace Co., after winning the Baldrige Award in 1990, filed for bankruptcy in 1992.⁴ Finally, a study of 584 U.S., Canadian, German, and Japanese firms in 1991 concluded that "many businesses may waste millions of dollars a year on quality-improvement strategies that don't improve their performance and may even hamper it."⁵

Such mixed reviews are not confined to just TQM and Reengineering. Evidence of the rise and fall of a larger sample of recent management innovations is presented in Figure 1, which displays the percentage of published business articles mentioning a particular management technique in a given year. For example, as shown in the first graph in Figure 1, almost 1.5% of all business articles published in 1993 contained the words "Total Quality

1. "Missions Possible," *The Globe and Mail*, September 13, 1994, B22.

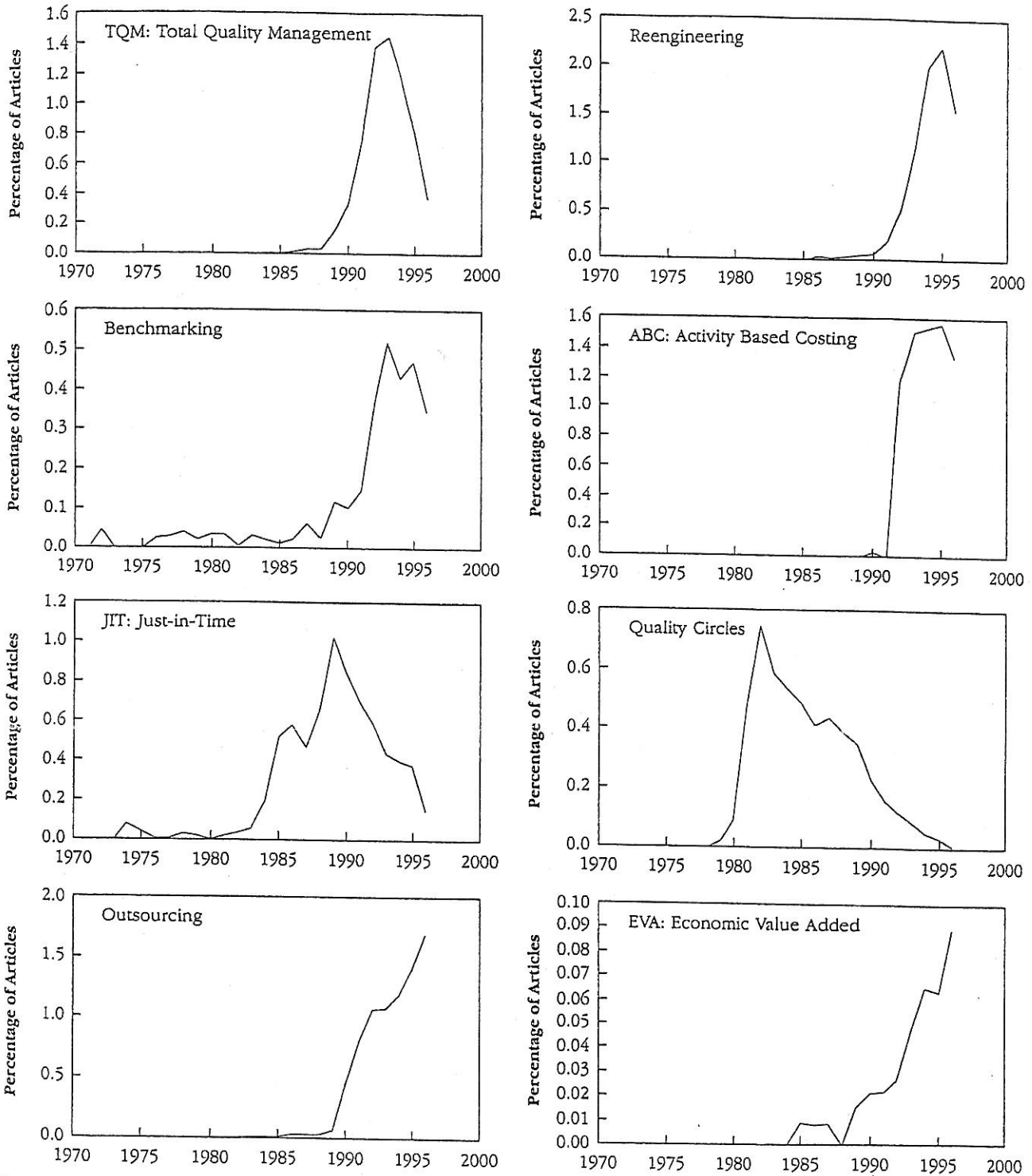
2. *Wall Street Journal* (October 4, 1990) B1.

3. *Wall Street Journal* (July 6, 1993) A1.

4. *Newsweek* (September 7, 1992) 48-49.

5. *Wall Street Journal* (October 10, 1992) B7.

FIGURE 1 ■ LIFE CYCLE OF INNOVATIVE MANAGEMENT TECHNIQUES (PERCENTAGE OF ARTICLES PUBLISHED EACH YEAR ON A PARTICULAR SUBJECT)



Management" or "TQM." The graph also shows that, after reaching a peak in 1993, citations of TQM have fallen sharply. A similar pattern can be observed for "Reengineering," which achieved peak prominence in 1995. And two much-noted management preoccupations of the 1980s, "Just in Time" Production (or "JIT") and "Quality Circles," have lost almost all press coverage. The last four graphs—"Bench-marking," "Outsourcing," "Economic Value Added," and "Activity-Based Costing"—represent still more recent innovations. Benchmarking and ABC are starting to fade; EVA and Outsourcing continue to rise.⁶

If history offers any guide to the future, management techniques will continue to wax and wane. And new techniques—many of them reviving elements of older "innovations"—will doubtless appear.⁷ The rise and fall of such management techniques raise a number of important questions:

- What explains the popularity of these management innovations?
- Why do they often fail to produce the expected benefits?
- How can managers tell if a particular technique is right for them?
- What can managers do to increase the likelihood that an adopted technique will be successful?

Our purpose in this article is to use the framework of *organizational architecture* to address these questions. By organizational architecture we mean three critical features of an organization: (1) the assignment of decision rights within the company (who gets to make what decisions?); (2) the performance evaluation system (what are the key performance measures by which managers and employees are evaluated?); and (3) the corporate reward system (how are people rewarded for meeting performance goals?).⁸ Although no two companies are likely to have precisely the same architecture, most successful firms ensure that these three critical aspects—decision rights, performance evaluation, and the reward system—are mutually consistent and reinforcing. In this sense, the components of organizational architecture are like the three legs of a stool: all three must

be designed together to ensure the stool is level. Stated in brief, an effective organizational architecture is one that not only links decision-making authority to people with the relevant information, but ensures that decision makers have appropriate incentives to make value-increasing decisions.

Thinking in terms of organizational architecture should help managers in evaluating the expected benefits—and costs—of management innovations for their own companies. As we will argue below, virtually all management techniques focus on a specific problem confronting an organization, while ignoring possible effects of their proposed solution on the rest of the firm. (In our terms, such changes typically affect one or two legs of the stool without careful consideration of their effect on the others.) As one obvious example, a too rigid insistence on "Just-in-Time" can lead to big customer service problems; and adopters of JIT should at least consider increases in the staffing (and perhaps the incentive pay) of their customer service department to accommodate such change. The framework described in this article can help managers considering one potentially valuable set of organizational changes to identify other facets of the organization that also require attention and perhaps complementary adjustments.

WHAT DETERMINES ORGANIZATIONAL ARCHITECTURE?

The extent to which top managements choose to decentralize decision-making, and the design of the performance evaluation and reward systems they use to provide incentives and ensure accountability, differ greatly among companies. Such differences are not random, but vary in *systematic ways* with differences in certain underlying characteristics of the companies themselves. This is the main reason companies operating in the same industry tend to develop similar architectures. For example, most public utilities have centralized decision-making and make limited use of incentive compensation. By contrast, public accounting and consulting firms

6. "FirstSearch," an on-line referencing software, was used to gain access to ABI Inform, a database containing over 800,000 articles in 1,000 U.S. and international publications on business and management topics. To calculate the percentage of articles published, the total number of business articles in a year was determined by searching for the following: "business," "management," "firm," or "managers."

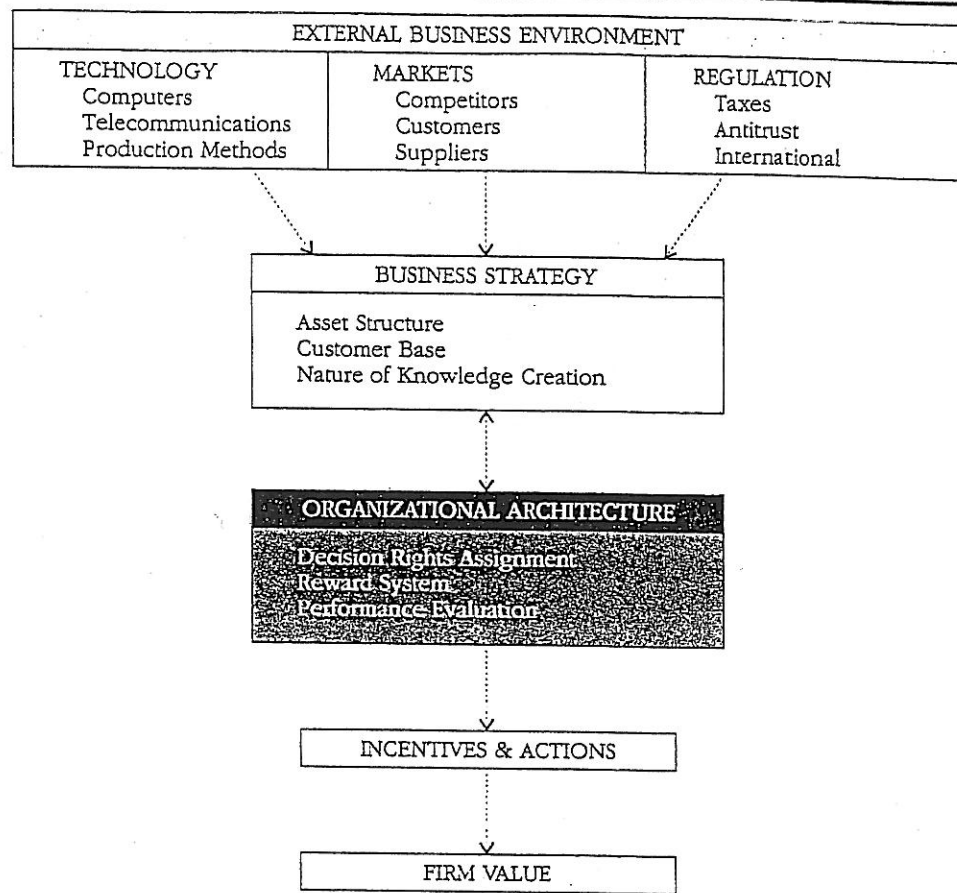
7. The reader is cautioned against reading too much into Figure 1. Some of these management techniques may still be actively used, but under another term. The press publishes articles about "new" topics. "Old" topics are more difficult to

attract the attention of journalists. However, the articles counted in Figure 1 are not just articles about the particular technique, but rather are articles that simply mention the technique.

8. For the seminal work in the development of this organizational framework, see M. Jensen and W. Meckling, "Specific and General Knowledge, and Organizational Structure," in *Main Currents in Contract Economics*, L. Weisbach and H. Wijkander, eds. (Blackwell, Oxford 1991). See also J. Brickley, C. Smith, and J. Zimmerman, *Managerial Economics and Organizational Architecture* (Chicago: Irwin/McGraw-Hill, 1997).

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FIGURE 2
THE DETERMINANTS OF
BUSINESS STRATEGY,
ORGANIZATIONAL
ARCHITECTURE, AND
FIRM VALUE



tend to operate as partnerships with fairly decentralized decision rights, profit-sharing plans, and performance measures based on hours billed and new client development. If an important aspect of an industry's environment changes, most companies in that industry will respond by changing their decision rights and internal control systems.

In Figure 2, we summarize those factors that are likely to be most important in determining the optimal architecture for a given company. At the top of the figure are three key aspects of the external business environment: *technology*, *markets*, and *regulation*. For any company, it is these three

factors—(1) the technology that affects its products, methods of production, and information systems; (2) the structure of its markets (competitors, customers, and suppliers); and (3) the regulatory constraints on (and tax consequences of) its activities—that are likely to have the greatest influence on its *business strategy*. By business strategy, we mean the answers to such questions as what products to produce, what customers to serve, and whether to compete on price, time to delivery, and so on.

A company's business strategy in turn tends to have the most direct influence on its optimal organizational architecture.⁹ For this reason, significant

Questions
on
Bus
strategy

9. In some ways, Figure 2 provides an overly simplistic view of the determinants of strategy, architecture, and firm value. The figure underemphasizes potentially important feedback effects among the environment, business strategy, and architecture. While we emphasize the effects of strategy on architecture, the effects are not all in one direction (note the two-headed arrow). Business strategy also can be influenced by organizational architecture. For instance, a company might decide to enter a new market because its decision and control systems are especially well-suited for this new undertaking. Moreover, Microsoft invests

resources to develop software that, in turn, alters the basic technology facing the firm. Large firms also often have political power that can be used to influence government regulation. While these types of feedback effects can at times be important, in most circumstances managers must take the business environment essentially as given (hence, the one-headed arrows). This environment, in turn, largely determines what the firm can expect to accomplish (its business strategy) and its architecture.

changes in corporate business strategies are often followed, if not accompanied by, major changes in decision-making authority, performance measures for evaluating employees, and incentive-compensation systems.

Take the case of AT&T in the early 1980s, before it was broken into the regional operating companies called the Baby Bells. Regulation then dictated many aspects of the company's business strategy—what services it could offer, what customers it could serve, and how much it could charge them. Moreover, a regulated AT&T faced little competition or pressure for technological innovation. It operated in a reasonably stable environment—one where it made sense for a large formal bureaucracy to make most important decisions "from the top down."

Since the break-up of AT&T, however, the telecommunications industry has experienced almost continuous upheaval in the face of deregulation, increased competition, and rapid technological change. Both the Baby Bells and the new AT&T have been forced to devise new strategies to provide new products, serve new customer bases, and develop new pricing structures. And, in response to such changes in the external environment and its business strategy, AT&T's organizational architecture has gradually been redesigned. The most visible sign of this change came in 1992 when, after a nearly decade-long series of incremental moves toward decentralization, the company established a large number of fairly autonomous profit centers. The managers charged with running these centers were put on pay-for-performance plans tied to the operating results of their units.

Another major influence on the organizational architecture of U.S. companies has been the increase in *foreign* competition faced by American firms in the 1980s and 1990s. For years, many large American companies (such as ITT, IBM, General Motors, and Xerox) faced limited competition in their product markets. Given their substantial market power, these firms faced virtually no external pressure—and had little incentive—to focus on rapid product development, high-quality production, or competitive pricing. They had become highly bureaucratic with centralized decision-making and modest use of

incentive compensation. In the past decade, however, a dramatic increase in foreign competition—notably from Japanese companies—caused many of these large firms to rethink their basic strategies. In particular, such companies were forced to increase their emphasis on quality, customer service, and competitive pricing.

To accomplish these objectives, such companies often found it necessary to change their architectures. Many chose to push decision rights lower in the organization, where specific knowledge about customer demands was located. They also developed new performance-evaluation systems that emphasized quality and customer service and increased their use of incentive compensation plans. For example, starting in the mid-1980s, Eastman Kodak switched from a functional to a product-line decision-making structure and installed new performance measures and reward systems.

But it is also important to note that decentralization has not been the only appropriate response to recent changes in the business environment. In some instances, changes in technology and more competitive markets have led to *more centralized* decision-making.¹⁰ Take commercial banks, many of which now find themselves—thanks to advances in MIS, financial technology, and deregulation—operating in an intensely competitive financial-services industry. Although some banking activities that once tended to be centralized under the control of a rigid management hierarchy are now being decentralized, a number of large banks have recently chosen to consolidate or centralize activities that had earlier been decentralized.¹¹ The aim of centralization in such cases has been both to achieve scale economies through consolidation and to help realize potential synergies within their increasingly diversified product lines.

BanOne, for example, operated until quite recently in highly decentralized fashion according to a model known (and much admired) as the "Uncommon Partnership." In 1996, however, the bank announced a major reorganization designed to downplay business-unit profitability and to achieve greater coordination of product lines that cut across individual business units.¹²

10. In such cases, technological advances in the form of faster, more reliable telecommunications networks and better information systems can be seen as cutting both ways. On the one hand, they encourage decentralization by demanding quicker responses from people on the line or "out in the field." On the other hand, technology also facilitates greater coordination and control in cases where it is likely to be most valuable.

11. See Christopher James and Joel Houston, "Evolution or Extinction: Where are Banks Headed?," *Journal of Applied Corporate Finance* Vol. 9 No. 2 (Summer 1996).

12. See the comments by John Westman in "Roundtable Discussion of Current Issues in Commercial Banking," *Journal of Applied Corporate Finance* Vol. 9 No. 2 (Summer 1996).

THE DEMAND FOR MANAGEMENT INNOVATIONS

With dramatic shifts in the business environment created by deregulation, technological change, and heightened global competition, whole classes of firms faced new challenges. For many companies, what may once have been appropriate architectures began to show signs of obsolescence. For example, as a growing number of large, once-successful companies began to lose opportunities to more flexible and, in some cases, overseas competitors, the opportunity costs of having unresponsive organizations began to show up in declining shareholder returns. This in turn created a broad-based demand for management prescriptions that would enable companies to respond more effectively to the new environment. In this sense, the demand for management innovations (or "fads," if you will) can be viewed as a rational economic response by senior managers to changes that cause some or all aspects of their organizational architectures to become obsolete.

Explaining the Rise of TQM¹³

Take the case of the broad-based adoption of TQM principles over the past decade. Before TQM the standard approach to ensuring product quality was to "inspect-it-in." Inspection stations and quality-assurance inspectors were added along the production line to weed out inferior products. Statistical sampling methods were used to draw random samples from a batch and, if an unacceptable number of bad units were found, the entire batch would be rejected.¹⁴ Sections of the factory stored defects waiting to be reworked or scrapped. In some cases, if market demand exceeded production in a period, marginally defective products were released and defects were corrected by the field service organization under warranty arrangements.

By the 1980s, two factors worked together to change the traditional approach to quality in many industries. First was a change in technology: the cost of detecting problems and monitoring production

with new computerized instrumentation fell sharply relative to the cost of maintaining quality with direct labor inspectors. Increases in the cost of labor (including fringe benefits) made the manual detection and correction of errors considerably more expensive than performing these tasks electronically. Instead of manually detecting and correcting defects after production, improved instrumentation allowed detection and correction of problems while the product was still in a production process.

A second key factor in the rise of TQM was the expansion of worldwide competition. Besides price wars, competition also took the form of a push for higher-quality products. Customers showed a willingness to shift to producers (many based overseas) of more reliable products. Perhaps the most dramatic case of such quality-driven competition was the auto industry in the early 1980s. Once Japanese companies gained price competitiveness against the American auto makers, they turned their attention to achieving quality advantages.

Thus, both the lower cost of detecting defects and increased global competition fostered quality improvements—and the Total Quality movement was born. To reduce defects, companies redesigned their products to require fewer different parts, making it easier to maintain tighter controls on the quality of their suppliers. Product designers redesigned parts that failed. Production processes were changed to reduce defects. Robots and more instrumentation were built into manufacturing to ensure more uniform production.¹⁵

The Demand for Other Innovations

While in many firms TQM programs were initially started to improve the tangible aspects of product and service quality for external customers, TQM programs expanded to include efforts to improve both the quality and the efficiency of processes and services—and for internal *as well as* external customers. In this sense, the boundaries between TQM and another popular innovation, Reengineering, have been somewhat blurred.

13. This section draws on the analysis in J. Zimmerman *Accounting for Decision Making and Control* (Richard D. Irwin, Inc.: Chicago, IL, 1997), Chapter 14.

14. Statistical Quality Control (SQC) consists of a set of statistical methods used to determine if a particular repetitive manufacturing process is in or out of control. By employing common statistical procedures (means and standard deviations), normal variation of the process is established. If products exceed the normal

bounds, the process is deemed "out of control" and subject to management investigation.

15. Another factor contributing to TQM is factory automation and flexible manufacturing that allowed firms to broaden their product lines and to change products more rapidly. At any time, there are more products and more new products on the factory floor. This means there is likely more specific knowledge on the shop floor now.

Reengineering. One way of distinguishing the two movements is to view Reengineering as accomplishing a set of major, *one-time* changes,¹⁶ as opposed to TQM's well-known emphasis on *continuous* improvement. Like TQM, the demand for Reengineering can be seen as stemming from both technological changes and heightened competition in the 1970s and '80s. As Michael Jensen argued in his 1993 Presidential Address to the American Finance Association, we have experienced what amounts to a "Third Industrial Revolution" in the past several decades. One major by-product of this wave of technological change has been more rapid product obsolescence and, as a consequence, chronic overcapacity in many global industries. Many of the major restructurings, consolidations, and downsizings associated with Reengineering can be seen as value-adding (if not entirely voluntary) managerial responses to excess capacity.¹⁷

JIT. Technological advances in instrumentation, computers, and telecommunications have also been a key element in the rise of *Just-in-Time Production*. Such advances have allowed factories to be redesigned along the continuous flow lines required by JIT. Suppliers' computers are increasingly linked electronically to their customers' computers, and electronic order processing is commonplace. But, if JIT has been made possible by technological change, the demand for it also reflects a major change in market conditions. Large corporate customers are increasingly demanding that their suppliers deliver products in continuous, small-order lot sizes—in part to hold down their own inventories and so improve efficiency.

Outsourcing. As part of the process of shedding excess assets and capital to increase their operating efficiency and shareholder value, many U.S. companies also pursued a "refocusing" strategy during the 1980s. Besides selling or spinning off unrelated businesses, another widely practiced method for sharpening corporate focus was the *outsourcing* of previously internal functions. Outsourcing involves a fundamental change in organizational architecture. It reassigns decision rights (and, in many cases, the employees who exercised them) relating to certain

assets from inside the company to another firm. As one example, in 1989 Eastman Kodak sold its mainframe computers to IBM and contracted with IBM to do much of Kodak's data processing for the next ten years. Besides allowing management to focus more of their attention on those internal activities where they have a comparative advantage, outsourcing also enables companies to acquire goods and services from other firms at lower prices by allowing the latter to specialize and achieve economies of scale.

WHY MANAGEMENT INNOVATIONS OFTEN FAIL

As we noted earlier, many companies adopting new management techniques have been less than satisfied with the outcomes. We now explore some possible explanations for this dissatisfaction—and, more generally, for the tendency for successful innovations to rise sharply and then (often just as abruptly) to fall out of favor, thus prompting skeptics to brand them as "fads."

Marketing

One potential explanation focuses on the incentives of purveyors of a given management technique to emphasize expected benefits while understating costs. This is not to suggest that management consultants are less honest or forthright than the rest of us. But because of their interest in promoting their products, consultants are likely, for example, to provide detailed information on companies where their techniques appeared to work and less information on those where the techniques failed. And, having acquired knowledge and experience in addressing a set of specific corporate issues and problems, consultants are understandably less informed about other aspects and concerns of the organization. As we will show later, it is the potential linkages or interdependencies among these sets of problems that can lead to unintended and unwanted consequences when making organizational changes.

16. As defined by Hammer and Champy, reengineering is "the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service, and speed." M. Hammer and J. Champy, *Reengineering the Corporation: A Manifesto for Business Revolution* (Harper Business: New York, 1993), 32.

17. Michael Jensen, "The Modern Industrial Revolution, Exit, and the Failure of Internal Control Systems," *Journal of Finance* (1993). For a shorter, less technical version of the same, see Vol. 6 No. 4 of the *Journal of Applied Corporate Finance* (Winter 1994).

Managers, of course, recognize that consultants have incentives to present an optimistic view of their services. And most managers attempt to adjust for this bias when deciding whether—or to what extent—to implement a consultant's recommendation. But even so, the corporate failure rate in adopting management innovations would be lower if managers had a low-cost, unbiased source of information about the management technique at their disposal.

The demand for management solutions is predictably met by responses from consulting firms, academics, and management gurus. Frequently, a consultant or academic working with a client firm identifies a specific set of problems and recommends a package of changes. Especially if the implementation of the changes appears to improve the operation of the client firm, the consultant naturally wants to identify other potential clients that are in similar circumstances.¹⁸

But, as most managers are well aware, there are good reasons to proceed with caution when contemplating major changes in an organization. As we noted earlier, those companies that have survived in a competitive marketplace tend to be those whose business strategies and architectures are reasonably well-adapted to their business environments. As we also observed, companies in the same or related industries tend to be structured in similar ways, and there are generally sound economic explanations for the prevailing architectures in most industries.

Consultants, however, are less likely to heed this principle. As proponents (and beneficiaries) of change, they are naturally inclined to argue that longstanding practices are inefficient and that performance would be improved by adopting their methods. For example, several recent books on "empowerment" claim that *most* companies have missed opportunities over a long time period by failing to delegate more decision rights to lower-level employees. While this advice clearly makes sense for some firms in some environments (especially if the environment has undergone a fundamental change that requires greater responsiveness by line managers), our analysis suggests that managers should not be too quick to condemn the existing architecture without careful analysis.

Quality is Not "Free." In some instances, management consultants have offered advice that simply defies economic logic. Perhaps the most egregious example is noted quality expert Phillip Crosby's assertion, contained in the title of his 1980 book, that "Quality is Free." On page one Crosby writes, "If you concentrate on making quality certain, you can probably increase your profit by an amount equal to 5 to 10 percent of your sales. That is a lot of money for free... What costs money are the unquality things—all the actions that involve not doing jobs right the first time."¹⁹ Included in Crosby's list of the costs of "not doing things right the first time" are unnecessary or excessive costs associated with prevention of defects (design reviews, supplier evaluations, tool control, preventive maintenance), quality monitoring (prototype tests, receiving inspection and test, packaging inspection), and the costs associated with preventable failures (including the costs of redesign, engineering change order, rework, scrap, product warranty, product liability).

But what does Crosby really mean when he says "Quality is free?" Taken literally, the statement suggests that managers can achieve significant reductions in product failures, and in the costs associated with preventing them, *at no cost to the organization*. But this can't be the intended meaning for, as Crosby surely knows, improving a product's quality clearly requires a major commitment of management time and other corporate resources. Defects must be discovered, and their causes investigated and corrected. Employees must be trained in quality methods—and products may even have to be redesigned. In fact, improving quality can be quite costly.

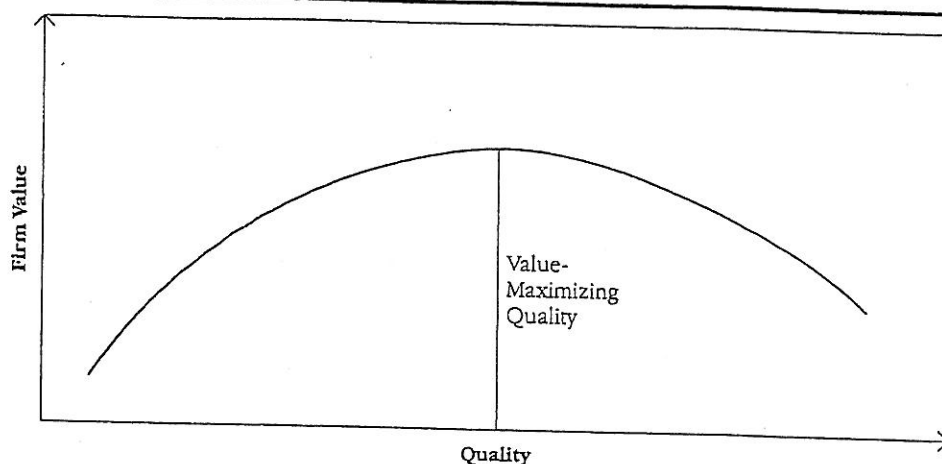
Rather than thinking of quality in Crosby's terms, it makes economic sense to view a TQM initiative as an investment of corporate resources with an uncertain future return in the form of lower costs, higher revenues, or both. Improving product quality usually lowers the cost of reworking defects, inspections, warranty claims, and customer complaints. And, to the extent the firm's brand-name capital is higher when product quality is increased, product revenues will increase. But, given the commitment of resources necessary to achieve such increases in quality, the critical question for top

18. While producing a successful management innovation is difficult, the rewards can be enormous. One challenge potential innovators face is that property rights in management innovations are generally ill defined. Because of this, labels are quite important. Innovators frequently attempt to brand their innovation with

a new term (Reengineering, Benchmarking, Organizational Architecture); good acronyms appear helpful (TQM, ABC, MBO); the Holy Grail in this business appears to be having a new acronym registered (EVA®).

19. P. Crosby, *Quality is Free* (Mentor: New York, 1980), 1.

FIGURE 3
THE RELATION BETWEEN
QUALITY AND FIRM
VALUE*



*Firm value increases as quality increases because consumer demand increases and costs decline. Beyond some point, the cost of increasing quality is greater than the manufacturing cost savings and the increased consumer demand. Maximizing quality does not maximize firm value. Too much quality lowers value.

management becomes: Does the expected rate of return justify the initial and ongoing investment, including the management effort and other costs associated with changing the organization?²⁰ Crosby effectively assumes that the answer to this question—for all companies, as far as we can tell—is yes. We are unconvinced.

The assertion that “quality is free” also obscures the reality that it typically requires larger investments of corporate resources to attain higher levels of quality—and that, at some point, most (if not all) companies face diminishing marginal returns from further investments in quality programs. This is turn implies that there is generally an “optimal,” or value-maximizing, level of quality.

Figure 3 illustrates the relation between quality and firm value. At relatively low levels of quality (where the curve is rising), increases in quality lead to increases in firm value in two ways: by reducing production, inspection, and warranty costs and by increasing consumer demand for (and perhaps the prices commanded by) the products. But, at some point (represented by the top of the curve), the returns to further investment in quality-increasing measures fall below acceptable levels. Ultimately, it is the company’s customers who must pay for the cost of the enhanced quality. For example, the wine lists at many restaurants contain a wide selection

with a range of prices; but though the quality of the highest-priced wines is presumably commensurate with their prices, few diners seem to place enough value on the higher quality of the \$275 bottle to prefer it to the \$20 house wine. At some point, the costs of making additional improvements in quality will exceed the premium customers are willing to pay (along with any further production cost savings). Profit-maximizing managers will want to undertake only those quality improvements where the benefits from enhanced quality exceed the costs of improving quality.

Perhaps one way to make sense of Crosby’s statement is to argue that some managers systematically underestimate the total costs of poor quality. For example, some companies may place too much emphasis on short-term financial measures. Or, if managers are about to retire, they may be reluctant to spend money today on quality programs that yield benefits after they retire. But this is just the standard “time horizon” problem that confronts all decisions where the expected benefits of present outlays span several periods. In this sense, quality programs are no different from capital investment, R&D, and advertising. Successful firms find ways to control these horizon problems.

An alternative explanation is that some managers underestimate the costs of low quality out of

20. P. Lederer and S. Rhee, “Economics of Total Quality Management,” *Journal of Operations Management* 12, (1995), 353-367.

ignorance. Those managers who fail to appreciate the costs of reduced consumer confidence in their products will underestimate the benefits of reducing defects and so underinvest in programs to improve quality. In cases where such myopic behavior is common, companies might benefit from educational programs focused on the importance of quality.

But regardless of whether underinvestment in quality can be attributed to ignorance or distorted incentives, quality still is not free. Decisions to improve quality, like all corporate investment decisions, require accurate estimates of all the expected costs and benefits. It is just as dangerous to underestimate the costs of quality programs by arguing "quality is free" as it is to underestimate the benefits. As many companies have likely discovered, overinvestment in programs designed to increase quality can end up destroying as much shareholder value as underinvestment. Management's job is to find the *value-maximizing* amount of quality—neither too much nor too little—based on its markets and internal capabilities.

Underestimating the Cost of Change

Another important reason TQM and other management innovations can prove ineffective is that some managers underestimate the costs of change. As we saw earlier, changes in market conditions, technology, or government regulation can affect optimal architecture. But organizational change is by no means a costless process. In evaluating the merits of an organizational restructuring, it is important to assess the costs as well as the benefits.

First, there are direct costs. The new architecture has to be designed and communicated to employees throughout the company. Moreover, changes in reporting structures and performance-measurement systems frequently require costly changes in the firm's accounting and information systems. Often what appears to be a straightforward change in the performance-evaluation system is a major and costly project for the firm's data-processing and accounting departments. Literally hundreds of computer programs might have to be changed to alter the accounting and information systems.

Second, and perhaps more important, are indirect costs. Changes in architecture are likely to affect some employees positively (for example, by increasing their responsibility and possibilities for rewards) and other employees negatively. Thus, the attitudes toward change are likely to vary among employees. Dealing with the morale problems associated with change can be expensive. In addition, frequent changes in architecture can have undesirable incentive effects. Increasing the likelihood that workers will change assignments in the near future reduces their incentives to invest in learning new job assignments, devising more efficient production processes, and developing relations with co-workers. Frequent restructuring within a firm can cause uncertainty about job assignments and promote actions that focus more on short-run payoffs and less on long-run investments.

Failure to Consider Other Legs of the Stool

Perhaps the most important reason management innovations often fail, however, is their tendency to focus on just one (or, in some cases, two) of the three important components of organizational architecture. In Figure 4 we list a set of popular management techniques along with their primary focus.

For example, let's go back to the case of TQM. As shown in Figure 4, TQM programs typically change both decision rights and performance measures, while leaving the reward system largely unchanged. And this appears to be by design. Echoing quality guru Edward Deming's well-known disdain for financial incentives, Crosby argues: "People really don't work for money. They go to work for it, but once the salary has been established, their concern is appreciation. Recognize their contribution publicly and noisily, but don't demean them by applying a price tag to everything."²¹

We would suggest otherwise. In pushing decision rights down to the people with the knowledge about processes and customer preferences, companies ought to use the reward system to reinforce the new performance-evaluation system.²² Nevertheless, a 1992 study by the American Quality Foundation and Ernst & Young found that, in 80 percent of

21. Crosby, p. 218.

22. See K. Wruck and M. Jensen, "Science, Specific Knowledge, and Total Quality Management," *Journal of Accounting and Economics*, Vol. 18 (1994). See

also the shorter version of the same article that appears at the beginning of this issue of *Journal of Applied Corporate Finance*, Vol. 10 No. 2 (Summer 1997).

FIGURE 4
PRIMARY FOCUS OF
VARIOUS MANAGEMENT
TECHNIQUES

	Assignment of Decision Rights	Performance Evaluation	Reward System
Total Quality Management	X	X	
Reengineering	X		
Outsourcing	X		
Just-In-Time Production	X		
Quality Circles	X	X	
Benchmarking*	X	X	X
Activity-Based Costing		X	
Economic Value Added		X	X
Empowerment	X		
Self-Directed Teams	X	X	
Venturing	X		
Incentive Compensation			X
Cycle-Time Reduction	X		
Strategic Alliances	X		
Management By Objectives		X	
360° Performance Reviews		X	
Matrix Organizations	X	X	

*Any aspect can be benchmarked. Therefore, benchmarking can be applied to all parts of the organization's architecture. However, in practice firms often only benchmark one facet of the organization.

the firms surveyed, quality performance measures were *not* important variables in determining senior manager's compensation.²³

Critics of incentive compensation like Crosby argue that pay-for-performance does not work because it ends up rewarding people for doing the wrong things. And such critics may be right, in the sense that a poorly designed compensation system can indeed lead to counterproductive behavior. But Crosby's argument alone is not sufficient reason to conclude that incentive pay should be discarded. Monetary and nonmonetary incentives are not mutually exclusive, and employees clearly value both types of rewards.²⁴ Linking financial incentives to the new performance measures reinforces the desired changes in behavior.

Reengineering and the Corporate Reward System. A similar criticism can be directed toward many Reengineering programs. As suggested in Figure 4, Reengineering focuses almost exclusively on a single leg of the three-legged stool: the reassignment of decision rights. Most advocates of reengineering pay lipservice to the importance of

the performance-evaluation and reward systems, but offer little guidance—and, in some cases, inappropriate advice—for how the evaluation and reward systems must change. For example, the best-known advocates of Reengineering, Hammer and Champy, are content to provide only the following advice: "Substantial rewards for outstanding performance take the form of bonuses, not pay raises."²⁵ But, clearly, the compensation decision is far more critical to the outcome than Hammer and Champy's treatment would suggest.

For example, one important part of corporate performance-reward systems is promotions. By creating smaller, flatter organizations, reengineering typically has the effect of reducing advancement opportunities. But most reengineering articles are silent about how to create new career paths and promotion systems to motivate individuals in a process-oriented organization. As in the case of TQM, to increase the chances that reengineering efforts will succeed, significant managerial thought and effort must be focused on "reengineering" the performance-evaluation and reward systems.

23. R. Jacob, "TQM: More than a Dying Fad?" *Fortune* (October 8, 1993), 68.

24. G. Baker, M. Jensen, and K. Murphy "Compensation and Incentives: Practice and Theory." *Journal of Finance* (1988), 593-616.

25. Hammer and Champy (1993), 73.

Can EVA Be Taken Too Far? On the other hand, an exclusive concern with performance evaluation and rewards can also cause problems. Take the case of Economic Value Added, or EVA, which attempts to make the economist's measure of "residual income" the basis for incentive compensation for not only senior management and operating heads, but in some cases for rewards that extend "all the way down to the shop floor." This kind of prescription could backfire because of its failure to take into account the limited decision rights (and risk-bearing capacity) of lower-level employees. Employees with little control over the factors that drive their business unit's EVA may not find much motivation—and, in fact, may be subjected to excessive risk—by such an evaluation and reward system.

The Shortcomings of ABC. As one final example, let's use the organizational architecture framework to explore why the practical achievements of another innovation listed in Exhibit 4 have fallen well short of some managers' expectations. In the late 1980s and early 1990s a new accounting system, "Activity-Based Costing" appeared to great acclaim. An article in *Fortune* magazine declared, "Trim waste! Improve service! Increase productivity! But it does all that—and more."²⁶

How does ABC work? Under traditional accounting systems, the overhead costs of common resources are allocated to products or lines of business using very simple formulas such as percentage of direct labor or percentage of total revenue. For example, suppose both riding and walk-behind lawn mowers are produced in the same plant and both models use common resources. In calculating the accounting costs of the mowers, the plant's overhead costs are allocated to mowers based on the percentage of direct labor charged to each mower. And, since direct labor may well be a very unreliable indicator of how much manufacturing overhead a given operation really consumes, the traditional system might misrepresent costs. For example, in the case of more complicated products involving little direct labor but lots of more specialized overhead resources, the costs of these products will be understated and managers using such costs to guide pricing decisions may charge too little for them.

Under ABC, different categories of overhead such as purchasing, engineering, and inspection are assigned to products based on the underlying "cost-drivers" of that overhead department. For example, purchasing department costs are allocated to different products based on the quantity of purchase orders issued or the number of different parts purchased for each product. By so doing, ABC is said to provide a more accurate estimate of a product's real costs and, hence, a more reliable basis for decision making than the traditional numbers.

But, for all its theoretical appeal, the promise of ABC has largely failed to materialize. While many companies have investigated ABC systems and conducted pilot studies, few have abandoned their older, simpler, cost-allocation schemes. Although some firms use the ABC-based numbers for special studies, they continue to base performance evaluation on their traditional accounting systems.²⁷

One important reason ABC is not replacing traditional accounting systems for purposes of performance evaluation goes back to the old admonition against giving control of the accounting system to the people being monitored by the accounting system. ABC systems typically must be designed by operating managers because they are the people with the most knowledge of the overhead cost-drivers. Yet these are the very same people whose performance the ABC measures are intended to judge.

But, it's not just the opportunity it provides operating managers for self-enrichment that makes most companies reluctant to adopt ABC for performance evaluation. It's the internal turmoil that such changes are likely to unleash—a turmoil that economists refer to as "influence costs." Altering accounting cost allocations creates "winners" and "losers" in the process, and people can be counted on to struggle mightily to ensure that they are among the winners. And the fact that a good deal of subjective judgment goes into determining these ABC measures means that the internal battles are likely to be long and costly.

As an example of influence costs, one firm implemented and then abandoned activity-based costing after a year. The controller explained that

26. T. P. Paré, "A New Tool for Managing Costs," *Fortune* (June 14, 1993), 124-129.

27. See A. Sullivan and K. Smith, "What Is Really Happening to Cost Management Systems in U.S. Manufacturing," *Review of Business Studies* (1993), pp. 51-68. R. Cooper, R. Kaplan, L. Maisel, E. Morrissey, and R. Oehm, "From ABC

to ABM," *Management Accounting* (November 1992), pp. 54-57, and *Cost Management Update*, newsletter published by the Cost Management Group of the National Association of Accountants, Inc. (January 1991).

under the old system, with just a few cost drivers, everyone understood the weaknesses of the system and accepted its faults. With the new system, managers were constantly arguing over the appropriate cost drivers because switching cost drivers changed product costs and the managers' performance measures. Valuable management and employee time was being consumed debating the merits of particular cost drivers. To put an end to the bickering, the controller abandoned ABC.

Because ABC changes product costs and hence product-line profits, successful implementation of ABC throughout the firm requires that new profit targets be established for managers with profit responsibility. To minimize influence costs, the new profit targets should attempt to eliminate any wind-fall gains and losses for these managers arising from the change to ABC. This requires detailed changes in the compensation plans.

ABC and Business Strategy

While ABC strives to produce more accurate product costs—a laudable goal—obtaining and using more accurate product costs could actually work against the firm's business strategy. For example, suppose a firm is unionized, and reducing labor content is part of its business strategy. Changing the overhead allocation base from direct labor to, say, number of different parts in the product will weaken managers' incentives to reduce labor content by effectively lowering the implicit tax on labor because overheads are no longer allocated on the basis on direct labor content.

Take the case of Hitachi, a large Japanese electronics producer, which manufactures VCRs in one of its plants. Even though this plant is highly automated, and the managers know that direct labor does not reflect the cause-and-effect relation between overhead and the overhead cost drivers, Hitachi continues to allocate overhead based on direct labor to reinforce the managers' commitment to further automation. Taxing direct labor through conventional cost accounting is one way to accomplish this aim, thereby lowering production costs.²⁸

Thus, one of the main reasons ABC has failed to achieve widespread adoption is that it changes only

one of the three legs of the firm's organizational architecture—the performance-evaluation system. Without complementary changes in decision rights assignments and performance rewards (such as establishing new profit targets in compensation plans), there is no reason to believe that firm performance will be enhanced.

MANAGING CHANGES IN ARCHITECTURES

Our point in insisting that changes in architecture be coordinated is not to insist that all facets of the firm's architecture be changed simultaneously. Rather, we argue the importance of understanding the entire set of policies that require changing and to have a plan for implementing that set of changes. An effective plan for implementing a major reorganization will often specify that changes be accomplished sequentially—perhaps in stages—rather than all at once.

Maybe an analogy will help. Watch a good golf pro giving lessons. The pro knows that there are 30 different things that have to come together to hit a perfect shot. (A short list includes grip, stance, takeaway, position at top, swing plane, release, tempo, and follow-through.) After watching a new pupil hit a few balls, the pro recognizes at least a dozen things that are not quite right. But rather than tell the duffer to think about a dozen things at once, a good pro will identify the major problem and focus the pupil's attention on fixing that one aspect of the swing. In future lessons, the other problems with the swing will be addressed. The pro knows that asking someone to think about too many things at once makes it almost impossible to hit the ball. Thus, to produce a better swing, the pro plans a sequence of lessons that, over time, will correct the problems.

Fostering major change within an organization frequently takes the same tack. Telling employees that everything is going to be changed creates uncertainty, anxiety, and confusion—productivity suffers. Senior management does not have enough resources to oversee changes in everything. Identifying the organization's major problem and focusing employees' attention on changing that facet of the organization is difficult enough. After that change is digested, additional complementary changes can be instituted.

28. T. Hiromoto, "Another Hidden Edge—Japanese Management Accounting," *Harvard Business Review*, July-August 1988.

The persistence of management innovations suggests they serve some useful purpose. The latest management "technique" can provide a mechanism for focusing the culture on implementing changes, thus giving senior managers a special opportunity for entertaining major changes in strategy and architecture.

Sequencing Organization Changes at GM

Choosing the appropriate sequence for implementing organizational changes can be quite important; costly problems can arise if this is not done well. Consider the case of General Motors in their attempts to implement additional outsourcing after adopting "Just-In-Time" inventory policies. When GM announced that it was planning to outsource more of its activities, workers at their Dayton brake plant went out on strike. Because of its JIT program, within a week, GM auto production throughout North America was severely curtailed. The walkout by this local's 3000 members idled over 43,000 GM workers and closed 12 assembly plants.

In effect, the JIT program had significantly increased the local union's bargaining power. Under its old policy, GM would have had an inventory of brakes sufficient to meet production demands for several months, thus giving the company more time to negotiate without affecting overall auto production.

This view of the process of organizational change suggests that senior managers should understand their basic business environment and have a good sense of the kinds of organizational changes that are needed to enhance performance. To help form a better sense of the entire set of changes, senior management frequently retains a consulting firm for assistance. But, again, it is important to recognize that consulting firms naturally specialize in specific problems and techniques. And, while management may benefit from the specific knowledge and experience of such specialists in implementing particular types of organizational change, there may be costly problems that stem from consulting firms' lack of experience in dealing with issues outside their area of expertise.

CONCLUSIONS

In reviewing the business literature over the past 30 years, we find a continuous stream of articles decrying then current management fads. Here are two samples from the 1970s:

Companies have developed many special devices to meet specific needs in their executive compensation plans. But other companies, wishing to be up to date, have indiscriminately put these devices in their own plans. The results have been—to say the least—embarrassing. The fads include: see-saw options, split-dollar insurance...²⁹

Perhaps the greatest time waste of all is the casting about after fads in Organizational Development, such as constantly jumping on the bandwagons and mindlessly switching from T Group to Team Building, Transactional Analysis, Gestalt Approaches, etc.³⁰

Or consider the recent article:

If a manager achieves success, the world comes asking for the key to that success. Organization after organization embraces the latest management fads, of which there certainly are no shortage... Total Quality Management (TQM), like so many other elixirs, did not fail for companies because the idea was bad. TQM failed because managers dealt with it superficially.³¹

These articles all argue in one way or another that uncritical adoption of the managerial innovation *du jour* is a prescription for disaster. Yet new management tools are continually being introduced and adopted. We believe it is helpful to understand the market for management innovations in order to make reasoned decisions about whether your firm will benefit from the new management tool.

As we have argued in this paper, organizational architecture provides a useful framework for addressing management problems throughout the organization. In many cases, a problem can be traced directly to critical misalignments of the three key components: decision rights, performance evaluation, and incentive compensation. When analyzing business problems and challenges, managers often find it useful to ask themselves the following set of questions:

- Does our existing business strategy fit the business environment (technology, market conditions and regulation) and the capabilities of our firm?

29. D. Thomsen, "Executive Compensation Gimmicks: Look Out!" *Financial Executive* (August 1973) pp. 58-66.

30. T. Patten, "Time for Organizational Development," *Personnel* (Mar./Apr. 1977), pp. 26-33.

31. G. Shelley, "The Search for the Universal Management Elixir," *Business Quarterly* (Summer 1996), pp. 11-13.

- What are the key features of our current architecture? And does our architecture fit our business environment and strategy?
- Are the "three legs of the stool" mutually consistent? Given the decision-right system, does the control system fit and vice versa?
- If the answers to any of the previous questions suggest a problem, what changes in strategy and architecture should the firm consider?
- What problems will our firm face in implementing these changes?

It is important to recognize that these policy choices represent difficult organizational decisions. There is limited public data on these internal organizational policies across firms, in part because this information is not easy to summarize and aggregate. Finally, the interrelations among the various dimensions of the problem imply that these policy choices are inherently complex. When making such decisions, managers' information costs are high and errors can be large. Thus, it is important to remember Yogi Berra's observation: "You got to be careful if you don't know where you're going, because you might not get there." We believe that the organizational architecture framework can help managers by giving them a better sense of "where they're going" and so helps ensure that they will in fact "get there."

The following managerial implications should help you better address two critical questions: Should my firm adopt a proposed management technique? And, if we do, what can be done to increase the probability of success?

The Market for Management Fads. For all their fad-like behavior, the persistence of management innovations suggests they serve some useful purpose; the benefits of such innovations, at least on average, must exceed the costs. Once successful, growing firms can suddenly find themselves unable to compete effectively. The external environment changes—say, because of technological advances or global competition—and these changes make the firm's current strategy and organizational architecture obsolete. Changes must be made if the firm is to survive and prosper.

But, because changing corporate cultures can be very difficult, some external change agent is often useful. The latest management "technique" can prove a useful mechanism for focusing the culture on implementing changes. In this sense, the current innovation can be seen as providing senior manag-

ers with a special opportunity for entertaining major changes in strategy and architecture.

Consider All Three Legs of the Stool. At any point in time, a set of prominent management techniques are touted as the key to success. In the 1990s, popular techniques have included reengineering, benchmarking, total quality management, broadbanding, worker empowerment, and skill-based pay. Most of these techniques involve fundamental changes in organizational architecture. For example, advocates of reengineering recommend changing the delegation of decision rights and task assignments. But, as illustrated in Figure 4, none of these management techniques advocates changing all three components of the firm's organizational architecture. If one leg of the stool is out of balance, it would seem that all three no longer fit the firm's business strategy, and hence all three should be changed.

One Size Doesn't Fit All. Not all firms will benefit from outsourcing, improving quality, benchmarking, or empowerment. Just because a particular management technique improved value for one firm doesn't make it right for all. Management techniques tend to target one aspect of business strategy or organizational architecture (decision rights assignment, performance rewards, or performance evaluation), while slighting the others. Of course, only those firms whose current strategy and architecture no longer fit should consider major changes. And, if management does decide to make a change in one aspect of the organization, then it should anticipate the effects of such change on other aspects and plan the implementation of complementary adjustments necessary to accommodate such change.

Don't Bite Off More Than You Can Chew. Arguing that it is important to consider all three legs of the stool in designing an appropriate architecture does not imply that all changes must be put in place at once. Changing too many aspects of the firm can be difficult to digest, and productivity can suffer. Senior managers need to understand their environment, formulate strategy, and have a plan for implementing the set of required changes.

If It Ain't Broke Don't Fix It. Adopting the most recent innovation or fad can get a firm in trouble unless the change is warranted by the actual circumstances facing the firm. Unfortunately, many firms appear to adopt changes without careful analysis of the relevant costs and benefits. Figure 2 describes the interrelations among the

firm's external environment, its business strategy, organizational architecture, and firm value. If the external environment has changed sufficiently to require changes in the firm's business strategy,

then it is likely that the organizational architecture requires adjustment. But if the firm is successful, then massive changes in corporate strategy or organizational architecture are likely to be unwise.

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