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Restating the value of capital light

Investors are hearing that strategies to boost capital efficiency are financial gimmickry that creates no value. That perception is wrong.

Jiri Maly and Robert N. Palter

To hear the media expound on the subject, the main source of trouble for many companies of late has been their so-called asset-light business model. Surprised by the rapid unravelling of the recent economic boom, pundits have taken the axe to any strategy developed by the 1990s whiz kids whom they once lauded and now apparently disdain.

In the case of capital-light—or capital-efficient—models, their critique may be too hasty. It is certainly too sweeping. Acting in the best interests of investors includes structuring and restructuring the balance sheet to squeeze all possible earnings from every dollar of investor capital—and it always has. Focusing the investment of capital on those assets where a company’s expertise lets it earn the best return for investors is simply to be capital efficient. While this strategy carries its own risks and limitations, as does any innovative business approach, for many companies it also creates real value and may be the only alternative to stagnation.

We researched more than a dozen top-performing companies from a wide variety of asset-intensive industries¹ to see how they raise and deploy capital for growth in capital-constrained conditions. We found that many of these purposefully reshape their asset portfolio to support their growth aspirations,

refinancing assets as their role in the company’s business changes.

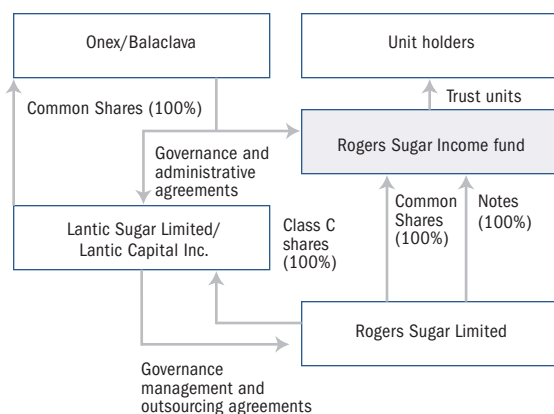
Tried-and-true strategies

Companies that look to their balance sheets for the capital to pursue growth and improve returns are using strategies that are neither particularly new nor surprising.

First, the companies we analyzed focus carefully on the parts of each business where they create the most value, divesting noncore risks, assets, and cash flows to others that can better manage them. The capital so generated can then be reinvested back into the core business and grown organically or through acquisitions.

Consider as illustration the familiar project finance case of Tampa Bay Water Authority. Instead of undertaking the risk of constructing a new water treatment facility, Tampa Bay awarded a turnkey construction contract to a best-in-class construction company. In addition, instead of managing and operating the facility, the authority awarded a 30-year, \$600 million performance-based contract to water systems operator Poseidon. As a result, the cities of Tampa Bay and St. Petersburg were able to develop their new water treatment facility without levying new taxes and actually lowered the cost of water,

Exhibit 1. Ownership structure of Rogers Sugar Income Fund



- RSIF is an open-ended, limited-purpose trust owning 100% of common shares and \$278.3 million in subordinated notes of Rogers Sugar
- RSIF's IPO was accomplished through sale of unsubordinated debentures, all of which have since been redeemed for trust units
- IPO net proceeds of \$382 million used to purchase 41.5 million common shares and \$278.3 million in notes of Rogers Sugar, effectively acquiring ownership of Rogers Sugar
- Lantic Capital retains ownership of Class C shares of Rogers Sugar, allowing it to elect 3 of 5 directors of the company
- Onex/Balaclava, through ownership in Lantic, has an indirect interest in Rogers Sugar through management services contract
- Under terms of the agreement, Lantic is responsible for management of the fund for a fee of \$300,000 per year
- In 2000, \$32 million was distributed to unit holders on sales of \$180 million

Source: Annual reports, press releases

returning nearly \$300 million to consumers over the life of the agreement.

Second, we found that capital-efficient companies adopt tax-advantaged corporate forms like limited partnerships and sale lease-backs to capture cost-of-capital savings and to match investors with tailored risk/return offers. Such tools for transferring risks, assets, and cash flows are much more efficient than traditional leasing contracts and limit the amount of value lost either to taxation or to financial intermediaries.

Finally, they employ tools like contingent capital or hybrid securities to match the form of financing to the specific economic characteristics of the business. Full disclosure of residual liabilities, of course, is critical to protect the interests of all investors.

We also found that although capital-efficient business models do utilize sophisticated financing tools, they are not a form of financial engineering. Unlike financial engineering, capital efficiency creates real value through improved operations, increasing

margins by linking strategy with the optimal asset/risk position, supporting that position with the most efficient capital structure, and using liberated capital to build the core business. This can be done—and is routinely done by many successful companies—transparently and in the best interest of investors.

Case example: Rogers Sugar

In 1997, Canadian buyout firm Onex and a private investor jointly acquired BC Sugar for Cdn\$407 million. With more than 60 percent market share, BC Sugar was the country's largest refiner of sugar in a protected industry with steady and predictable economic characteristics and a good operating track record.

The new owners quickly made a number of management and board changes, followed by a \$40 million capital investment into one business unit, Rogers Sugar, to expand its capacity and reduce operating costs. Onex then effectively divested itself of Rogers Sugar by transferring it to Rogers Sugar Income Fund (RSIF), a special-purpose

entity with similar income tax advantages to a REIT.² It then sold RSIF to investors for Cdn\$382 million. Exhibit 1 outlines the new ownership structure.

Onex retained ownership of what was left of the original BC Sugar business, Lantic Sugar, along with strategic management control of Rogers Sugar, for which it receives an annual fee of \$300,000. It also earns incentive payments tied to cash distributions to RSIF unit holders and holds, through Lantic, a long-term outsourcing agreement with Rogers Sugar for marketing and financial services, earning an annual fee of about \$4 million. At the same time, RSIF unit holders enjoyed a first-year yield on their units of more than 15 percent.

As a result, with a small capital investment and a number of operating improvements, Onex expanded its capacity, improved its operating margins (reducing production costs by 8 percent), lowered its tax liability, and nearly recovered its original investment. By retaining management control of RSIF, Onex also reassured its own investors of the ongoing profitability of the business. RSIF unit holders, in turn, were able to earn a steady and attractive return on their investment.

As this example illustrates, disaggregating assets, cash flows, and risks and transferring them to their natural owners is not a zero-sum game. Instead, while it increases the returns on individual parts of a company's business, it also improves the overall economics for other participants in the transaction by creating powerful incentives for each to maximize returns, leverage unique skills and relationships, and encourage the transparency necessary for investors to fully appreciate the value created.

Although capital-efficient business models do utilize sophisticated financing tools, they are not a form of financial engineering.

Creating real value

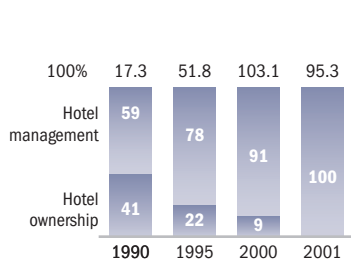
Clearly, the key to successfully moving to a capital-efficient business model is identifying assets, risks, and cash flows by their distinct risk characteristics and then retaining only those that are central to how a company creates value.

An example of this is railcar owner GATX. The company realized in 1996 that it created more value through activities related to railcars such as dispatching, design, and procurement, than it did through actually owning them. So GATX aggressively divested its underperforming assets—including both liquids storage terminals and certain railcar assets—and financed new assets through nonrecourse structures like debt, sale lease-backs, and limited liability partnerships. Focusing on its expertise in fleet management, the company launched a series of web-enabled logistics services that provide real-time reporting of schedules, the calculation of regulatory compliance, remote monitoring of cars, and sourcing of raw materials. The combined impact of this effort was to increase GATX earnings by 13 percent per year over the past five years and generate 21 percent returns to shareholders (annualized)—relatively attractive numbers for an asset-heavy company with limited growth options.

Exhibit 2. Four Seasons focus on management earns superior returns

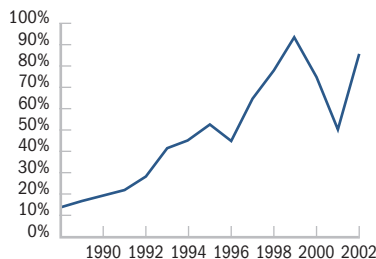
Four Seasons relinquished ownership for greater control . . .

Earnings before operating items
Cdn\$ Millions



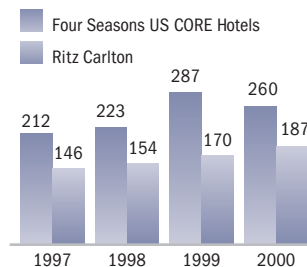
. . . increasing its share price . . .

Share price
Cdn\$



. . . and producing superior hotel operating results

Revenues per available room: Four Seasons vs. Ritz-Carlton



Source: McKinsey analysis

Like GATX, companies that disaggregate assets, risks, and cash flows can create value in a number of ways:

Improving operating margins. When a company narrows the number of assets and risks in its portfolio to the handful where it really creates value, its management team is able to focus its energies and develop deep insight into and expertise in managing core risks. As a result, the team can extract more value from those risks and the economic gain created is significantly greater. For instance, after transferring the ownership of its physical properties to private investors, Four Seasons Management has been able to focus on the critical value drivers for the business, including yield management and the quality of the customer experience. Clearly, Four Seasons also faces certain limitations. Fifty-year contracts with facilities owners restrict its ability to reshape its portfolio of properties over a short period of time. But this may be easily outweighed by the fact that the company, undistracted by many of the ownership issues and problems of traditional hotel chains, is able to earn

\$100 more per room than its closest competitor (Exhibit 2).

Capturing tax advantages. Most countries have tax-advantaged corporate forms like income trusts or limited liability partnerships that enable companies to transfer risk to its natural owners. These corporate forms typically allow companies to remunerate investors and finance capital investments using before-tax revenues, ultimately lowering a company's taxable income and increasing the pool from which investments are made and investors paid. For example, Marriott restructured its business portfolio in 1993 by transferring its properties into a REIT, putting physical property into a trust while retaining the hotel management and operations services. The announcement resulted in a 20 percent appreciation of Marriott's share price.

Reducing cost of capital. When companies transfer risks to more natural owners, their cash flows can become significantly less volatile. Less volatility combined with an optimal capital structure can reduce the cost of financing highly capital-intensive assets. For

example, overall investment risk associated with power plant development has been significantly reduced by securing long-term fuel contracts and power purchase agreements. Using this approach, power plant developer Calpine used forward contracting of its production to reduce market volatility and has been able to raise a \$1 billion revolving credit facility at rates comparable to its balance sheet debt in order to finance additional power projects. Typical project financing costs are 200 to 350 basis points above balance sheet debt.

Realizing fuller asset valuations. Credit and equity analysts have long argued that conglomerates are discounted by 20 to 30 percent relative to net asset value because investors are unable to truly identify the sources of value creation and because investors can assemble a more diversified and efficient portfolio at a lower cost than the management team of a conglomerate can. The reverse is also true. Disaggregating assets and risks into unique packages increases visibility into the true sources of value and risk and allows companies to enjoy a fuller equity valuation.

Today, capital constraints and inadequate management resources limit the growth of many companies. Capital that is liberated from the balance sheet can be used to pursue new opportunities without repeatedly turning to the capital markets for funds. This not only enhances the company's credibility with investors but also allows the company to reduce transaction costs and to move more quickly to capture opportunities. Reducing the complexity and scope of the business also frees up management resources to look for new opportunities that might not be pursued under a more traditional management approach.

Companies must often adopt a new mind-set to make capital efficiency a key part of their business model. Capital-efficient companies typically involve a narrower portfolio of assets and risks that is better aligned with their distinctive capabilities, value creation approach, and strategy. They tend to shape carefully the role that they play relative to the assets that they choose to hold and focus their functional capabilities on narrowly-defined risks where they excel at value creation. That typically means owning (raising capital and shaping portfolios of investments), managing (deploying assets optimally into the marketplace), or operating physical assets—not all three, as is the case in most vertically integrated companies.

This model naturally involves some complications, chief among them the need to manage multiple partnerships with the natural owners to which assets and risks have been transferred. That often includes ongoing negotiations and the uncertainty around what to do when a contract or partnership expires. But, when the strategy is pursued intelligently and competently, the advantages of stronger margins, enhanced brand equity, and privileged access to low cost capital far outweigh such difficulties. **MoF**

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¹ Including electricity, transportation, oil and gas, real estate, hospitality, infrastructure, utility, and packaged goods.

² Real Estate Investment Trust

Measuring alliance performance

Large companies often have dozens of alliances—and little idea how they are performing. Here’s how to evaluate them.

Jim Bamford and David Ernst

As corporations have evolved from command-and-control structures with sharply defined boundaries into loosely-knit organizations, corporate alliances¹ have become central to many business models. Most large companies now have at least 30 alliances, and many have more than 100.

Yet despite the ubiquity of alliances—and the considerable assets and revenues they often involve—very few companies systematically track their performance, creating a substantial risk of negative surprises. We believe that every corporate manager, including CFOs, should be well tuned into the performance of their alliances. In our work with more than 500 companies around the world, we have found that fewer than one in four alliances have adequate performance metrics in place.² As a result, alliances tend to be run by intuition and with incomplete information. Partners may not agree about the progress of their ventures and senior management can’t intervene quickly enough to correct problems. In many companies, 30 to 60 percent of alliances are underperforming—and three to five major deals are in desperate need of restructuring. Unfortunately, management does not really know where the problems lie or how it should best invest its time. To get a better grip on performance, companies must develop a more structured approach to evaluating the health of their alliances. Doing so is not a straightforward task.

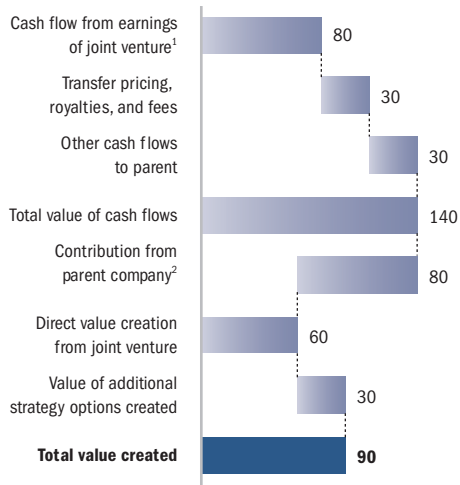
The challenge

Why is alliance performance so hard to measure? The answer can be traced to three characteristics. First, alliances are by definition arrangements between separate companies, each employing its own reporting processes and systems and each pursuing its own goals for the alliance. This makes it hard to agree on a single measure of performance and creates incentives to conceal benefits and inflate costs.

A second critical characteristic is an operational interdependence that makes benefits and costs difficult to track. Most alliances receive some inputs from their parent companies (including raw materials, customer data, and administrative services) and in turn provide outputs to them, creating complicated transfer-pricing issues. Before Airbus Industrie was revamped in 2001, for instance, the four consortium members made aircraft sections and “sold” them to the joint venture, which then assembled and marketed the airplanes. Setting transfer prices was a challenge because of the partners’ sensitivity to sharing detailed cost data. In another case, two global technology companies agreed to jointly market a new product. This alliance involved more than 30 working teams whose 300-odd members spent between 20 percent and 60 percent of their time on the alliance. One executive admitted that he had no real idea how much the company had spent on the

Exhibit 1. Get to know your alliance

Net present value to parent company (disguised example) \$ million



¹Includes terminal value

²Includes management costs

Source: McKinsey analysis

venture, so large were its hidden costs. Measuring benefits is no easier. Alliances often generate sales of related products for parent companies, which should also be taken into account in assessing performance and value. So should longer term benefits like opportunities for learning, access to new technologies and markets, and improved competitive positioning.

The third characteristic is the noncore position of alliances within the corporate portfolio. Because they are inside the corporation, not totally outside, they often do not receive the same level of management scrutiny as business units and internal initiatives; nor are they subject to the same level of market forces as standard customer or supplier relationships.

Measuring performance

To overcome these difficulties, companies must assess the performance of their alliances

on three levels, each focusing on different aspects of the problem and prompting distinct managerial responses.

At the first level, every alliance should be individually assessed to establish how it is performing and whether the parent company needs to intervene. At the second level, a company should periodically search for performance patterns across the portfolio—a process that often leads to adjustments in the types of deals a company pursues and sometimes to additional investments in a drive to build alliance-related skills. At the third level, once a company better understands how its portfolio is performing, it can conduct a top-down review of overall strategy to ensure not only that its alliance portfolio is configured for optimal performance, but also that it has ranked new opportunities in a clear order of priority. The following excerpt focuses on the performance of individual alliances.³

Developing a detailed view of the economics of an alliance is indispensable to measuring its performance. This measurement should go well beyond the usual cash flow metrics to include transfer-pricing benefits, benefits outside the scope of the deal (for instance, sales of related products), the value of options created by the alliance, as well as start-up and ongoing management costs (Exhibit 1). This information is vital for managers to evaluate deals up front and to monitor their continuing performance.

For example, one company in the power industry calculated the embedded option value of a potential alliance to commercialize a critical new technology, evaluating the odds of different possible outcomes and the associated payoffs for each. Its calculation showed that for the given alliance the firm had a

10 percent chance of creating \$1 billion in annual income within three years, a 20 percent chance of creating a modestly successful business producing \$10 million to \$30 million in annual income, a 60 percent chance of losing \$10 million to \$30 million, and a 10 percent chance of losing more than \$200 million. This profile of potential option value was extremely sensitive to assumptions regarding technology and construction costs, leading the company to closely monitor the alliance's early performance, while reserving the right to cut off funding in the event that technical progress slowed.

Likewise, one biotechnology company developed explicit values for the potential learning benefits from a planned development and marketing alliance with a large pharmaceutical company. This exercise provided the information that ultimately pushed the firm to choose one partner over another and led it to closely monitor the benefits of the alliance, eventually allowing the firm to “migrate” into new capabilities.

Having formed an alliance with a clear and integrated view of the economics in mind, a company must develop, within 30 days of the launch, a scorecard to track the venture's performance. Partners must decide whether to share a single scorecard, to run separate scorecards, or to use a combination of the two. For a joint venture with its own P&L, a single scorecard is often possible. For most other alliances, the combination approach works best. Each partner can supplement a shared scorecard with additional metrics that track progress against goals that aren't shared by the other partners. This approach also enables each partner to devise internal metrics that allow it to compare the performance of an alliance with the performance of business

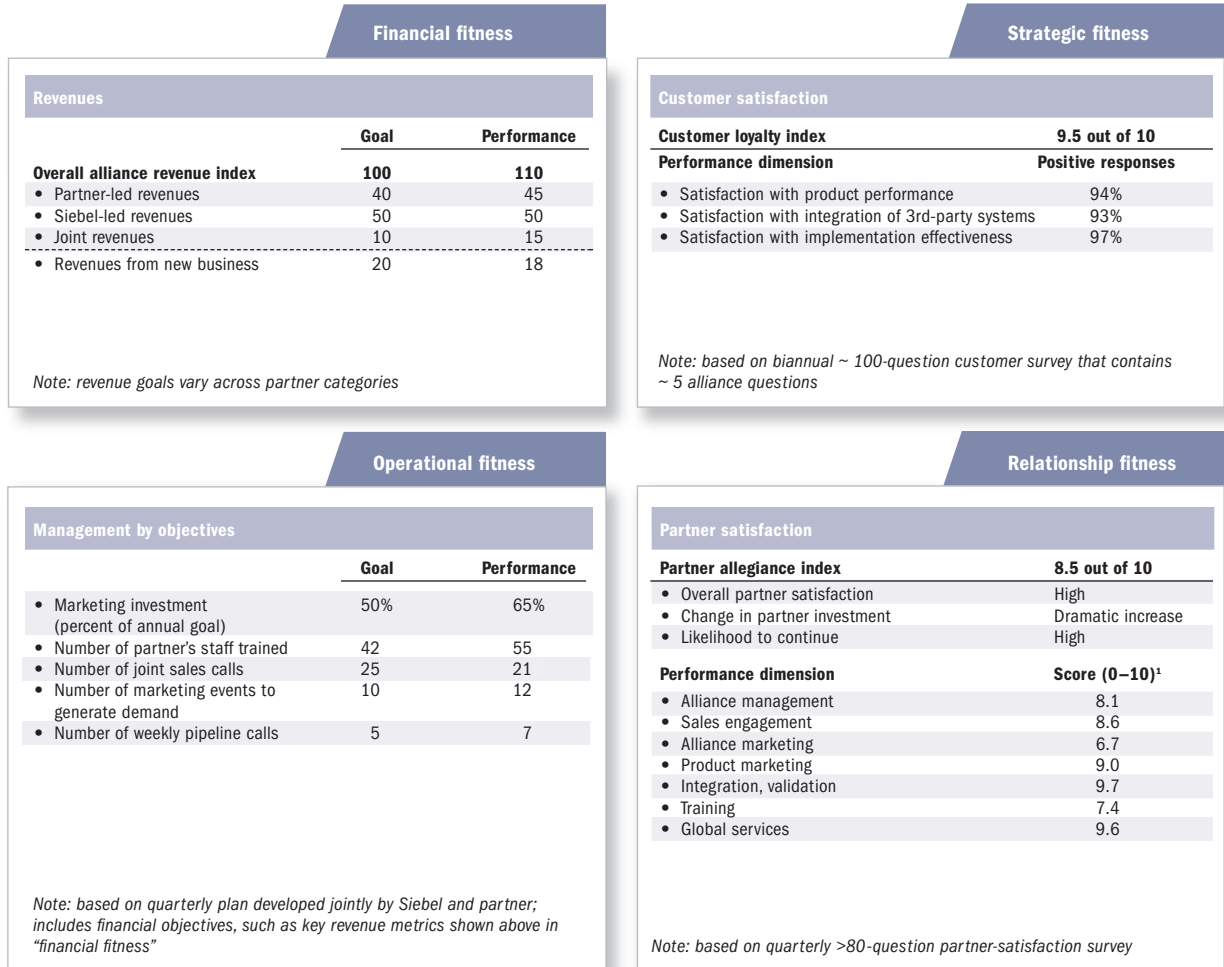
activities outside the alliance or to other, similar alliances.

It is essential, both at the alliance and the parent level, to take a balanced view of performance. To achieve such a balance, we have found it useful to include four dimensions of performance fitness: financial, strategic, operational, and relationship. Financial and strategic metrics show how the alliance is performing and whether it is meeting its goals—but may not provide enough insight into exactly what, if anything, isn't going well. Operational and relationship metrics can help uncover the first signs of trouble and reveal the causes of problems. Together, the four dimensions of performance create an integrated picture that has proved invaluable to the relatively few companies, such as Siebel Systems, that have used them to measure the health of alliances (Exhibit 2).

1. *Financial fitness*: Metrics such as sales revenues, cash flow, net income, return on investment, and the expected net present value of an alliance measure its financial fitness. Most alliances should also monitor progress in reducing overlapping costs, achieving purchasing discounts, or increasing revenues. In addition, financial fitness can include partner-specific metrics such as transfer-pricing revenues and sales of related products by the parent companies. At one international oil industry joint venture, the partners tracked not only revenues and consolidation synergies on a quarterly basis, but also the costs of goods sold to and from the parents, as well as estimates of profitability on those parent-related transactions.

2. *Strategic fitness*: Nonfinancial metrics such as market share, new-product launches, and customer loyalty can help executives measure

Exhibit 2. Siebel Systems' alliance scorecard



¹ Siebel uses this information to calculate gap score (importance of dimension to partner – Siebel performance = gap score); gaps of 2.0 or higher require action plan by alliance manager; performance in applying this plan is monitored by Siebel and senior executives of partner's company.

Source: Siebel Systems; McKinsey analysis

the strategic fitness of a deal; other metrics could, for example, track the competitive positioning and access to new customers or technologies resulting from it. Devising strategic metrics can take imagination. The international semiconductor research consortium SEMATECH, for instance, tracks the number of employees from member companies who are working on its research initiatives in order to assess whether it is transferring knowledge to its partners.

3. *Operational fitness*: The number of customers visited and staff members recruited, the quality of products and manufacturing throughput are examples of operational fitness metrics that call for explicit goals linked to the performance reviews and compensation of individuals. For example, executives at one health care company define operationally-fit alliances as those hitting 60 to 80 percent of their key operating milestones. Any figure higher than 80 percent

indicates that the goals weren't sufficiently ambitious.

4. *Relationship fitness*: Questions about the cultural fit and trust between partners, the speed and clarity of their decision making, the effectiveness of their interventions when problems arise, and the adequacy with which they define and deliver their contributions all fall under the heading of relationship fitness. To measure it, Siebel Systems developed a sophisticated partner-satisfaction survey, sent each quarter to key managers of alliance partners, that contains more than 80 questions about issues such as alliance management and partners' loyalty to Siebel. The company uses this information to spot problems and to develop detailed action plans to address them.

The weight placed on each type of metric and the amount of detail it includes depend on the size and aims of the alliance. A consolidation joint venture whose main goal is to reduce costs, for instance, should focus heavily on financial and operational metrics. But managers of an alliance entering a new market expect negative financial returns in the early stages and should give more weight to strategic goals such as increasing market share and penetrating distribution channels. Smaller, short-term alliances might have simple scorecards with only four or five metrics; larger ventures with substantial assets or revenues deserve something more detailed.

Scorecard results provide important clues to what might be going wrong with an alliance, but uncovering the true problem often requires further investigation. For example, a large media company found that the hundreds of millions of dollars it had invested in alliances were at risk when close scrutiny revealed that five of its ten most important deals were losing

money. In addition, two joint ventures with an international media company were found to have been troubled by flawed deal structures from the start. Further probing found that three unprofitable alliances could be renegotiated, saving \$23 million a year, and that redefining each joint venture partner's contributions and responsibilities could save another \$45 million a year. Subsequently, the company established a corporate-level alliance unit to keep a critical eye on all of its ventures.

At a time when alliances are increasingly important, continuing to ignore their performance is simply not an option. Instead, managers should systematically measure the performance of each individual alliance to ensure that the maximum value is derived and management is able to intervene when a deal veers off track. Experience has proved that the effort pays substantial dividends. **MoF**

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¹ We define alliances as a broad range of collaborative arrangements involving shared objectives; shared risk, reward, or both; and a significant degree of coordination or integration. Alliances involve more shared decision-making than do arm's-length contracts and lack the full control and integration of mergers and acquisitions.

² One study found that 51 percent of the alliances reviewed had essentially no performance metrics at all and that only 11 percent had sufficient metrics. See Jeffrey H. Dyer, Prashant Kale, and Harbir Singh, "How to make strategic alliances work," *Sloan Management Review*, Summer 2001, Volume 42, Number 4.

³ For the complete discussion of alliance portfolio and strategic alliance performance, see "Managing an alliance portfolio." *The McKinsey Quarterly*, 2002, No. 3.

The real cost of equity

The inflation-adjusted cost of equity has been remarkably stable for 40 years, implying a current equity risk premium of 3.5 to 4 percent

Marc H. Goedhart, Timothy M. Koller, and Zane D. Williams

As central as it is to every decision at the heart of corporate finance, there has never been a consensus on how to estimate the cost of equity and the equity risk premium.¹

Conflicting approaches to calculating risk have led to varying estimates of the equity risk premium from 0 percent to 8 percent—although most practitioners use a narrower range of 3.5 percent to 6 percent. With expected returns from long-term government bonds currently about 5 percent in the US and UK capital markets, the narrower range implies a cost of equity for the typical company of between 8.5 and 11.0 percent. This can change the estimated value of a company by more than 40 percent and have profound implications for financial decision making.

Discussions about the cost of equity are often intertwined with debates about where the stock market is heading and whether it is over- or undervalued. For example, the run-up in stock prices in the late 1990s prompted two contradictory points of view. On the one hand, as prices soared ever higher, some investors expected a new era of higher equity returns driven by increased future productivity and economic growth. On the other hand, some analysts and academics suggested that the rising stock prices meant that the risk premium was declining. Pushed to the extreme, a few analysts even argued that the

premium would fall to zero, that the Dow Jones industrial average would reach 36,000 and that stocks would earn the same returns as government bonds. While these views were at the extreme end of the spectrum, it is still easy to get seduced by complex logic and data.

We examined many published analyses and developed a relatively simple methodology that is both stable over time and overcomes the shortcomings of other models. We estimate that the real, inflation-adjusted cost of equity has been remarkably stable at about 7 percent in the US and 6 percent in the UK since the 1960s. Given current, real long-term bond yields of 3 percent in the US and 2.5 percent in the UK, the implied equity risk premium is around 3.5 percent to 4 percent for both markets.

The debate

There are two broad approaches to estimating the cost of equity and market risk premium. The first is historical, based on what equity investors have earned in the past. The second is forward-looking, based on projections implied by current stock prices relative to earnings, cash flows, and expected future growth.

The latter is conceptually preferable. After all, the cost of equity should reflect the return expected (required) by investors. But forward-

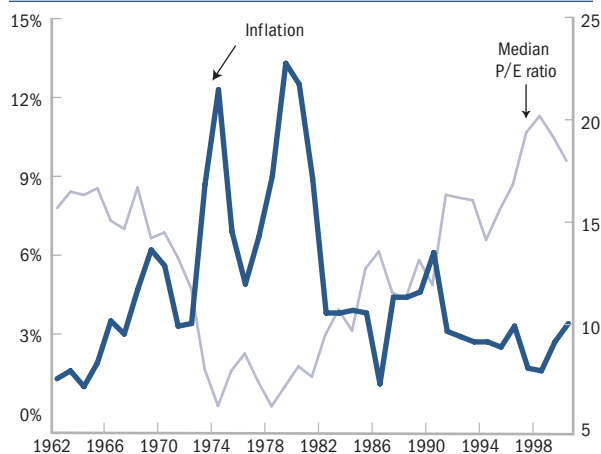
looking estimates are fraught with problems, the most intractable of which is the difficulty of estimating future dividends or earnings growth. Some theorists have attempted to meet that challenge by surveying equity analysts, but since we know that analyst projections almost always overstate the long-term growth of earnings or dividends,² analyst objectivity is hardly beyond question. Others have built elaborate models of forward-looking returns, but such models are typically so complex that it is hard to draw conclusions or generate anything but highly unstable results. Depending on the modeling assumptions, recently published research suggests market risk premiums between 0 and 4 percent.³

Unfortunately, the historical approach is just as tricky because of the subjectivity of its assumptions. For example, over what time period should returns be measured—the previous 5, 10, 20, or 80 years or more? Should average returns be reported as arithmetic or geometric means? How frequently should average returns be sampled? Depending on the answers, the market risk premium based on historical returns can be estimated to be as high as 8 percent.⁴ It is clear that both historical and forward-looking approaches, as practiced, have been inconclusive.

Overcoming the typical failings of economic models

In modeling the behavior of the stock market over the last 40 years,⁵ we observed that many real economic variables were surprisingly stable over time (including long-term growth in corporate profits and returns on capital) and that much of the variability in stock prices related to interest rates and inflation (Exhibit 1). Building on these findings, we

Exhibit 1. US median P/E vs. inflation



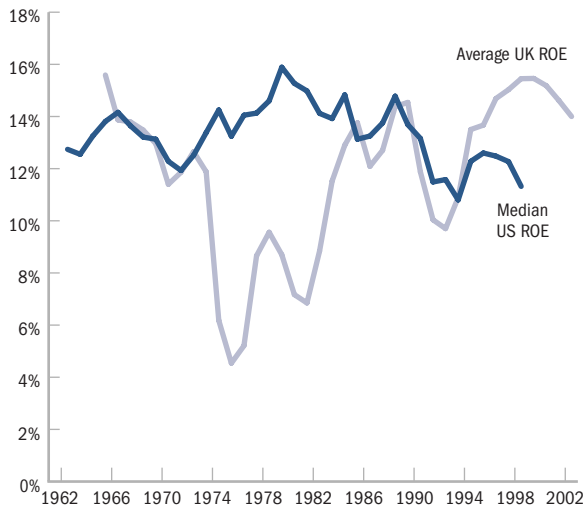
Source: McKinsey analysis

developed a simple, objective, forward-looking model that, when applied retrospectively to the cost of equity over the past 40 years, yielded surprisingly stable estimates.

Forward-looking models typically link current stock prices to expected cash flows by discounting the cash flows at the cost of equity. The implied cost of equity thus becomes a function of known current share values and estimated future cash flows (see sidebar, “Estimating the cost of equity”). Using this standard model as the starting point, we then added three unique characteristics that we believe overcome the shortcomings of many other approaches:

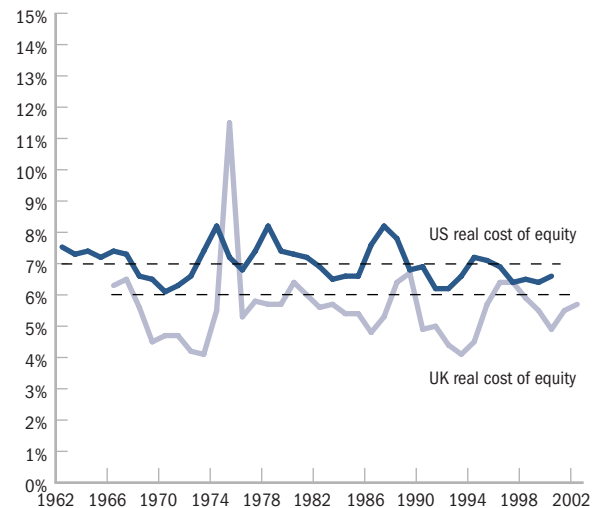
1. *Median stock price valuation.* For the US, we used the value of the median company in the S&P 500 measured by P/E ratio as an estimate of the market’s overall valuation at any point in time. Most researchers have used the S&P 500 itself, but we argue that the S&P 500 is a value-weighted index that has been distorted at times by a few highly valued companies, and therefore does not properly

Exhibit 2. Return on book equity (ROE)



Source: McKinsey analysis

Exhibit 3. Annual estimates of the real cost of equity



Source: McKinsey analysis

reflect the market value of typical companies in the US economy. During the 1990s, the median and aggregate P/E levels diverged sharply. Indeed by the end of 1999, nearly 70 percent of the companies in the S&P 500 had P/E ratios below that of the index as a whole. By using the median P/E ratio, we believe we generate estimates that are more representative for the economy as a whole. Since UK indices have not been similarly distorted, our estimates for the UK market are based instead on aggregate UK market P/E levels.

2. *Dividendable cash flows.* Most models use the current level of dividends as a starting point for projecting cash flows to equity. However, many corporations have moved from paying cash dividends to buying back shares and finding other ways to return cash to shareholders, so estimates based on ordinary dividends will miss a substantial portion of what is paid out. We avoid this by discounting not the dividends paid but the cash flows available to shareholders after new investments

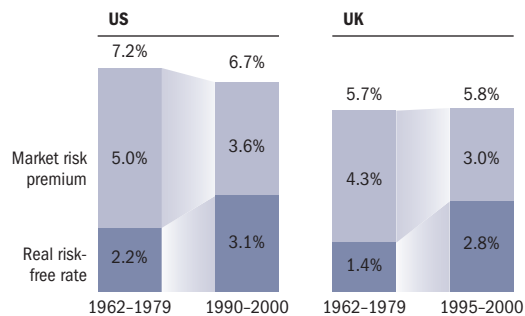
have been funded. These are what we term “dividendable” cash flows to investors that might be paid out through share repurchases as ordinary dividends, or temporarily held as cash at the corporate level.

We estimate dividendable cash flows by subtracting the investment required to sustain the long-term growth rate from current year profits. This investment can be shown to equal the projected long-term profit growth (See sidebar, “Estimating the cost of equity”) divided by the expected return on book equity. To estimate the return on equity (ROE), we were able to take advantage of the fact that US and UK companies have had fairly stable returns over time. As Exhibit 2 shows, the ROE for both US and UK companies has been consistently about 13 percent per year,⁶ the only significant exception being found in UK returns of the late 1970s.

3. *Real earnings growth based on long-term trends.* The expected growth rate in cash flow

The stability of the implied inflation-adjusted cost of equity is striking. Despite a handful of recessions and financial crises over the past 40 years . . . equity investors have continued to demand about the same cost of equity in inflation-adjusted terms.

Exhibit 4. Decomposition of the inflation-adjusted cost of equity



Source: McKinsey analysis

and earnings was estimated as the sum of long-term real GDP growth plus expected inflation. Corporate profits have remained a relatively consistent 5.5 percent of US GDP over the past 50 years. Thus, GDP growth rates are a good proxy for long-term corporate profit growth. Real GDP growth has averaged about 3.5 percent per year over the last 80 years for the US and about 2.5 percent over the past 35 years for the UK. Using GDP growth as a proxy for expected earnings growth allows us to avoid using analysts' expected growth rates.

We estimated the expected inflation rate in each year as the average inflation rate experienced over the previous five years.⁷ The nominal growth rates used in the model for each year were the real GDP growth combined with the contemporary level of expected inflation for that year.

Results

We used the above model to estimate the inflation-adjusted cost of equity implied by stock market valuations each year from 1963 to 2001 in the US and from 1965 to

2001 for the UK (Exhibit 3). In the US, it consistently remains between 6 and 8 percent with an average of 7 percent. For the UK market, the inflation-adjusted cost of equity has been, with two exceptions, between 4 percent and 7 percent and on average 6 percent.

The stability of the implied inflation-adjusted cost of equity is striking. Despite a handful of recessions and financial crises over the past 40 years including most recently the dot.com bubble, equity investors have continued to demand about the same cost of equity in inflation-adjusted terms. Of course, there are deviations from the long-term averages but they aren't very large and they don't last very long. We interpret this to mean that stock markets ultimately understand that despite ups and downs in the broad economy, corporate earnings and economic growth eventually revert to their long-term trend.

We also dissected the inflation-adjusted cost of equity over time into two components: the inflation-adjusted return on government bonds and the market risk premium. As Exhibit 4 demonstrates, from 1962 to 1979 the expected

Estimating the cost of equity

To estimate the cost of equity, we began with a standard perpetuity model:

$$P_t = \frac{CF_{t+1}}{k_e - g} \quad (1)$$

where P_t is the price of a share at time t , CF_{t+1} is the expected cash flow per share at time $t + 1$, k_e is the cost of equity, and g is the expected growth rate of the cash flows. The cash flows, in turn, can be expressed as earnings, E , multiplied by the payout ratio:

$$CF = E(\text{payout ratio})$$

Since the payout ratio is the share of earnings left after reinvestment, replacing the payout ratio with the reinvestment rate gives:

$$CF = E(1 - \text{reinvestment rate})$$

The reinvestment rate, in turn, can be expressed as the ratio of the growth rate, g , to the expected return on equity:

$$\text{reinvestment rate} = \frac{g}{ROE}$$

And thus the cash flows can be expressed as:

$$CF = E \left(1 - \frac{g}{ROE} \right) \quad (2)$$

We then combined formulas (1) and (2) to get the following:

$$\frac{P_t}{E_{t+1}} = \frac{1 - \frac{g}{ROE}}{k_e - g} \Rightarrow k_e = \frac{E_{t+1}}{P_t} \left(1 - \frac{g}{ROE} \right) + g \quad (3)$$

If the inflation embedded in k_e and g is the same, we can then express equation 3 as:

$$k_{er} = \frac{E_{t+1}}{P_t} \left(1 - \frac{g}{ROE} \right) + g_r \quad (4)$$

Where k_{er} and g_r are the inflation-adjusted cost of equity and real growth rate, respectively. We then solved for k_{er} for each year from 1963 through 2001, using the assumptions described in the text of the article.

inflation-adjusted return on government bonds appears to have fluctuated around 2 percent in the US and around 1.5 percent in the UK. The implied equity risk premium was about 5 percent in both markets.⁸ But in the 1990s, it appears that the inflation-adjusted return on both US and UK government bonds may have risen to 3 percent, with the implied equity risk premium falling to 3 percent and 3.6 percent in the UK and US respectively.

We attribute this decline not to equities becoming less risky (the inflation-adjusted cost of equity has not changed) but to investors demanding higher returns in real terms on government bonds after the inflation shocks of the late 1970s and early 1980s. We believe

that using an equity risk premium of 3.5 to 4 percent in the current environment better reflects the true long-term opportunity cost for equity capital and hence will yield more accurate valuations for companies. **MoF**

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¹ Defined as the difference between the cost of equity and the returns investors can expect from supposedly risk-free government bonds.

² See Marc H. Goedhart, Brendan Russel, and Zane D. Williams, "Prophets and profits?" *McKinsey on Finance*, Number 2, Autumn 2001.

³ See, for example, Eugene Fama and Kenneth French, "The Equity Premium," *Journal of Finance*, Volume LVII, Number 2, 2002; and Robert Arnott and Peter Bernstein, "What Risk Premium is 'Normal'," *Financial Analysts Journal*, March/April, 2002; James Claus and Jacob Thomas, "Equity premia as low as three percent?" *Journal of Finance*, Volume LVI, Number 5, 2001.

⁴ See, for example, *Ibbotson and Associates*, Stock, Bonds, Bills and Inflation: 1997 Yearbook.

⁵ See Timothy Koller and Zane Williams, "What happened to the bull market?" *McKinsey on Finance*, Number 1, Summer 2001.

⁶ One consequence of combining a volatile nominal growth rate (due to changing inflationary expectations) with a stable ROE is that the estimated reinvestment rate varies tremendously over time. In the late 1970s, in fact, our estimates are near 100 percent. This is unlikely to be a true representation of actual investor expectations at the time. Instead, we believe it likely that investors viewed the high inflation of those years as temporary. As a result, in all of our estimates, we capped the reinvestment rate at 70 percent.

⁷ This assumption is the one that we are least comfortable with, but our analysis seems to suggest that markets build in an expectation that inflation from the recent past will continue (witness the high long-term government bond yields of the late 1970s).

⁸ There is some evidence that the market risk premium is higher in periods of high inflation and high interest rates, as was experienced in the late 1970s and early 1980s.

The CFO guide to better pricing

Cutting costs might get more attention, but improving pricing discipline can add more to the bottom line. Here's how CFOs can lead the way.

Dieter Kiewell and Eric V. Roegner

Among the many things that jostle for attention in the typical CFO's agenda, pricing isn't usually a priority, crowded out by more visible demands like cutting costs or structuring mergers. Yet a straightforward review of major contracts or a structured analysis of the costs to serve individual customers can reveal considerable opportunity to increase profitability. The unintentional accumulation of discounts and incremental concessions to buyer demands (for benefits like customized design, exceptional payment terms, or prioritized delivery) can significantly undermine a company's intended pricing structure. Given strong evidence that a sound pricing strategy can create real value, some CFOs are being enticed into this neglected area.

When CFOs do get involved in pricing, the impact can be significant. In McKinsey's experience with more than 500 pricing studies over the past two years, committed leadership on pricing strategy improves a company's operating profit margin by between 2 percent and 7 percent, often doubling historic profit margins. To put this in perspective, the average 5 percent improvement in returns on sales from improved pricing creates \$1.5 billion of additional value over five years for an average S&P 500 company.

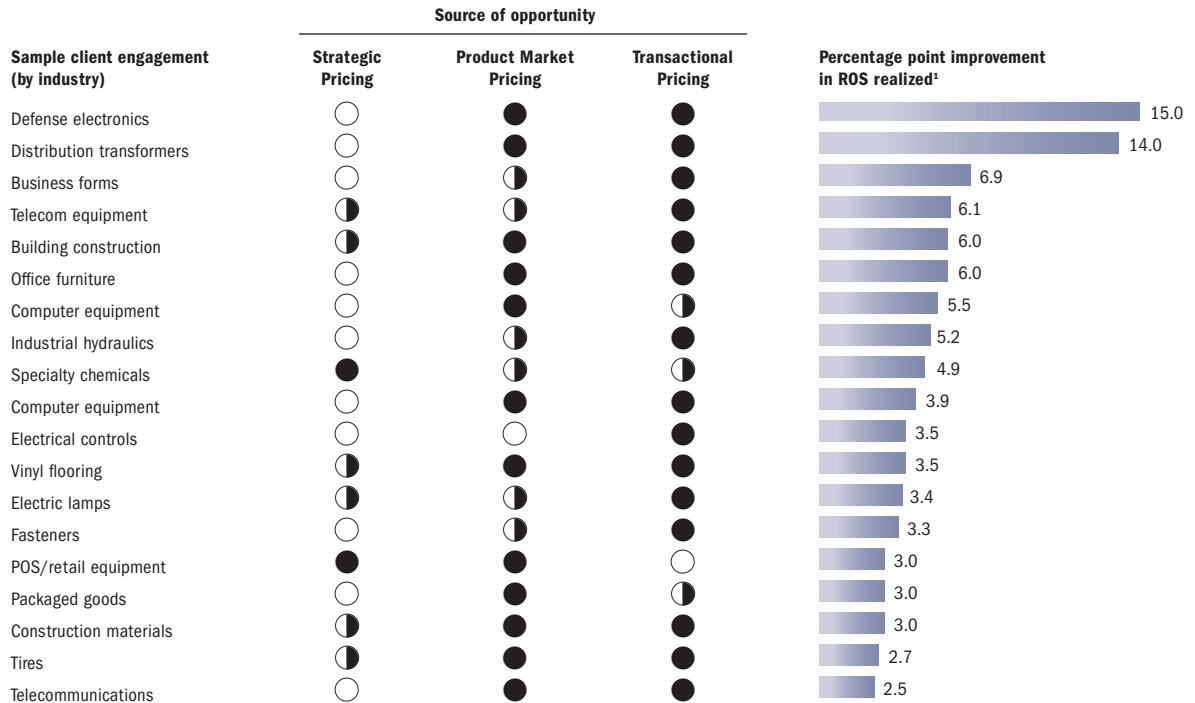
How can such dramatic gains be achieved simply by getting pricing initiatives in place? Consider the case of ChemicalCo,¹ a leading

chemical company with global sales of around \$10 billion. At one time, ChemicalCo boasted profit margins approaching 10 percent but a cyclical decline in the chemical market eroded margins to below 2 percent. Complicating the situation was the fact that price discipline had been lost across all businesses during the downturn. The company had no guidelines to protect price integrity when facing defections of large accounts. Downward pressure on commodity products was contagious, too, infecting even specialty products where ChemicalCo had once earned significant premiums. And a steady deterioration in prices throughout the industry turned even well-positioned corporate peers into the fiercest of competitors—with price becoming the sole differentiator between products.

It was the CFO who in 2001 elevated price performance to the top of the company's priority list, championing a pricing diagnostic across the organization. The diagnostic highlighted opportunities in *transactional pricing* (unwarranted variation in prices and lack of consistency in the terms and conditions of sale on a transactional, customer-by-customer level), *product market pricing* (eroding premiums for value-added products or premium customer segments), and *strategic pricing* (declining industry price levels in the absence of legal price leadership in the underlying market). Pilot projects to address each category of pricing opportunity have delivered

Exhibit 1. Pricing initiatives make a rapid and striking impact

○ low ◐ moderate ● strong



¹ Based on year 1 pilots
Source: McKinsey analysis

2 to 5 percentage points in margin improvements—more than any cost-cutting or growth initiative that ChemicalCo has ever achieved.

The advantages of CFO-led pricing change

Our experience shows that CFO-led pricing projects are more successful in identifying opportunities, ensuring that their full value is captured, and creating an environment of continuous price improvements. CFOs have the clout to raise the issue among the broader management group, to ensure that the appropriate data and analyses are available, and to push for standardized metrics and reporting. Most importantly, their position

and influence means they can ask the necessary tough and probing questions to sales, marketing, and operations heads whose performance lags behind the performance of their peers. In short, the CFO is uniquely positioned to champion sound pricing behavior throughout the organization.

Calling attention to pricing opportunities

Most sales organizations are predominantly volume driven. If sales incentives exist, they typically contain a volume component; when volume incentives are complemented by a margin-based element, it typically kicks in only after a volume quota has been hit. So

Committed leadership on pricing strategy improves a company's operating profit margin by between 2 percent and 7 percent

when the volume/margin trade-off is made, the former usually wins, especially when sales forces are faced with the additional pressures of downturns.

On their own, sales organizations find it very difficult to make even incremental improvements in performance. This is where the finance organization is useful. It can put up a financial mirror in front of sales and marketing teams that makes clear the reality of decisions made by account managers while they are pushing for volume discounts. Finance can also bridge a potential conflict of interest between operations managers, who aim to maximize plant utilization, and the objective of profitable growth, which may require uncomfortable tactics like downsizing.

For example, the sales organization of one North American basic materials manufacturer—we'll call it BaseMat Incorporated—consistently delivered against an aggressive internal annual growth target of 10 percent through the decade since it entered a stable, slightly declining European market. Although the operational director constantly encouraged growing the business, the CFO showed the executive committee that a strategy based on “buying market share through lower prices” was not sustainable. An analysis of BaseMat's three largest customers showed that the company was actually incurring cash losses

with what it regarded as its most important accounts. Yet at the same time, other customers that had grown in volume were producing high profit margins. The CFO concluded that a lack of pricing transparency and discipline within the sales organization had led to an inappropriate prioritization of sales activities.

As a result of this analysis by the CFO, the company introduced a sales tool that allowed sales staff to evaluate each deal against historical and comparable deals, implicitly reprioritizing sales activities to focus on profitable customers. During the first four months after implementation, the company experienced an improvement in profit margin of 1.5 percent on the underlying sales.

Ensuring data availability and analysis

Identifying and quantifying pricing opportunities requires the collection of transaction-specific data, including things like discounts, rebates, payment terms, logistics, and actual customer-specific product and service costs. Typically, a separate database needs to be created that can synthesize the information available from a number of different systems controlled by the CFO. Its central position within a company makes the finance organization the natural owner of such a database, given that data sources may cross both functional and business unit-specific borders but feed into established financial reporting systems (Exhibit 2).

Beyond owning the database, finance organizations can have an enormous impact on pricing performance, both in developing a new product offering and negotiating sales to individual customers. In developing an offer,

the finance organization can provide crucial cost data and revenue projections to support product/service configuration trade-offs, bundling, and pricing decisions. Without such input, decisions are typically made on the basis of incomplete information and intuition. For example, at one large high tech company, the finance organization supported pricing decisions with a sophisticated modeling of revenues that assessed the range of risk for a new product offering depending on various assumptions of how much product would be sold.

When negotiating with individual customers, many companies are finding that procurement agents increasingly demand that core suppliers assume more of the financial risk of their transactions—including payment terms, insurance, or the cost of on-site field engineers, for example. Because sales forces are not equipped to assess their full value or the financial risk associated with them, products and services often have financial elements to them that are simply given away, even at a loss. An instance of this is a large telecom infrastructure vendor that, until two years ago, routinely provided huge financing or leasing agreements to new or high-risk operators without fully evaluating the financial risk to the company. As a result, the company was forced to write off several billion dollars in unpaid invoices. With support from finance, sales organizations can factor in the risk of selling to certain clients and develop bundled offers that are appropriate to the level of client risk.

Larger contracts also often require continuous sophisticated risk assessment. For example, a leading basic material supplier serving the aerospace sector negotiates 5- to 10-year contracts with customers but experiences

Exhibit 2. Required areas of analysis for pricing strategy

Financial analytics to help sales staff determine appropriate discount structure and terms and conditions depending on customer-driven costs to serve.

Corporate finance to assess impact of enterprise agreements, e.g., license portability, on revenue.

Sales analytics to evaluate customer economics, eligibility for pricing exceptions, or collaborative arrangements, e.g., enterprisewide software services or solutions, to understand total customer product benefits.

Legal expertise to manage IP rights/issues and liabilities, e.g., for service level agreements or warranty.

Marketing analytics to measure effectiveness of product pricing and promotional discounts and adapt them according to the financial attractiveness of market segments.

major swings in account profitability due to changes in product mix and raw material costs. To respond effectively, the sales team relies on the deep understanding of price fluctuations, cost structure, and plant economics that only the finance organization can provide to determine how each contract is performing at any point in time.

Maintaining pressure

Most companies feel that pricing cannot be tracked. While it is possible to institute clear metrics for operations or cost improvement, they tend to argue that it is too complicated, too expensive, or too time-consuming to develop measurements for pricing.

But pricing performance can be tracked and good companies do it on a regular basis. One industrial components company routinely

The sales team relies on the deep understanding of price fluctuations, cost structure, and plant economics that only the finance organization can provide.

evaluates and compensates the executive team on the percentage price premium attained over their two largest competitors. Other companies institute pricing-specific tools like *pocket price* or *pocket margin* metrics across particular businesses to monitor the total actual value of a sale once all discounts, bonuses, give-aways, premiums and the like are accounted for. Likewise, highly specific metrics can also be introduced to focus on particularly difficult problems such as unearned rebates, accounts receivable/days outstanding, rushed freight, consigned inventories, and unbilled service hours.

The finance organization is best positioned to design systems to track pricing performance, much as it already does for operations and cost-related performance indicators, and then to integrate findings into a company's other financial reports.

Implementing sound pricing practices companywide

When a company decides to focus on pricing, it often chooses a specific business or geography to analyze as a test case or pilot program. While the vast majority of pilots are successful, only a few companies have implemented new pricing practices across their whole business with the same levels of success.

Typically, this is because of a lack of readily available and reliable pricing information: pricing failures are recognized too late to be corrected and, due to the sensitivity around the issue, pricing successes cannot be celebrated to maintain the momentum of the initiative.

The companies that are most successful at implementing pricing programs across an entire enterprise are those that have set up pricing organizations that report directly to the CFO. In best-in-class pricing organizations, the CFO commits at least 20 percent of his or her time to the pricing effort² and assigns dedicated responsibilities within the finance organization to manage pricing continually. These teams are made responsible for organization-wide implementation of pricing tools and are supported by timely and reliable support from the CFO's finance organization, which gives them the ammunition to force a discussion with sales and other management units if pricing performance deviates from plan.

Much attention is paid to the impact of highly visible cost-cutting efforts or mergers. But the value of those efforts, in fact, often pales when compared to the real gains from implementing and enforcing sound pricing policies, a job that the CFO is in the best position to get done. **MoF**

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¹ Company names in this article have been disguised.

² This compares with an average of only 10 percent found in an annual executive survey by McKinsey's Marketing Practice, 2001.

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