

## **McKinsey Quarterly February 2007**

By Lowell L. Bryan

[http://www.mckinsey.com/insights/strategy/the\\_new\\_metrics\\_of\\_corporate\\_performance\\_profit\\_per\\_employee](http://www.mckinsey.com/insights/strategy/the_new_metrics_of_corporate_performance_profit_per_employee)

### **The new metrics of corporate performance: Profit per employee.**

Most measurements of performance are geared to the needs of 20th-century manufacturing companies. Times have changed. Metrics must change as well.

Let's get right to the point: companies focus far too much on measuring returns on invested capital (ROIC) rather than on measuring the contributions made by their talented people. The vast majority of companies still gauge their performance using systems that measure internal financial results—systems based on metrics that don't take sufficient notice of the real engines of wealth creation today: the knowledge, relationships, reputations, and other intangibles created by talented people and represented by investments in such activities as R&D, marketing, and training.

Increasingly, companies create wealth by converting these “raw” intangibles into the institutional skills, patents, brands, software, customer bases, intellectual capital, and networks that raise profit per employee and ROIC. These intangibles are true capital, in the sense of delivering cash returns, even though the sources of those returns are intangible. Indeed, the most valuable capital that companies possess today is precisely intangible rather than financial.<sup>1</sup> Companies should redesign their financial-performance metrics for this new age.

Consider a simple approximation of intangible capital: the market value of a company less its invested financial capital. Using book capital as a crude proxy for financial capital, in 2005 the intangible capital of the world's largest 150 companies was \$7.5 trillion, versus \$800 billion in 1985.

Despite the evidence that intangibles are now the true source of corporate wealth, companies tightly control discretionary spending on them. Advertising, R&D, new-product development, training, knowledge creation, software projects, and so forth are almost always expensed on a “What can we afford?” basis. Why?

One reason is that accounting for intangibles is difficult. In particular, each intangible's specific contribution is hard to assess; how, for example, do you value a brand? Intangibles are embedded in the value chain of production, so it generally isn't clear which intangibles are the sources of profits—or what specific balance of intangible and tangible assets should get the credit (or blame) for results.

The bigger problem is that most companies gear the way they measure their financial performance to the needs of an earlier industrial age, when capital enjoyed pride of place in the minds of strategists and investors. Companies fill their annual reports with information about how they use capital but fail to reflect sufficiently on their use of the “thinking-intensive” people who increasingly drive wealth creation in today's digital economy. The development of external

financial reports according to generally accepted accounting principles (GAAP) ranks among the principal foundations of our modern global capital marketplace. Financial performance (seen through balance sheets, cash flow reports, and income statements) no doubt is and will remain the principal metric for evaluating a company and its management. But it's time to recognize that financial performance increasingly comes from returns on talent, not on capital.

GAAP accounting currently treats investments in intangibles conservatively, compared with the way it treats capital investments in tangible assets. Intangible investments are mostly expensed, not capitalized. This conservatism isn't necessarily bad but does inspire top managers to cut discretionary spending on intangibles in order to deliver quick earnings. That approach may raise short-term profits but can also undermine a company's long-term health.

To boost the potential for wealth creation, strategically minded executives must embrace a radical idea: changing financial-performance metrics to focus on returns on talent rather than returns on capital alone. This shift in perspective would have far-reaching implications—for measuring performance, for evaluating executives, even for the way analysts measure corporate value. Only if executives begin to look at performance in this new way will they change internal measurements of performance and thus motivate managers to make better economic decisions, particularly about spending on intangibles.

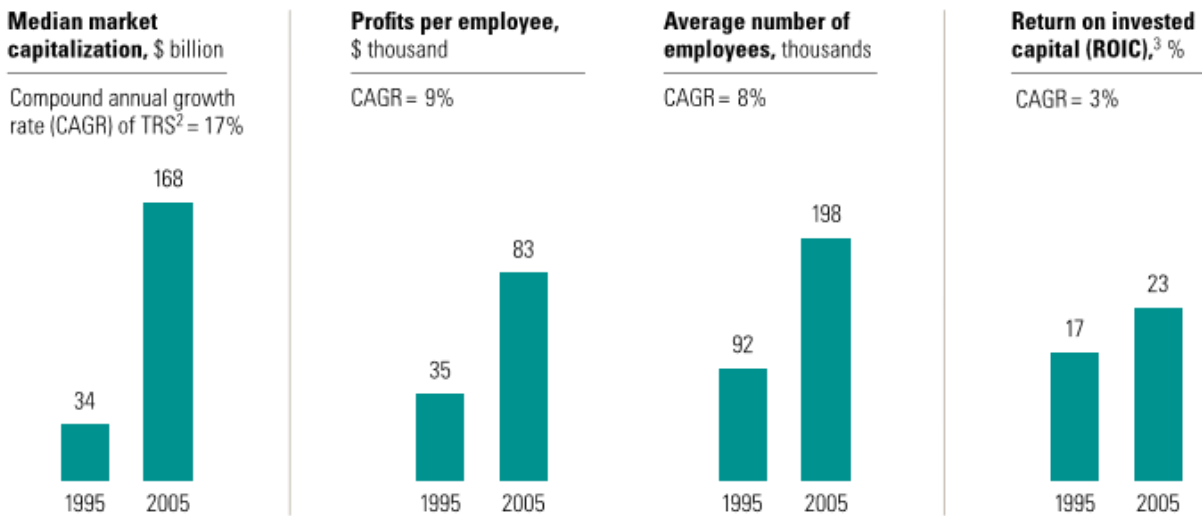
### **Measuring financial performance in the digital age**

Before exploring the new metrics needed to achieve these goals, let's reflect upon the way some companies have recently created great wealth by using their thinking-intensive people rather than their capital.

In past articles, my colleagues and I have examined how, from 1995 to 2005, the top 30 of the very largest companies in the world (ranked by market capitalization) have seen their profit per employee rise to \$83,000, from \$35,000.<sup>2</sup> On average, the number of people these companies employ has grown to 198,000, from 92,000, and their ROIC (or book value, in the case of financial institutions) has increased to 23 percent, from 17 percent (Exhibit 1). As a result, the median market cap of this group of companies rose to \$168 billion, from \$34 billion, with total returns to shareholders (TRS) at 17 percent a year. The driver of this dramatic rise in market cap was a fivefold increase in average profits—an increase brought on in turn by a more than 100 percent jump in profit per employee and a doubling in the number of employees. By comparison, these companies' ROIC increased, over this same period, by only a third.

## Exhibit 1

Drivers of growth for 30 largest companies,<sup>1</sup> 1995–2005



<sup>1</sup>US and foreign companies by American depository receipts, top 30 by market capitalization in 2005; excludes outliers and companies with negative net incomes.

<sup>2</sup>Total returns to shareholders.

<sup>3</sup>Or book value, in the case of financial institutions.

From 1995 to 2005, the 30 largest companies (by market capitalization) have seen their profits per employee increase dramatically.

It is hardly a surprise that growth in profits and market caps should be closely correlated and that a fivefold increase in profits should lead to a similar increase in market caps. But these results do suggest that companies need to take a new approach to measuring financial performance—an approach based on maximizing returns on people. Total profit, after all, is the product of profit per employee and the total number of employees, so maximizing both expressions increases total profit, which drives market capitalization.

Concentrating on this formula (as opposed to returns on capital) offers several advantages. For one, unlike ROIC, profit per employee is a good proxy for earnings on intangibles, partly because the number of people a company employs is easy to obtain. Capital, perhaps surprisingly, is subject to the vagaries of accounting definitions and such corporate-finance decisions as debt-to-equity ratios, dividend policies, and liquidity preferences. As we've noted, and as any executive will testify, talent—not capital—is usually the scarcer resource.

Clearly, then, a new set of metrics could help companies gauge their performance more effectively. Executives should home in, first, on how much profit per employee a company generates. They should make the number of employees a key factor in strategic thinking. And they should keep a clear eye on ROIC, but more as a way of ensuring that the company earns more than the cost of that capital than as an aspiration in its own right. With these metrics, the company can set its goals for the return on intangibles (that is, profit per employee) and growth

(the number of employees), as well as its return on capital, which is largely a sanity check. Together, these three metrics squarely highlight—and drive—market caps.

### **Profit per employee**

If a company's capital intensity doesn't increase, profit per employee is a pretty good proxy for the return on intangibles. The hallmark of financial performance in today's digital age is an expanded ability to earn "rents" from intangibles.<sup>3</sup> Profit per employee is one measure of these rents. ROIC is another. If a company boosts its profit per employee without increasing its capital intensity, management will increase its rents, just as raising ROIC above the cost of capital would. The difference is that viewing profit per employee as the primary metric puts the emphasis on the return on talent. This approach focuses the minds of managers on increasing profit relative to the number of people a company employs. It suggests that the most valuable use of an organization's talent is the creation and use of intangibles. Fortunately, the opportunities to increase profit per employee are unprecedented in a digital economy, where intangible assets are a rich source of value. Opportunities to improve ROIC to an equal extent are hardly as plentiful.

Another advantage of profit per employee is that it requires no adjustment for accounting conventions. Since companies expense their spending on intangibles but not on capital investments (which are usually depreciated over time), profit per employee is a conservative, output-based measure. And since it is based on accounting conventions, companies can easily benchmark it against the comparable results of competitors and other companies.

Profit per employee therefore focuses companies on intangible-intensive value propositions and, in turn, on talented people—those who, with some investment, can produce valuable intangibles.

### **Number of employees**

One way to improve a company's profit per employee is simply to shed low-profit employees. But if they generate profit greater than the cost of the capital used to support their work, shedding them actually reduces the creation of wealth, unless management adds an offsetting number of workers who produce a higher profit per employee.

The Walton family, remember, consistently sits atop the Forbes annual wealth list. Why? Because Wal-Mart Stores, the company the family controls, not only hires large numbers of employees who generate a relatively low average profit<sup>4</sup> but also uses a business model that enables it to handle the complexity involved in managing huge numbers of employees, without incurring offsetting diseconomies.

Real wealth creation therefore comes from increasing either a company's profit per employee (without offsetting reductions in the number of employees or offsetting increases in capital intensity) or the number of employees who earn that level of profit—or both. We can observe this dynamic on a simple grid that illustrates the source of the profit earned by a company and a competitor (Exhibit 2). The grid also shows how total employment can serve as a crude proxy for the internal complexity of any organization, particularly when it is compared with companies in

similar industries that have a comparable employment mix. From this vantage point, profit per employee becomes a proxy for how well a company manages that complexity.

## Talent as profit driver

### Exhibit 2

Drivers of profit for 30 largest companies,<sup>1</sup> 2002–04 (average)



<sup>1</sup>US and foreign companies by American depositary receipts, top 30 by market capitalization in 2004; excludes outliers and companies with negative net incomes.

<sup>2</sup>Royal Bank of Scotland.

Companies can create wealth either by increasing profit per employee, by increasing the number of employees earning such profits, or both.

A company can, of course, streamline its organization and use tools such as formal networks, talent marketplaces, and knowledge marketplaces<sup>5</sup> to mobilize intangibles throughout the enterprise. To the extent that it does so, its profit per employee should increase, even in the absence of profitable new value propositions, if it removes any unproductive complexity.

## Returns on capital

A company can also improve its profit per employee by substituting capital for labor costs. Of course, while capital is relatively inexpensive and readily available, it demands a return and for this reason must be used carefully. But if the company uses total employment to drive its growth aspirations, the amount of capital it requires will be a derivative of the capital its employees need for their work, rather than an independent aspiration.

Executives should therefore look at ROIC mainly as a sanity check. So long as the return exceeds the cost, profit per employee is the better metric because it not only represents the scarcest resource but also reflects profit after the expensing of necessary investments. Capital investment, meanwhile, is depreciated or amortized.

Using the total number of employees as a metric also allows companies to avoid subjective accounting judgments.<sup>6</sup> Book capital, on the other hand, is—surprisingly—relatively ambiguous, for it is subject to somewhat arbitrary accounting conventions that involve goodwill, depreciation schedules, and the way companies expense stock options, among other things. Calculations of a company's ROIC have their own limitations, particularly for financial institutions, whose assets are mostly financial. Invested capital is not only a meaningless concept for such companies but also requires them to make some heroic assumptions.<sup>7</sup>

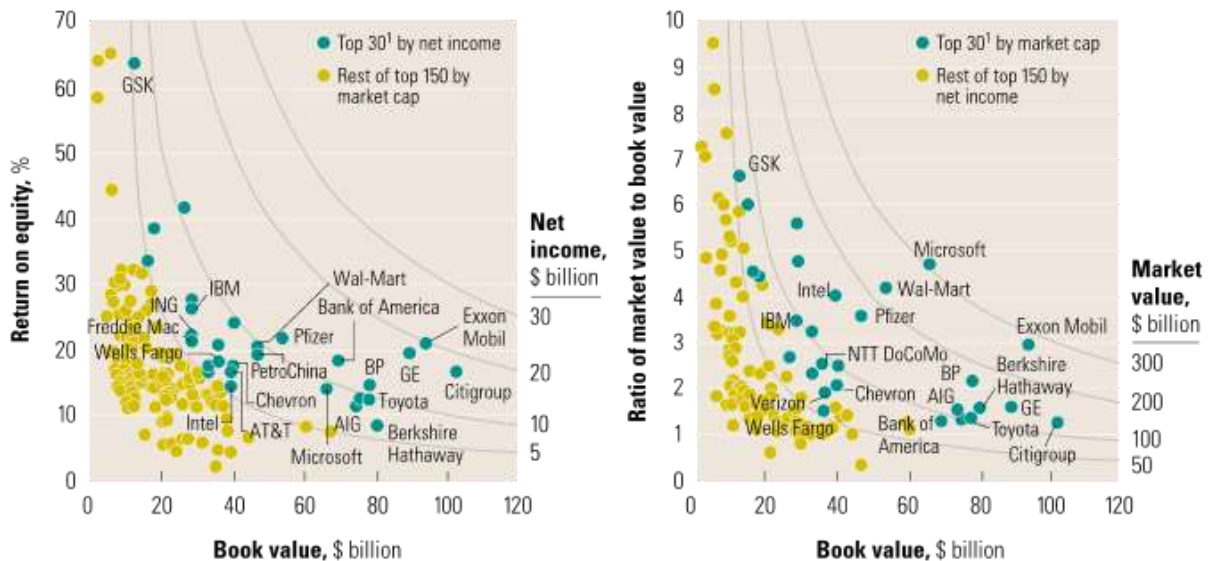
### **Maximizing market capitalization**

The goal of these efforts to reorient financial-performance metrics around talent, of course, is to maximize a company's market cap, perhaps the most important single measure of size and economic relevance. The market cap directly affects a company's ability to control its own strategic destiny and is highly correlated with its total net income; of the top 30 companies by net income from 2002 to 2004, all but 5 were in the top 30 by market value. A company can expose this correlation by displaying its net income as the return on book equity multiplied by book equity and then comparing that relationship with its total market cap disaggregated (in a strategic-control map) into its market-to-book ratio multiplied by book equity (Exhibit 3). The company can also see this same correlation by disaggregating net income, using profit per employee and the total number of employees. Doing so displays the total market cap as a function of the latter and the market cap per employee (Exhibit 4).

## The return-on-capital lens

### Exhibit 3

Net income and market capitalization shown as returns on invested capital (ROIC), 2002–04 (average)



| Overlap     |                    |                 |                   |                        |
|-------------|--------------------|-----------------|-------------------|------------------------|
| AT&T        | AIG                | Exxon Mobil     | Pfizer            | NTT DoCoMo             |
| Freddie Mac | Bank of America    | GE              | Royal Dutch/Shell | Verizon Communications |
| ING         | Berkshire Hathaway | GlaxoSmithKline | Toyota Motor      | Vodafone               |
| PetroChina  | BP                 | IBM             | Wal-Mart Stores   |                        |
|             | Chevron            | Intel           | Wells Fargo       |                        |
|             | Citigroup          | Microsoft       |                   |                        |

<sup>1</sup>US and foreign companies by American depositary receipts; 71% of top 30 by income are also in top 30 by market capitalization.

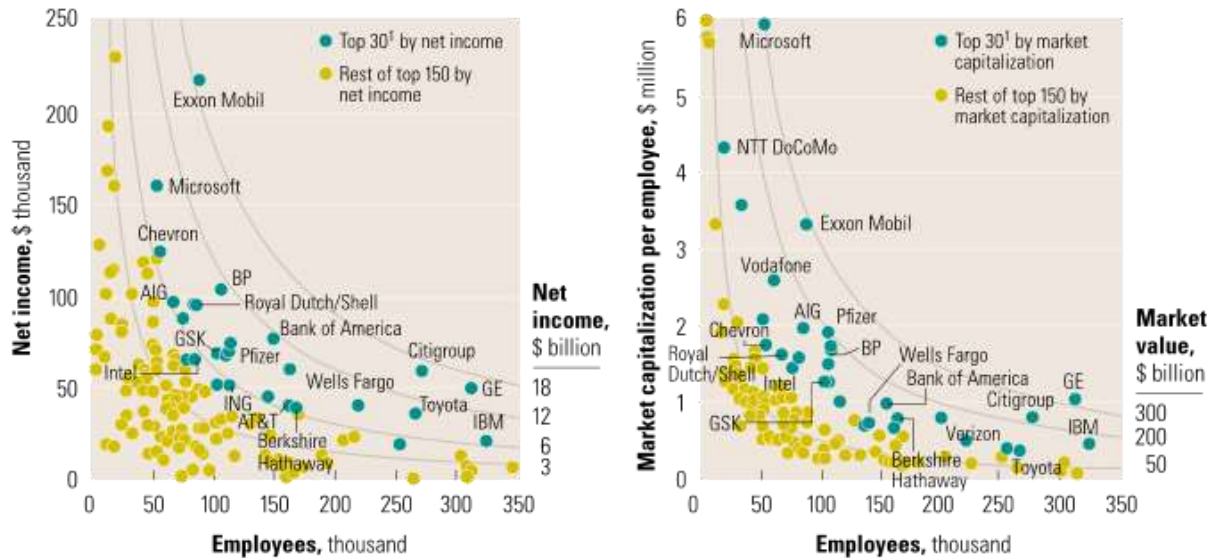
Source: Global Vantage; McKinsey analysis

The correlation of market capitalization to net income can be viewed in relation to returns on invested capital (ROIC)...

## Exhibit 4

### The return-on-talent lens...or in relation to return on talent.

Income and market capitalization shown as returns on talent, 2002–04 (average)



| Overlap     |                    |                 |                   |                        |
|-------------|--------------------|-----------------|-------------------|------------------------|
| AT&T        | AIG                | Exxon Mobil     | Pfizer            | Coca-Cola              |
| Freddie Mac | Bank of America    | GE              | Royal Dutch/Shell | NTT DoCoMo             |
| ING         | Berkshire Hathaway | GlaxoSmithKline | Toyota Motor      | Verizon Communications |
| PetroChina  | BP                 | IBM             | Wal-Mart Stores   | Vodafone               |
|             | Chevron            | Intel           | Wells Fargo       |                        |
|             | Citigroup          | Microsoft       |                   |                        |

<sup>1</sup>US and foreign companies by American depository receipts. 71% of top 30 by income are also in top 30 by net income.

Source: Global Vantage; McKinsey analysis

Net income and market cap can therefore be regarded as functions of the return on either capital or talent. The point is that although the two metrics produce similar results, return on talent is a more powerful model in a competitive environment where the intangible assets that talented employees create provide the greater part of new wealth.

Today's annual reports are filled with information about how companies use capital but offer little about the number of employees, the mix of employees, or the different kinds of employees (beyond a simple expense item on compensation and benefits). Yet it is thinking-intensive talent, not capital, that now drives the creation of wealth and thus deserves to be measured more precisely by strategically minded executives.

## **12 Key Financial Metrics for Businesses**

The Business Ferret uses 12 key financial metrics to determine the health of publicly-traded or privately-held companies. Copyright: The Business Ferret, LLC 1999 - 2014

<http://thebusinessferret.com/key-financial-metrics/>

These indicators give a complete, historic picture of financial health as well as an accurate prediction of future performance.

### **Key Financial Metrics**

#### **Real Revenue Growth**

Real revenue growth shows the real annual growth in revenues adjusted for the effect of annual over-all increases or decreases in the gross profit index. This can be due to increase or decrease in the end pricing to the buyers or due to decreases or increases in the costs of goods sold.

#### **Sustainable Revenue Growth**

Sustainable revenue growth tells us how much additional annual real revenue growth a business can handle according to the resources in the balance sheet. If your business continues to grow faster than sustainable real revenue growth, it runs out of resources to finance this growth and, eventually, all other current financial operations.

#### **Pricing Policy and Pricing Index**

A good pricing policy is simply about maintaining your gross profit margin. Maintaining that specific margin is part of your brand identity, whether you know it or not. If your gross profit margin cannot be maintained, what is happening to the business's brand value?

#### **Operating Expense Control**

Operating expenses are expressed as a percentage of revenues. This key financial metric is typically compared to net income margin (net income to revenues) and gross profit margin.

#### **Comparing EBITDA to Actual Cash Flow**

When it comes to measuring actual cash flow from your business don't use EBITDA! This is a very poor place holder for actual cash flow. It can be highly misleading under most situations. Understand how useless EBITDA is in representing cash flow.

#### **Debt Free Cash Flow**

More specifically debt free cash flow means cash flow before financing but adjusting for any interest expenses paid. By adding back in the tax adjusted interest expense the leverage effect by

the use of debt is totally removed. This would be the cleanest form of cash flow that can be followed for the business.

### **Excess Cash**

Poor cash management can harm the company's performance in both subtle and obvious ways. It's not just having too little or no cash, it is also having too much cash that can negatively affect a business. Holding excess cash can be like increasing the cost of goods without an increase in prices when viewed in relation to return on assets and cost of capital.

### **Return on Assets**

Return on Assets (ROA) is calculated by dividing net operating income after tax (but before other income or expenses like interest income or expense) by total assets. Return on assets eliminates the effect of leverage, positive or negative, when a business uses debt financing. In this form ROAs are highly useful in comparing one company to another.

### **Neutral, Negative, and Positive Working Capital Cash**

Mismatching the working capital will cause consistent and costly problems for the company. Knowing the potential need for capital in the working capital is an important metric for determining the future financing of the business whether short, medium, or long term.

### **Use of Debt Financing**

Few companies can financially function without debt financing and even those that produce enough cash flow to avoid the use of debt should seriously reconsider that choice. Debt financing is generally far cheaper than equity financing, even in the worst of times. Debt financing plays a big role in the company's cost of capital.

### **Net Trade Cycle**

Net trade cycle, or "cash conversion cycle," tells a great deal about working capital in a business. Net trade cycle calculates how many days and dollars are tied up in accounts receivable and inventory and how many days and dollars of financing is furnished by the accounts payable.

### **Cost of Capital**

The Cost of Capital represents how much we're paying to fund our business through debt and cash. This gives us a benchmark for improving the value of a company.

New York Times Online  
January 26, 2012

## **What Are the Odds That Stats Would Be This Popular?**

By QUENTIN HARDY

“Most of my life I went to parties and heard a little groan when people heard what I did,” says Robert Tibshirani, a statistics professor at Stanford University. “Now they’re all excited to meet me.”

It’s not because of a new after-shave. Arcane statistical analysis, the business of making sense of our growing data mountains, has become high tech’s hottest calling. There are billions of bytes generated daily, not just from the Internet but also from sciences like genetics and astronomy. Companies like Google and Facebook, as well as product marketers, risk analysts, spies, natural philosophers and gamblers are all scouring the info, desperate to find a new angle on what makes us and the world tick. Computing has become cheap and available enough to process any number of formulas.

What no one has are enough people to figure out the valuable patterns that lie inside the data.

At North Carolina State, an advanced analytics program lasting 10 months has, since its founding in 2006, placed over 90 percent of its students annually. The average graduate’s starting salary for an entry-level job is \$73,000. Its current class of 40 students had 185 applicants, and next year’s applications are already twice that. In 2009, Harvard awarded four undergraduate degrees in statistics. Two graduates went into finance, one to political polling and one became a substitute teacher. There were nine graduates in 2010, 13 last year. They headed into Google, biosciences and Wall Street, as well as Stanford’s literature department. Globally, LinkedIn recently found that from 2009 to 2011 the new jobs with titles related to “analytics” and “data science” grew by 53 percent.

Stanford’s Department of Statistics, both renowned and near so many Internet and bioscience companies, is at the center of the boom. It received 800 résumés for next year’s 60 graduate positions, twice the number of applications it had three years ago. Graduates head to business school at a starting salary of \$150,000 or more, or to Facebook for about \$130,000.

“We won’t look at many people without a 3.8 average, and for the advanced program, an advanced math graduate exam in the top 10 percent,” says Trevor Hastie, the professor overseeing admissions. Statistics, he notes, dictate that many in the top 10 percent have placed equally, with perfect scores.

Mr. Hastie and Mr. Tibshirani are the authors of “The Elements of Statistical Learning,” a top textbook in the field. Their star course, called “Modern Applied Statistics: Learning,” started a decade ago with 30 students. Its current enrollment just closed off at 190. “We try to give them long and difficult homework assignments,” Mr. Hastie says. “Nothing works.”

(F.Y.I., most of us would fail the course. This week's homework involves building a sequence of nearest neighbor classifiers around its tuning parameter  $K$ , choosing  $K$  using prediction accuracy estimated through tenfold cross validation. In other words, how do you pick the best way to estimate whether an e-mail is spam?)

The two men also teach a two-day course for businesspeople called "Statistical Learning and Data Mining" that costs \$1,450 and attracts a broad range of data-laden people. "We had two guys from Hong Kong who taught a course in horse race prediction," Mr. Tibshirani says. "One of them came back and told us they're making \$10 million a year by modeling the last-minute betting."

Both men also consult for a number of well-known and emerging companies, but they worry about how many of their students will be drawn away from academics to the private sector. The boom in scientific data may be greatest in academia, particularly genetics.

"The data are going to be very wide, with lots of genes, and deep, with billions of variations, once we're able to decode individual human genes for \$1,000," Mr. Tibshirani says. "It will call for new statistical techniques, and new kinds of computation." His own recent work, on the ability to spot false discoveries, is aimed at the genetics problem. Another major life's work, his son, just graduated from Stanford and is teaching statistics at Carnegie Mellon.

About half of the Stanford stat professors have joint appointments with other departments, including economics, human biology and environmental science. "Statistics is unusual," Mr. Hastie notes. "It's a service field to other disciplines. It doesn't rely on its own work. It needs others."