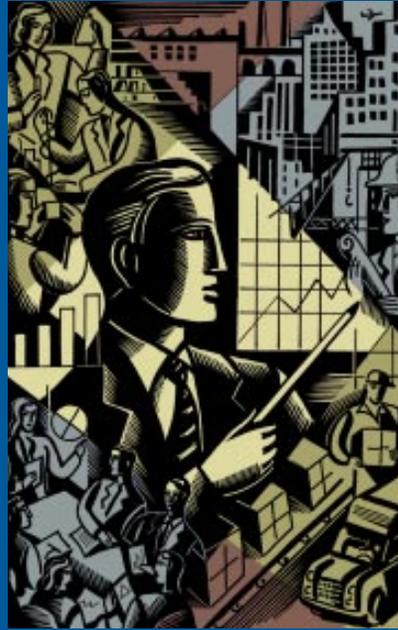


M E A S U R E S
T H A T
M A T T E R



SAVVY CORPORATE LEADERS SEEKING TO MEET THE key management challenges of the future realize there is a dangerous disconnect between the bottom line and long-term goals. Sharing knowledge, wooing customers, and honing the products that will reinvent their industries represent investments for the long-term — usually at odds with short-term reporting practices.



At the heart of this new thinking is a growing body of evidence revealing that reliance on financial measures alone will critically undermine the strategies leading-edge companies *must* pursue to survive and thrive long term. As Baruch Lev, professor of Accounting and Finance at New York University’s Stern School of Business, argues: “To claim that tangible assets should be

measured and valued, while intangibles should not — or could not — is like stating that ‘things’ are valuable, while ‘ideas’ are not.”

Every Measure Tells a Story

Smart companies are searching for ways to incorporate intangibles — such as quality of management, customer retention, R&D and innovation — into their regular performance evaluation. They need to identify key measures for their firms and industries — and allocate resources to strategically manage these important intangibles.

Through strategic performance measurement or balanced scorecard systems, they are gathering critical non-financial **1** data to help pinpoint problems, improve processes and achieve organizational goals — in ways that can be understood and used by all levels of the corporation, from line managers to senior executives. But more importantly, companies are starting to realize the value outside stakeholders are placing on this information.

EIGHT MEASURES THAT MATTER

Execution of corporate strategy

How well does management:

- **leverage its skills and experience?**
- **gain employee commitment?**
- **stay aligned with shareholder interests?**



For those who have resisted pressure to make the latest numbers look good at the expense of a long-term vision or corporate objective, a new study by Ernst & Young bears out the hard work done by such advanced-thinking companies. *Measures that Matter*;SM an extensive study recently completed by Ernst & Young's Center for Business InnovationSM shows that *not only do non-financial measures matter to corporate executives, but more importantly that investors take these measures into account when valuing companies*. The implications for performance measurement are profound. How skillfully companies manage key non-financial areas of performance and then communicate related successes to outside constituencies — shareholders, investors — will have a powerful affect on how they are valued. In fact, the more analysts use non-financial measures, the more accurate their earnings forecasts become.



Falling Into the Gap

The bottom line still matters, of course, as do such vital financial measures as cash flow and P/E ratios. But they provide only a limited view of an enterprise's total value. Financial metrics are

lagging indicators; proactive managers need to balance the focus on both the hard numbers and intangibles that will drive value in the future.

The measurement gap isn't unique to start-ups or high-tech concerns; it affects mature, large-cap companies as well.

Increased globalization and joint

ventures and alliances between enterprises, along with dynamic changes in technology, processes and marketplaces, have also complicated the measurement process, defying traditional reporting methods.

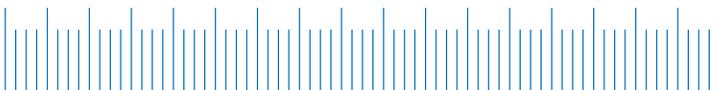
It's no longer a matter of debate that non-financial measures are important. The questions — how important and in what ways — have triggered an explosion of interest.

EIGHT MEASURES THAT MATTER

Quality of strategy

- Does management have a vision for the future?
- Can it make tough decisions and quickly seize opportunities?
- How well does it allocate resources?

2



Consider the investigations in the public and private sectors over the past few years:

- **The Department of Labor** has produced a number of studies analyzing the relationship between non-financial performance and corporate financial results. The most recent examines innovative workplace practices.

- At a symposium sponsored by the **Securities and Exchange Commission** in the spring of 1996, academics, regulators, and corporate managers debated the issue of corporate disclosure. Agreed: Non-financial measures are useful indicators of internal operating performance and achievement.

- **The Council of Institutional Investors**, an association of 100 of the largest U.S. pension funds and the leader of the corporate governance movement, is studying non-financial measures and their use as a tool in the corporate governance process. A special committee of the Council plans to survey corporate executives on workplace practices. The California Public Employees Retirement System (CalPERS), the nation's largest pension fund and a member of the Council, intends to use workplace practices criteria to screen potential investments for its internally-managed portfolio.

EIGHT MEASURES THAT MATTER

Ability to innovate

- Is the company a trendsetter... or a follower?
- What's in the R&D pipeline?
- How readily does the company adapt to changing technologies and markets?

3



Getting the Message

A number of recent studies highlight the limitations of traditional financial accounting measures and the growing importance of non-financial data.

EIGHT MEASURES THAT MATTER

Ability to attract talented people

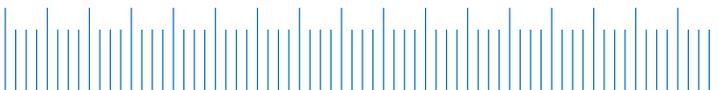
- Is the company able to hire and retain the very best people?
- Does it reward them?
- Is it training the talent it will need tomorrow?

4

- Nearly 40% of the market valuation of the average company was “missing from its balance sheet,” according to a 1996 study by Baruch Lev, professor of Accounting and Finance at New York University’s Stern School of Business. For high-tech firms, that percentage was over 50%.

- Sixty-four percent of all U.S. controllers reported that their companies were actively experimenting with new ways of measuring, collecting and reporting non-financial data, according to a survey by the Institute of Management Accounting.
- At the same time, more and more companies are getting the message: among them, Kellogg’s, Fidelity, Whirlpool, Ferrari, MetLife, FMC, Pitney Bowes, Chemical Bank (now Chase Manhattan Bank), Hewlett-Packard, and Analog Devices.

All of these efforts suggest a growing recognition of the limitations of relying on primarily financial indicators. In a world of relentless technological change and shortened product life cycles, where “knowledge work” and intangible assets are of profound importance, non-financial indicators are essential to characterizing a company’s future financial performance.



Ask the Right Questions ~ Get the Right Answers

“The three universal truths of the manager’s agenda: there is never enough capital; there is never enough management attention; and increasing shareholder value is a never-ending goal. In our Measures that Matter research, we are developing insights on establishing linkages among those truths in ways that help executives increase value in the areas that matter most.”

— CHRIS CHRISTENSEN, PARTNER, ERNST & YOUNG LLP

WHAT MEASURES DO INSTITUTIONAL INVESTORS need — or use — most often? How do investors value factors like customer satisfaction or the quality of management? How much do any of the non-financial measures influence share valuation or a “buy” decision? In other words, which measures do investors already take into account?

Measures that Matter was designed to investigate the impact of non-financial factors on investor decision-making and the extent to which they are leading indicators of future financial performance. Researchers at the Ernst & Young Center for Business Innovation documented how both sell-side research analysts and buy-side investors use non-financial data, and then demonstrated the impact these measures have on share valuation. The results show definitively: *Wall Street already takes non-financial data into account. Non-financial data both reflect and affect corporate financial value.*

Measures that Matter stands apart from earlier studies in a number of ways. It goes beyond empirical analysis and uses experimental simulations to probe the thinking of institutional investors. What information do institutional investors need and use; how do they make buy and sell decisions; and to which criteria are they giving the most weight? *Measures that Matter* is also one of the first studies to document systematically how research analysts use such information. It identifies the consequences of non-financial disclosure, and more importantly, suggests — and quantifies — the impact of changes in non-financial performance on share valuation.

What information do institutional investors need and use; how do they make buy and sell decisions; and to which criteria are they giving the most weight?



The Study

WE EXAMINED HOW NON-FINANCIAL DATA WAS USED in 300 sell-side investment reports, and how much weight they carried in analysts' considerations. We studied the variety of non-financial factors considered across industries. Finally, we analyzed the relationship between analysts' use of non-financial performance data and the accuracy of their earnings forecasts.

The Sell-side Investigation

The findings are compelling. We learned that analysts do, in fact, rely strongly on a broad range of non-financial factors. Analysts

showed the greatest interest in customer- and product-related factors — things like market share, customer retention, marketing — with only slightly less interest in internal and employee-related factors (production, efficiency, empowerment, incentive

compensation) and innovation-related factors (training, R&D and product development).

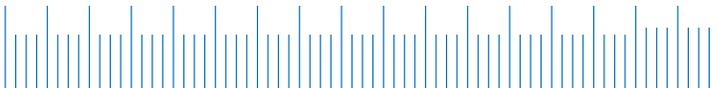
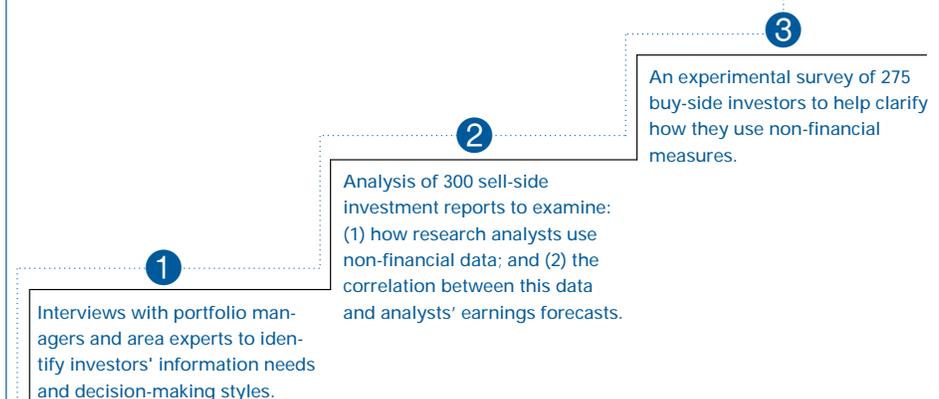
Moreover, the types of non-financial data that analysts relied on varied from industry to industry. For high-tech and service growth companies, whose market valuations and profitability levels depend heavily on intangible assets and employee skills, non-financial data play an even more important role.

“Financial performance tells me what a company has already done. Non-financial performance tells me what it is likely to do.”

— SENIOR PORTFOLIO MANAGER



THE THREE STEPS OF OUR RESEARCH



Even more powerful was the correlation between analysts' use of the data and the accuracy of their forecasts. *When non-financial factors were taken into account, earnings forecasts were more accurate, thus reducing the risk to investors. If a firm's non-financial data are strong, this could facilitate its ability to raise capital. The message is clear: non-financial factors can be used as leading indicators of future financial performance.*



The 39 specific non-financial criteria used most by sell-side analysts can be grouped into eight factors.

NON-FINANCIAL FACTORS

QUALITY OF MANAGEMENT	RANK
Execution of Corporate Strategy	1
Quality of Corporate Strategy	3
Management Experience	7
Quality of Organizational Vision	16
CEO Leadership Style	24

EFFECTIVENESS OF EXECUTIVE COMPENSATION POLICIES	RANK
Alignment of Compensation with Shareholder Interests	8
Performance-based Compensation Policies	12
Ratio of CEO Compensation to Workforce Compensation	39

EFFECTIVENESS OF NEW PRODUCT DEVELOPMENT	RANK
Research Leadership	9
New Product Development Efficiency	14
New Product Development Cycle Time	17
Percentage of Revenues Derived from New Products	20

QUALITY OF INVESTOR COMMUNICATIONS	RANK
Management Credibility	2
Accessibility of Management	26
Quality of Guidance	29
Knowledge and Experience of Investor Relations Contact	31
Quality of Published Materials	34

STRENGTH OF MARKET POSITION	RANK
Innovativeness	4
Market Share	6
Brand Image	13
Strength of Marketing and Advertising	21
Global Capability	22

QUALITY OF PRODUCTS AND SERVICES	RANK
Quality of Major Business Processes	10
Customer Perceived Quality	15
Product Defect Rates/Service Failure Rates	25
Product Durability	27
Product Quality Awards	35
Process Quality Awards	36

STRENGTH OF CORPORATE CULTURE	RANK
Ability to Attract and Retain Talented People	5
Quality of Workforce	18
Quality of Incentive Performance Systems	23
Quality of Employee Training	28
Employee Turnover Rates	30
Environmental and Social Policies	37
Use of Employee Teams	38

LEVEL OF CUSTOMER SATISFACTION	RANK
Customer Satisfaction Level	11
Repeat Sales Level	19
Number of Customer Complaints	32
Quality of Customer Service Department	33



The Buy-side Inquiry

What about buy-side investors? Do they, too, rely on non-financial data? If so, in what ways? Which non-financial criteria carry the most weight? And how is non-financial performance translated into financial value?

The buy-side portion of *Measures that Matter* involved a survey of 275 portfolio managers representing 14% of the target population from all major types and classes of institutional investors and funds. We asked respondents to simulate their allocation decisions using both financial and non-financial information for four companies in each of four major industry groups:

- pharmaceuticals
- oil and gas
- computer
- food/consumer products

As with the sell-side study, we found that institutional investors not only pay attention to non-financial factors, but that they also apply that knowledge when making investment decisions. On average, 35% of the investment decision is driven by consideration of this non-financial data. In other words, *fully one-third of the information used to justify the investment decision is non-financial.*



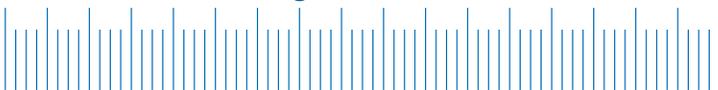
HOW WE CONDUCTED THE BUY-SIDE INQUIRY

The buy-side portion of *Measures that Matter* consisted of a four-part mail survey. In the first two parts, we collected the requisite demographic data, along with investment profiles. For the heart of the study we first collected “stated” preference data: statements about investors’ use of (or preferences for) particular types of investment data.

These included questions such as:

- What percentage of their investment decisions are based on non-financial data?
- How do they rank the usefulness of 39 types of non-financial data?
- How do they rank the value of different data sources?

Then, through hypothetical share purchase scenarios, we gathered experimental or behavioral data on respondents’ “revealed” preferences.



Well over 60% of survey respondents said that non-financial data drove between 20% and 50% of the investment decision. For just under 36% of the respondents non-financial information influenced between 40% and 59% of their investment decision.

Not all non-financial criteria are created equal, however. Measures of strategy execution, management credibility, innovation and market position, for example, proved to be far more useful than measures of customer complaints, employee training programs or environmental and social policies. And the importance of these measures varies from industry to industry, and, within peer groups, from firm to firm.

We found in the study that across different types of investors, however, there is remarkable consistency in the perceived importance of particular types of non-financial data. The value of non-financial data has nothing to do with any particular investment strategy or type of investor; it is universally relevant.

We went one step further, asking: if it's true that non-financial data affect share valuation, can changes in non-financial performance affect share price? *We found not only is there impact, but we were able to gauge its magnitude.*

EIGHT MEASURES THAT MATTER

Market Share

- Is the company capturing the value of the current market?
- Is it well-positioned to expand that value in the future?

5



WHICH NON-FINANCIAL METRICS DO INVESTORS VALUE MOST?

Most Valuable:

1. Strategy Execution
2. Management Credibility
3. Quality of Strategy
4. Innovativeness
5. Ability to Attract Talented People
6. Market Share
7. Management Experience
8. Quality of Executive Compensation
9. Quality of Major Processes
10. Research Leadership

Least Valuable:

1. Compensation Ratios
2. Use of Employee Teams
3. Process Quality Awards
4. Product Quality Awards
5. Social Policies
6. Published Investor Materials
7. Quality of Customer Service Organization
8. Quality of Analyst Guidance
9. Quality of Investor Relations
10. Number of Customer Complaints



To quantify the “value” of this non-financial performance, we asked investors to rank the relative performance of eight non-financial categories on a scale of 0 to 10 units (see Methodology sidebar, below). A one-unit improvement in shareholders’ perceptions of the quality of management, for example, is “worth” \$1.3 billion in additional share value for a major pharmaceutical company like Merck. A one-unit improvement in the perception of strength of market position could represent a 9.3% price premium on long-term share value of an oil and gas company like Exxon (see chart, page 12).

METHODOLOGY

To arrive at these findings, we undertook a two-step modeling process. We presented investors with four companies in each of four industries and eight categories of non-financial performance. First we asked them to rank each company’s relative performance in each of the categories on a scale of 0 (very poor) to 10 (outstanding). We simply sought perceptual ratings, without regard to any financial data on the companies. Next, we presented investors four different financial scenarios for each set of companies. The financial results changed, but the non-financials did not. We then observed how the investors’ allocations changed: how much more or less they allocated to each company based on these changes. Through sensitivity analysis, we showed first how changes in financial information, and then how changes in non-financial information, changed the allocation decision.

Finally, we integrated and scaled these findings to evaluate changes in allocation resulting from non-financial measures relative to the P/E ratio (the financial factor with the biggest impact on the allocation decision).



In experimenting with what-if scenarios, we were able to draw provocative inferences from the study data.

We know non-financial data have a direct impact on valuation. For example, if the company's product development process is perceived as good, so are its earnings prospects. What we also learned, was that non-financial

data have an indirect impact on other non-financial criteria, and in areas in which the investor has little or no information. For instance: if investors like the

product development effort of a pharmaceutical company, they tend to judge the company's overall performance more favorably than they would otherwise. They will also perceive criteria such as the company's brand image, or perhaps even customer satisfaction, better — again, even in the absence of any information on these factors. A one-point improvement in management quality, for example, may also yield a lift in brand power. These incremental changes in performance have long-term as well as short-term influences, *if* the company can sustain the improvement.

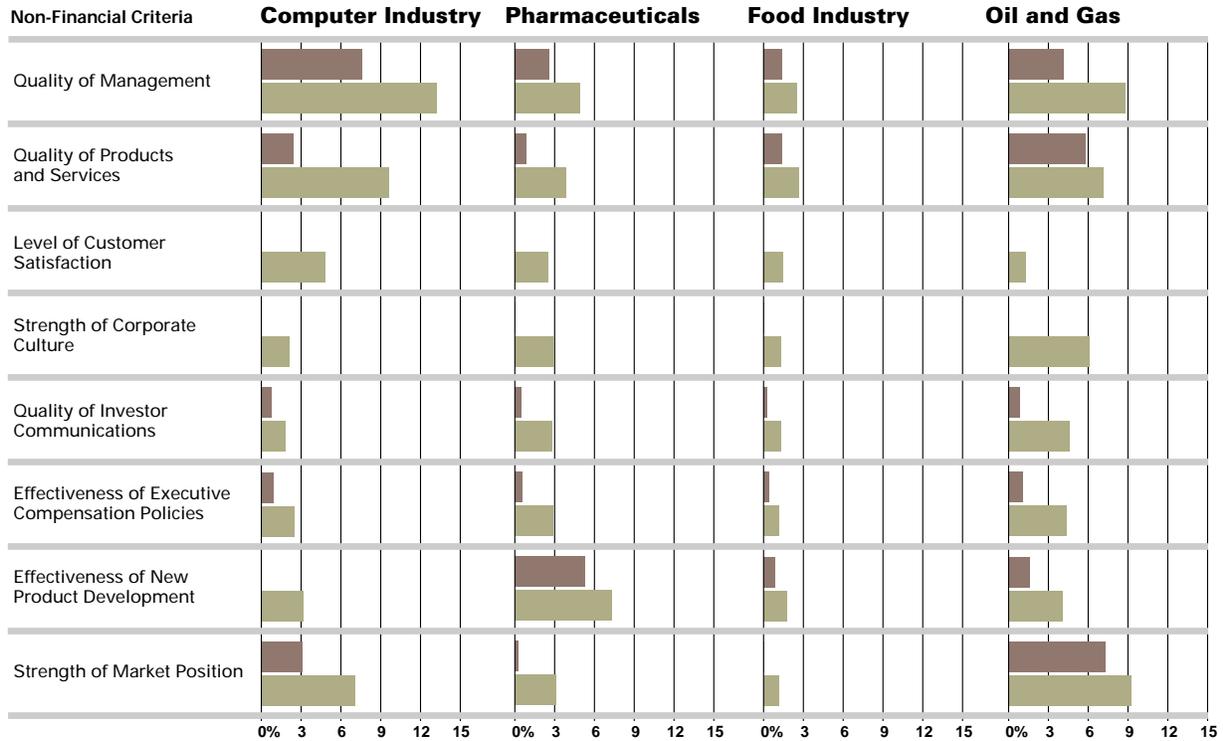
The “brand halo” effect has been the subject of extensive discussion in academic literature. It is highly related to both non-financial and financial performance. What this suggests is that *all non-financial criteria are fed by performance, and in turn, feed the perception of performance.*

A one-unit improvement in the perception of strength of market position could represent a 9.3% price premium on share value.



SHARE PRICE/PAYOFF

Scores indicate the potential percentage change in share price corresponding to a 1-unit change in investor perceptions of non-financial performance; the scale is 0 to 10 units (this is less than a half standard deviation, which is a moderate change).



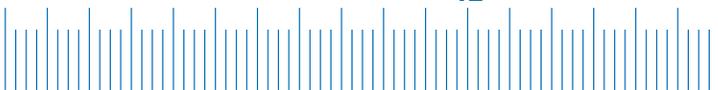
Short Term
 Long Term
 Short term: 3 months or less. Long term: 1 or 2 years out.
 Note: These terms are relative.

Computer Industry:
 In the dynamic or turbulent computer market, quality of management is the single most important area of non-financial performance.

Pharmaceuticals:
 By far the greatest value gain for a pharmaceutical company would result from improvements in the quality of new product development.

Food Industry:
 In a market as stable and mature as the food industry, a big change in non-financial performance leads to only moderate changes in financial performance.

Oil and Gas:
 In the eyes of investors, oil and gas businesses benefit from strong management and strong supplier relations and distribution channels.



Key Findings

Simply put, *Measures that Matter* demonstrates that even for large-cap, mature companies, non-financial performance counts. Sell-side and buy-side investors alike make their own inferences about non-financial performance and then act upon these inferences, whether companies strategically manage and disclose non-financial factors or not.

Among our findings:

- Non-financial criteria constitute, on average, 35% of the investor's decision. For 70% of investors, at least 30% of their decision is attributed to non-financial performance. These criteria are already being used as predictors of financial performance and already have an impact on share price.

- Sell-side research analysts use non-financial data when evaluating companies and making buy/sell decisions.

- The more non-financial measures analysts use, the more accurate are their earnings forecasts.

- The non-financial measures that matter to investors vary across industries, and, within peer groups, from firm to firm.

- If a firm does not strategically manage key non-financial measures, its operating performance and the value of its securities will suffer.

EIGHT MEASURES THAT MATTER

Quality of executive compensation

- Is executive pay tied to strategic goals?

- How well is it gauged to the creation of shareholder value?

6



Why *Measures that Matter* Matters

The diagnostic benefits of company-wide, strategic performance measurement programs are already well recognized. Strategic performance measurement, as a continuous self-checking mechanism, allows companies to sustain superior performance, or identify what corrective steps are necessary to achieve it.

To that, *Measures that Matter* adds a compelling new argument for performance measurement: it can serve as an effective tool to communicate non-financial performance to outside constituencies. As the study demonstrates, investors, analysts and the marketplace in general already account for non-financial

performance. Companies that fail to tell the market about their performance leave investors to make their own inferences. They may underestimate corporate performance, thus undervaluing the stock, or they may overestimate it, which means severe penalties when forecasts are adjusted.

The Message is Clear

Measures that Matter highlights the need for companies to identify the key non-financial measures that matter to investors in their industry in order to gain or sustain a competitive edge. The study identifies critical, industry-specific factors that influence competition. By knowing which factors matter — and how much relative weight they carry — companies can optimize the return on their strategies.

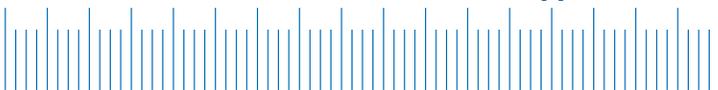
To do this, *companies need to strategically manage their non-financial performance*. They can only benefit from managing the non-financial measures that matter to investors. Performance measurement and management programs have the potential to affect — ideally, to improve — a company's share price, and by extension, its ability to compete for capital. Corporate managers who ignore the benefits of measuring and managing non-financial data may unwittingly be contributing to the undervaluation of their companies. Moreover, they may be handicapping their company's ability to attract new investment capital, particularly if their competitors do measure and provide such data.

EIGHT MEASURES THAT MATTER

Quality of major processes

- Does the organization reduce risk...and enhance return...through the deft execution of its current operations?
- Is the transition seamless to changing conditions?

7



Measures that Matter underscores a new strategic importance for the corporate communications function. Until now, with the overriding emphasis on financial results, corporate communications has been a predominantly reactive function. With the new knowledge of the power of non-financial factors — all of which are inherently leading indicators — *Measures that Matter* supports the idea that corporate communications can, and should, become more proactive. *The study suggests the importance of building strategic communication links with the investment community, to ensure less subjectivity and more precise, more uniform measures of these factors.*

EIGHT MEASURES THAT MATTER

Research leadership

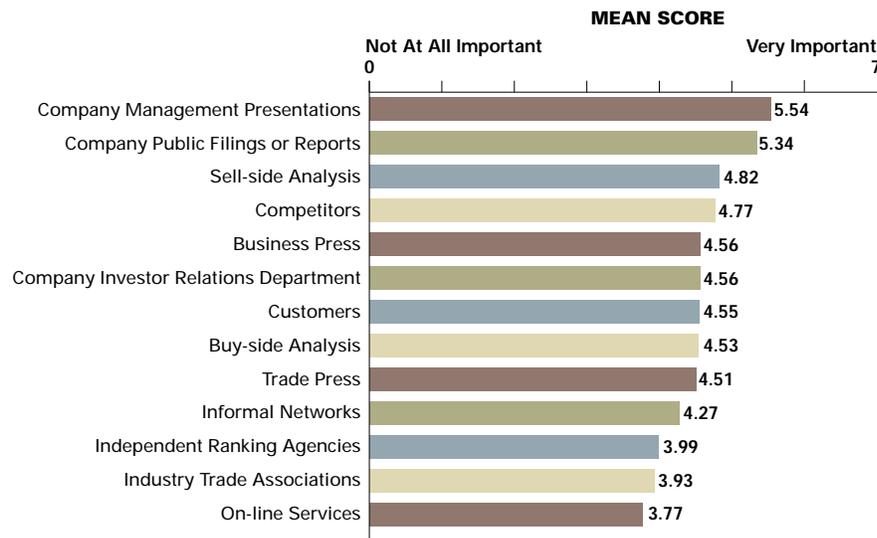
- How well does management understand the link between creating knowledge... and using it?

8



SOURCES OF NON-FINANCIAL INFORMATION

Respondents were asked to rate the importance of these variables on a scale from 0 to 7 where 0 is not at all important and 7 is very important.



Internal company information such as management presentations and reports are considered the most important sources of non-financial information. Easily attainable public information is not a primary provider of this knowledge.



Beyond *Measures that Matter*

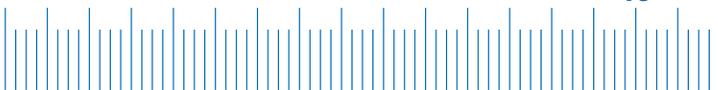
Based on the findings of *Measures that Matter*, companies can optimize their return on strategy and share price performance using non-financial tactics. If a company can identify, manage, measure, and communicate the non-financial measures that matter to investors, it can also capitalize on its knowledge to positively affect the investors who most influence its share price.

Corporate leaders who effectively measure, manage and communicate their non-financial performance may not only contribute to the increased valuation of their firm, but also improve their firm's ability to attract new investment capital, particularly if their competitors *do not* measure and provide such data to the market. The message is

Whether or not a company is strategic in its non-financial efforts, investors use such information extensively.

clear: *whether or not a company is strategic in its non-financial efforts, investors use such information extensively.*

To help our clients realize the full value of *Measures that Matter*, Ernst & Young offers a range of services to optimize *Return on Strategy*™



The Ernst & Young Center for Business InnovationSM

The Ernst & Young Center for Business InnovationSM (CBI) is a source of new knowledge, insights and frameworks for management. The CBI exists to discover innovations in strategy, people, process and technology that deliver high value to business. The CBI's work performed in collaboration with leading thinkers in business, academe, and other research organizations, fuels Ernst & Young's development of new strategic consulting services, and is communicated broadly to general business audiences.

Ernst & Young

Through its groundbreaking *Measures that Matter*SM study, Ernst & Young is at the forefront of the movement promoting corporate acceptance and use of non-financial information. The firm is an active participant on the steering committee of a global research effort involving the Organization for Economic Cooperation and Development (OECD) and the Securities and Exchange Commission. Senior researchers at the firm's Center for Business Innovation are on the board of the Intangibles Research Center, which is sponsored by New York University's Stern School of Business. The Center is currently studying ways to report intangible assets and the value of doing so, to corporate stakeholders.

Measures that Matter represents the first stage of Ernst & Young's initiative on valuing non-financial information. This is part of the firm's broader initiative on global performance measurement and management.

To learn more about *Measures that Matter*
or related services, please contact:

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