A Powerful Tool for Diagnosis and Strategy

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Consultants and managers today face an explosion of powerful techniques and strategies. Business process reengineering (BPR), financial restructuring, total quality management (TQM), just-in-time manufacturing (JIT), leveraged buyouts (LBO), downsizing, repositioning, and other techniques can all contribute to a healthy company. But a senior consultant knows that each can be destructive if used by the wrong company or in the wrong way. How can we train young consultants in state-of-the-art knowledge to diagnose which firms will benefit from which techniques?

Our business school at the University of California at Davis teaches young consultants that their task is similar to that of a physician doing a “checkup”: examine any symptoms, rule out other diagnoses, and come up with a recommended treatment. Physicians use flowcharts (Collins, 1995) to codify their increasingly complex field, and we do the same in state-of-the-art flowcharts.

All MBA students at our school are required to form consulting teams that complete a high-level consulting project for a firm. To help the students, professional consultants sometimes lecture on how to diagnose and intervene in companies. One partner from Booz•Allen & Hamilton displayed a three-branch flowchart he used to diagnose companies. Students found it helpful, so we have expanded it over the years to integrate more business functions and more popular management techniques (see Table 1).

The flowcharts now include the research and recommendations of major strategy consultants such as Bain and Company, the Strategic Planning Institute, Coopers & Lybrand, Michael Porter of Harvard Business School, National Science Foundation studies, Boston Consulting Group, and Booz•Allen & Hamilton. It is our best summary of the “state of the art.”

We first present the master flowchart that begins every diagnosis. Then we present functional-area flowcharts for diagnosing problems in cost control, financial restructuring, marketing, and industry expansion. Our final section examines “people problems” that often arise during diagnosis.

Table 1: List of Popular Management Techniques Introduced Since 1960 and Included in State-of-the-Art Flowcharts.

<table>
<thead>
<tr>
<th>Year</th>
<th>Technique</th>
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<tbody>
<tr>
<td>1960s</td>
<td>Decision trees, critical path scheduling, conglomeration, zero-based budgeting, management by objectives.</td>
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<tr>
<td>1970s</td>
<td>Strategic business units, experience curves, portfolio management, materials resource planning, diversification, matrix organization, product repositioning.</td>
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<tr>
<td>1990s</td>
<td>Business process reengineering, quality functional deployment, outsourcing, gainsharing, core competencies, time-based competition, learning organization.</td>
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The Master Flowchart

The Master Flowchart (Figure 1) performs broad, initial diagnosis to determine which of the other flowcharts should be entered. This flowchart starts with the overall profits of the firm, and breaks this down into its component parts to find which functional area needs deeper attention. It first breaks down profitability using the classic definition of the components of a firm’s return on investment (ROI):

\[
\text{ROI} = \frac{(\text{revenue} - \text{costs})}{\text{total investment}}
\]

This is helpful to diagnose which of the major drivers (revenue, costs, or investment) is out of line with industry norms and the firm’s past performance. So far, the flowchart is similar to the traditional “Du Pont” analysis of financial ratios. But our flowchart then goes beyond this typical financial analysis into marketing and industry analysis. It decomposes revenue into its major drivers:

\[
\text{Revenue} = [\text{industry sales} \times \text{market share}] \times \text{price}
\]

This classic equation from marketing points out that revenue problems may be due to low industry sales, market share, or price. Depending on which of the profit-drivers are out of line, different specialized flowcharts are entered to further diagnose the problem and recommend solutions. For example, if low ROI is traced to declining revenue, and the source of that problem is found to be declining market share, then the consultant needs to bring marketing skills and tactics to the fore, and the flowchart on marketing problems (Figure 4) is entered. In a different company, if profits are stable but total investment has been rising, then the consultant needs to bring the skills of financial restructuring to the table, and follows the flowchart on financial restructuring (Figure 3).

Each business-area flowchart diagnoses problems and suggests treatment techniques recommended by consultants and researchers for that diagnosis.

The Cost Control Flowchart

The Cost Control Flowchart is shown in Figure 2. It shows five possible explanations for costs that are too high: cost of materials from suppliers; direct cost of own labor; fixed costs in sales and marketing, R&D, or general and administrative categories. Strategies to reduce each follow.

Strategies to reduce supplier costs

In the case of high supplier costs, strategies include:

1. Developing quality- and cost-improvement programs with suppliers.
2. Qualifying other suppliers (including offshore competitors) in order to increase competition among them.

Ford realized in the 1980s that their ROI (in Figure 1) was lower than Japanese competitors.

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and that their costs were a major driver. Going to Figure 2, they further knew that their supplier costs were a large component of their total costs (they outsourced 50 percent of their parts, while GM outsourced only 15 percent). Hence, they developed their famous “Q1 program” to work closely with suppliers who were willing to be trained in quality and cost control. Ford used this to create some of the highest-quality U.S.-made autos, including the Taurus. Their cost structure is now far lower than GM’s, even though GM is more vertically integrated.

Strategies to reduce own direct costs
In the case of high direct costs within the firm, strategies recommended are:

1. Using business process reengineering (BPR). BPR has been the corporate method of choice in the early 1990s. It applies quality program principles but emphasizes that business processes must be redefined and simplified before quality principles can be applied. Carr and Johansson (1995) of Coopers & Lybrand present research to show when it aids companies most.

2. Renegotiating labor contracts to allow more flexibility. Contract renegotiation can cause tremendous resistance if the company requests a simple cut in wages, but a more productive negotiating issue is increasing the flexibility of work rules. Japanese management methods at the joint GM/Toyota plant in Fremont, California, achieved stunning turnarounds through more flexible union work rules and the involvement of workers in cost reduction and quality (Adler, 1993). In three years, the plant went from the lowest-quality GM plant, with 2,000 union grievances outstanding, to the highest-quality plant, with only a handful of union grievances. The new contract did not require union-busting or lower wages, but it did require investment in team-building, quality, and openness between management and unions.

3. Using materials resource planning (MRP) to reduce inventory, setup time, and scrapage.

Strategies to reduce sales and marketing costs
When cost of sales and marketing are high, several options are available.

1. Retrenching by focusing only on high-potential segments (niches), such as heavy users or easy-to-service customers.
2. Replacing a personal sales force (the most expensive selling method) with less expensive methods for lower-potential segments.

3. Exploring less expensive channels of distribution. The meteoric growth of Internet selling and of direct mail show how many firms are benefiting from these. Similarly, consumer-banking firms realize that ATM transactions are far less costly than teller transactions, and are now giving customers incentives to use the ATMs.

4. Applying activities-based costing (ABC), which calculates the true cost of product line extensions and additional distribution channels (Johnson and Kaplan, 1987).

For example, one of our MBA consulting teams had as a client a large manufacturer of computer equipment that sold a broad array of gear, from $200 "dumb terminals" to $80,000 workstations. The division selling the terminals had problems with motivating the sales force to sell the low-margin items, and could not afford to increase commissions.

The consulting team recommended that they stop using personal sales calls for the low-margin items. Instead, they successfully instituted a telemarketing sales force to do most sales, occasionally supplemented by a personal sales call.

Strategies for R&D efficiency
R&D staffers will always warn that cutting costs in their department is shortsighted and will endanger future profit. They are right if cost cutting is done across the board, with no effort to focus the remainder. But appropriate focus can increase the efficiency of R&D greatly. Effective strategies include:

1. Focusing R&D on development, not "blue sky" projects, and on the firm's target segments. When breakthroughs occur, the scientist is expected to help shepherd it through the application process, not "throw it over the wall" to applications people. Souder (1987) summarizes a National Science Foundation (U.S.) study of manufacturers for better focusing R&D.

2. Introducing quality functional deployment (QFD). Developed at Toyota, QFD involves forming a product development team from players in R&D, marketing, manufacturing (or
operations), and accounting. Griffin and Hauser (1996) review the method and show when it is most likely to be successful.

Programs to reduce overhead
When high costs get assigned to general and administrative accounts, it is very difficult to trace them to particular products or programs. Nevertheless, several strategies are effective in reducing these costs.

1. Flattening the organization. In the 1980s, GM had 12 layers of management between the “shop floor” and the CEO, whereas Toyota had only 7. Flattening requires a larger span of control for each remaining manager, delegating more responsibility to employees. Hence, teamwork and gainsharing are necessary to motivate the change. GE has used this strategy for 10 years with significant success.

2. Outsourcing noncore functions. Outsourcing noncritical tasks is becoming more common than ever. Quinn and Hilmer (1994) review the strategy and show how a company should invest only in that portion of the value chain where it has a competitive advantage. Hence, a company that excels at designing specialty microprocessors should invest heavily in its R&D arm and stay close to its customers through engineer-salespeople. But it could outsource chip fabrication, where it has no competitive advantage.

The Financial Restructuring Flowchart
Figure 3, the Financial Restructuring Flowchart, shows five possible conditions indicating a need for financial restructuring: low capacity utilization, high nonperforming assets, excess cash, high accounts receivable, and high inventory.

Strategies to increase capacity utilization
When expensive assets such as plant and equipment are not being utilized to the fullest, capital is not used efficiently, and ROI declines. Strategies to increase utilization include:

1. Selling unused capacity. For example, major airlines sell older jets to charter companies or cargo airlines.

2. Using slack time to service “private labels.” Many major manufacturers use their own excess facilities to manufacture “private label” brands. For example some “microbrewery” beers are made by Anheuser-Busch during slack time.

3. Load leveling. Finding ways to reduce peak demand can increase capital efficiency. Electric utilities achieve this through storing energy during off-peak hours.

4. Discounting for “off-peak” purchases. Hotels and airlines have well-known off-peak discounts for those traveling during a resort’s off-season.

5. Increasing overall sales volume. See the marketing flowchart for the strategies to achieve this.

Strategies for reducing nonperforming assets
Other assets may be tying up capital but not achieving a competitive return on their investments. Strategies to consider:

1. Selling leasing back land, offices, or equipment. Selling assets to a company more expert in asset management may be more efficient than owning them. It may also generate tax advantages.

2. Spinning off failed acquisitions. Most of the top corporations have made some acquisitions where predicted synergies fail to materialize. Once a failure is recognized, the unit should be sold quickly (Porter, 1984).

3. Spinning off vertically integrated units. Coca-Cola found that their bottling operations were capital intensive and low margin. So in 1983, they spun them off to shareholders as Coca-Cola Enterprises. They retained only the high-margin concentrate part of the business.

Strategies for using extra cash
Extra cash is inefficient use of capital. Worse, it provides a temptation to corporate raiders. Businesses might explore:

1. Buying back stock. Many firms have recently developed a cash hoard. They have looked for opportunities to invest with a good return and have decided the best was their own business. Stock buyback also increases return to the shareholders of remaining shares.

2. Increasing vertical integration. The Strategic Planning Institute (SPI) (Buzzell and Gale,
1987) shows that firms can succeed with careful vertical integration but they recommend caution because it is difficult to improve profitability by vertical integration. While managers tend to focus on the higher return on sales that integrated firms generate, they tend to forget about the higher total investment required. SPI suggests that many advantages of vertical integration can be obtained by strategic alliances.

3. Acquiring another business consistent with strategy. This may include geographic expansion. Or it may include buying a firm that has proprietary skills or complementary products. For example, many pharmaceutical giants have used extra cash to buy start-ups in recombinant DNA technology. They expect synergy between the start-up’s technological breakthroughs and their own expertise in manufacturing and marketing.

**Figure 4 MARKETING FLOWCHART**

**Strategies to reduce working capital in accounts receivable**

The capital-appropriation committee of most corporations goes over capital requests for plant and equipment very carefully, but they often ignore increases in working capital, perhaps because it happens more slowly and is less concrete. Hence, consultants can often find inefficiencies here. Strategies to reduce capital tied up in accounts receivable include:

1. Providing leaner credit. This is the simple solution, where the CFO simply dictates higher credit standards or faster payment requirements to reduce bad debts. But this strategy should be cross-checked in the marketing flowchart to determine the extent of lost customers and market share.

2. Factoring receivables. Many banks and finance companies offer cash for receivables, less a discount for bad loans and interest.

3. Setting up a dedicated finance business. Corporations with multiple businesses may benefit from setting up their own financing arm. For example, GE has developed one of the largest financing companies in the world in GE Capital Corp.

**Strategies to reduce working capital in inventory**

Marketing executives exert pressure to increase finished-goods inventory to reduce delivery time, and manufacturing executives exert pressure to increase raw materials and parts inventory to reduce lag time. But they must be aware that these cost working capital. Ways to avoid the costs are:

1. Implementing just-in-time inventory systems. This strategy was pioneered by Japanese auto companies, who were able to reduce their capital intensity below those of U.S. manufacturers. It requires far more integration and teamwork than traditional U.S. methods (Cheng and Podolsky, 1993). For example, Toyota did away with inspection of autos bound for the U.S. until the cars were on the ship under way to the U.S. The inspectors were placed aboard the vessels to reduce finished-goods inventory.

2. Getting channel members to carry more inventory.
3. Using paperless ordering systems. Recently, GM introduced a huge electronic ordering system to its 8,500 dealers. It allows ordering from the factory in just seconds, reduces time on paperwork by 30 percent, and can locate any auto in stock in the U.S. within seconds.

Marketing Flowchart

In many companies, the reason for falling revenue is falling market share. The Marketing Flowchart (Figure 4) allows a consultant to pinpoint marketing problems and to recommend corrective strategies. The diagnostic steps follow the stages of the buying process, where customers must be moved from “knowledge” to “trial” to “repurchase” of the product. The steps are purposely sequenced to move from less costly and less risky, to more costly and more risky marketing strategies. The flowchart is a do-loop, meaning that the diagnosis must be repeated for each segment in the market.

Strategies for increasing a segment’s purchase volume
At the first level of Figure 4, the segment’s repeat-purchase rate (sometimes termed customer loyalty) is evaluated. Bain and Company (Reichheld, 1996) identified this as the most important factor in predicting profitability of financial and service companies. If repeat-purchase is already high, then the consultant can avoid the deeper, more costly steps in the flowchart for this segment, and the only action that need be taken is to increase their volume by:
1. Introducing new uses. For example, Arm & Hammer found a new use for baking soda as a refrigerator deodorizer.
2. Increasing frequency of use. Duracell reminds consumers to replace batteries in their smoke alarms.

Strategies for increasing repurchase rate
At the next level of Figure 4, the segment’s trial rate is evaluated. If a large percentage has tried the brand and liked it, then the consultant need go no deeper into the flowchart, and marketing’s job is easy: it need only increase repurchase rate of a brand that people already like. Programs to achieve this are:
1. Improving availability of the brand.
2. Employing channel-push programs.

For example, Pepsi had achieved a very high trial rate, and blind taste tests had shown that many segments (especially youth) preferred Pepsi over Coke. Yet Coke had achieved higher market share for many years because it had better availability: twice as many vending machines, and many more fountain contracts than Pepsi.

Strategies for increasing trial rate
Here, the segment’s preference rate is evaluated. If a test group of customers prefer your brand, but most in the segment have never tried it, marketing tactics can help through: (1) sampling, (2) demonstrations, (3) coupons, and (4) point-of-purchase displays. Standard marketing texts explain these tactics.

Strategies for increasing knowledge
Next in Figure 4, the segment’s knowledge of the brand is evaluated. Particularly when new products or companies enter a market, knowledge is low and consumers need to be informed of the unique benefits of the brand. Classic marketing programs to achieve this are: (1) advertising, (2) public relations, (3) sales force training, (4) channel training, and (5) changing ad agencies.

One of our consulting teams worked for a nonprofit client. The organization operated a dormitory-style resort in the mountains, which could be used for skiing, hiking, and conferences, at very low prices. Yet revenues were low. After using Figure 4 to evaluate trial, preference, and knowledge among potential users, it was found that preference was high but knowledge and trial were low. Conclusion: all it needed was advertising to increase knowledge of its availability. This diagnosis was acted on and resulted in substantial increase in revenue.

Strategies for repositioning a brand
At this level in Figure 4, new attributes on which the brand can excel are searched. This exercise in repositioning a brand is not as easy to diagnose as the steps above, and requires some of the creativity for which marketing people are prized.
For example, Ries and Trout (1986) immortalized their client Long Island Bank (LIB) (New York State) by repositioning it. LIB was losing market share to the big banks from Manhattan, who were far larger in amount of capital, name recognition, and full banking services. But Ries and Trout exploited a latent attribute—that LIB was local to Long Island, and helped local businesses and residents more than the “big, cold, off-island banks.” Their surveys showed that after the repositioning campaign, consumers increased the importance they placed on banks being local, and consumers even rated LIB more favorably on all other attributes as well.

**Strategies for new product development**

If the flowchart rules out all of the above steps, actions that require high risk, more time, and more investment are needed—the product or service must be redesigned. Urban and Hauser (1995) review best practices in the area of new product development.

### Industry Expansion Flowchart

The highest-level strategies that companies must consider are depicted in Figure 5. They deal with the most fundamental questions of a business, including “What business are we really in?” “Can we expand the industry to grow faster?” and “How can we protect our success from competitive attacks?”

**Star-business strategies**

If ROI is above par, the basic business is prospering, and further growth can be sought by expanding the industry. SPI gives a list of strategies shown to be successful among 2,500 businesses in the PIMS database. They are: develop more new products, invest in marketing, standardize the product more, invest in R&D, add capacity, and automate to standardize and reduce direct costs. All of these strategies help to increase the number of uses the product has, as well as “upping the ante” to the competition by requiring them to invest further to keep up.

Intel, for example, has been a relentless and very successful competitor in applying these principles. It has achieved control of the microprocessor market by expanding the industry and “upping the ante” with each generation of chips: investing more in capacity and R&D, even rolling out new generations of chips faster. And it has applied the standardization concept to expand into the super-computer industry by linking many of its standard chips into “parallel processors.”

**Industry growth strategies**

When industry sales are declining, trying to increase market share is like improving your view on the Titanic: you’re all going down anyway. So consultants need to think bigger—about how to grow the industry. Ackoff (1981) presents the four classic growth strategies as a 2x2 matrix: present products in present markets, new products in present markets, present products in new markets, and new products in new markets.
1. Ways of growing industry sales with present products in present markets include increasing the frequency of use (e.g., AT&T's "Reach out and touch someone" campaign), increasing the quantity used, and finding new applications.

2. Ways of growing industry sales with new products in present markets include adding a feature to the product, developing a broader product line that offers complementary products or different benefits, and developing a new generation of products that leapfrog the old.

IBM prospered for over sixty years using this strategy. From their first product that sorted punch cards in 1913, they have continually introduced new products that provide more benefits to their present business market, from electric typewriters to electronic computers, in the process expanding industry sales exponentially.

3. Ways of growing industry sales with present products in new markets include expanding internationally, expanding regionally, entering a new distribution channel, and targeting a new segment. For example, General Electric forecasts slow industry growth in the United States and Western Europe of about 2 percent a year. But in developing markets, it expects 20 percent growth per year. It is racing to expand into Eastern Europe (in lighting products) and China (in power generation).

4. Finally, the last suggested strategy is delivering new products to new markets (diversification). However, Porter's (1980) research shows that this method of growth fails to be profitable in the long run. He concludes that when a business diversifies into new customers and new products, it loses its comparative advantages in marketing and technology, and cannot compete successfully.

**Strategies for declining industries**

Some industries are at the end of their life cycle, and cannot be reinvigorated. For these markets, the end-game strategies are appropriate. They are (1) selling the business (a competitor may give you the best price), (2) buying up competitors below book value, or (3) abandoning unprofitable segments.

Harrigan and Porter (1983) show how companies can succeed even in these declining markets. White Industries is a successful example of a firm in the major appliance industry that bought up competitors below book value. GM's Frigidaire, Ford's Philco, AMC's Kelvinator and Westinghouse Appliances had all been unprofitable for years, and in the 1970s were very interested in exiting the business. White stepped in to buy their factories and their brand names below book value, pruned many products, closed older factories, renegotiated labor contracts, and now is the third largest manufacturer of major appliances in the United States.

**Strategies for reducing competitive intensity in an industry**

Porter (1980) terms some industries "unattractive" because of their high competitive intensity. Industries are more intensely competitive when the number of competitors is high, the number of potential entrants is high, the number of substitute technologies is high, the power of customers is high (customers are few and large), and the power of suppliers is high (suppliers are few and large). As each of these factors rises, average profitability of the firms in the industry declines. At the extreme, a firm in an unattractive industry should sell the business immediately.

But if the intensity is not extreme, there are strategies a firm can take that reduce the competitive intensity it must face in an industry (Potter, 1994). These are: (1) encouraging competitors to exit, (2) reducing the power of customers and suppliers, (3) targeting a niche market that is sheltered from competition, (4) legally intervening to reduce competition, or (5) spinning off the business.

For example, one of our student teams worked for a statewide company running a
chain of recreation centers (similar to racquetball clubs). The company was diagnosed as being well run and well positioned but in an intensely competitive and declining industry. They were advised to “become a successful survivor,” to encourage competitors to exit by buying out other clubs below replacement value, prune unprofitable clubs, and install good management and pricing in the others. They successfully implemented this strategy.

“People Issues”

These flowcharts are silent on one important area—“people issues.” For example, teams sometimes suggest techniques from the flowcharts, but the client firm says “We tried that, but it didn’t work.” Then the team must diagnose whether “it didn’t work” because of poor implementation (people problems) or poor strategy. Similarly, teams have often asked for the marketing data needed for diagnosis in Figure 4. Sometimes the VP of Marketing promises to get the data, then repeatedly fails to deliver.

The consulting team must then diagnose whether (1) the organization just doesn’t collect the data, (2) the VP habitually doesn’t follow through on promises, or (3) the VP doesn’t want to help the team for fear of change. Each of these diagnoses would suggest different interventions. We are currently developing diagnostic flowcharts for these important “people issues.” Harrison (1989) has also written diagnostic procedures for this area.

The flowcharts have been quite successful in training young consultants in our business school to quickly recognize symptoms and to learn state-of-the-art solutions. In recent years the consulting industry has expanded quickly, requiring many new hires. These flowcharts are quick and efficient methods for in-house training of young consultants in diagnosis and strategy.

Just as physicians have achieved stunning improvements in health, these flowcharts can help consultants achieve big gains toward healthier companies.

REFERENCES


What are your reactions?

As readers of JMC, many of you are experienced consultants who have already developed effective ways to diagnose the firms you consult to. Some of our flowcharts may be inappropriate for your industry. Or you may have found much more effective ways to diagnose your industry. We would like to know how you diagnose the companies you consult for, so that we can improve and test our flowcharts. Please take the time to e-mail us at mhragery@ucdavis.edu, or write to Michael Hagerty, Graduate School of Management, University of California, Davis, CA 94501 to give us your favorite diagnostic questions and procedures. We will protect any proprietary information by disguising it.

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