

Profiting from Learning: Do Firms' Investments in Education and Training Pay Off?

Laurie J. Bassi
Jens Ludwig
Daniel P. McMurrer
Mark Van Buren*

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*Email contacts: lbassi@saba.com; ludwigj@gunet.georgetown.edu;
dmccurrer@saba.com; mvanburen@astd.org.





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Introduction

Do enterprises invest enough in job training? Do they invest too much? These questions are of growing importance to the financial health of businesses around the world, as the economy shifts from the industrial era into one that is increasingly knowledge-based. Unfortunately, most executives, managers, and stock-market analysts are unable to produce satisfactory answers because they are relying on accounting and reporting systems developed in the industrial age. Most businesses can't even answer the most fundamental training question - do training investments create value for an organization?

The fact that few businesses or market analysts can answer these questions almost surely leads to under-investment in education and training. Managers aren't certain whether additional training investments improve profitability, or if the stock market will recognize and reward them for these investments (since the productivity payoff may take some time to materialize). Investors have no idea how much firms train, or how these training investments improve long-run earnings prospects. Not surprisingly then, despite the growing importance of training in a knowledge-based economy, rational managers will respond to this information problem by shying away from training, and rational investors will respond by ignoring training altogether when picking potential winners in the market.

That's the bad news. The good news, we argue, is that the potential to overcome these obstacles (for at least a large segment of firms) already exists-in the form of market pressures and incentives. These forces, however, are currently bottled up, and must be jump-started with an initial dose of information (which follows) demonstrating that:

1. Businesses improve their market valuation (as well as many other measures of financial performance) when they invest more in training.
2. Investors could improve their portfolio performance if they had access to information about firm training expenditures when making investment decisions.

We also describe a necessary prerequisite for the full solution to the information problem— a new system of, and means for reporting, standardized training metrics.

In the end, we believe that if organizations and investors take the information in this article and simply apply it in the pursuit of their own self-interest, that in itself will act as the necessary first step to uncorking full market-based pressures in this area.

The Problem

Common wisdom suggests that the global economy has shifted from one in which mass-production methods dominate towards one in which knowledge rules. From the perspective of firms, this means that success may be increasingly tied to the ability to leverage large stores of knowledge-based capital — such as their employee skills, patent portfolios, or research and development. From the perspective of individual workers, these economic changes are manifest in a well-documented increase in the earnings returns to educational credentials and skills.

Yet while many managers believe in the growing importance of investing in skills through formal and informal training, existing accounting and other structures mean that most organizations are unable to adequately mea-

sure, report and evaluate these key investments. This creates a significant dilemma for firms, who find themselves unable to make well-informed decisions in an area that may be vitally important for their survival and success.

The central dilemma facing firms is the dearth of evidence that training creates value for organizations. Unlike research and development expenditures, firms are not required to regularly report training investments to shareholders. Firms that are interested in measuring their training investments (even in the absence of any requirements to do so) confront a number of fundamental measurement problems. The systems that firms use to track their expenditures and investments on materials and capital are inadequate for reliably measuring which employees have received training, and the type and intensity of that training. Complicating matters is that much of this training may occur in a highly decentralized manner, so that line-item expenditure are typically absent from a firm's books. In the absence of reliable information about firm training investments, therefore, it is not surprising that neither firms nor analysts have a good sense for how such investments affect future profitability.

Managing Training in the Face of Uncertainty

Managers are understandably reluctant to devote significant resources to training activities that are expensed as costs (rather than amortized over time like an investment) and have uncertain effects on future productivity. A related problem is that training investments may require some time to translate into productivity gains, as workers and organizations gradually respond to the new skill set of the workforce. Business managers who face a continuing series of short-term pressures might in principle invest in training anyway if the stock market rewarded them for the projected gains in long-term productivity. But if market analysts don't know what firms are doing to develop their human capital, training becomes the proverbial tree that falls in the empty forest.

Despite this uncertainty, however, business managers do seem to invest in training. Data collected by the American Society for Training and Development (ASTD) indicate that the direct costs for formal training are typically on the order of 2 percent of payroll, while indirect and opportunity costs may raise the total to 10 percent or more. Further, the costs of investments in informal learning are likely at least as large as investments in formal learning. Nevertheless, investments in training and learning are almost surely lower than what would occur in a world in which firms (and stock analysts) had full information about the amount of the firm's training and its effects on the bottom line.

This information problem is not, of course, the only potential impediment to firm training investments. Unlike investments in physical capital, the firm does not own the underlying asset (the employee him or herself) in which it needs to invest. As a result, that asset can walk out the door at any time, which also creates some reluctance for firms to make significant investments in training.

Reducing the Uncertainty: Training Does Create Value

Most fundamentally, what managers and investors need is better information on which to base any training-related decisions. Using unique new data on training investments gathered by ASTD, we can finally say that there is evidence that training creates value for organizations. This evidence should provide managers with the information necessary to make good, informed decisions about whether to invest more in training, and should also prompt investors to seek out and invest in more training-intensive firms.

How did we develop this new understanding about the impact of training investments? Over the past several years the ASTD has tried to begin to “solve” the training-information problem by working with firms to measure training investments. Beginning in 1997, ASTD provided organizations with (previously non-existent) standard definitions and metrics for capturing and valuing their investments in training. Many organizations used these standards and provided their data to ASTD (on the condition that their specific information not be made publicly available). In return, they received valuable benchmarking information from ASTD, which showed how their own training investments and outcomes matched up with various reference groups.

The data collection effort has now reached the point where the results can shed empirical light on the relationship between training and firm value. By mid-2000, ASTD had collected a database of training information on over 2,500 firms. The database includes information on the dollar amount that each firm spends on training per employee, as well as the type of training that is provided, and how the training is delivered. These firms are of all sizes, come from all industries, and represent 63 countries. The majority of the firms (61 percent) are headquartered in the United States.

Of the U.S.-based firms, 575 are publicly traded, which enabled us to link their information on education and training investments to publicly-reported financial performance data. The specific financial area on which we have focused is stock market returns, which capture the market’s full summary judgment regarding both a firm’s performance and its future prospects. Specifically, we examine whether training investments in one year affect the total stockholder return, or TSR, during the following year. TSR is defined as the change in stock price plus any dividends issued in a given year. It is the measure that best reflects the return that would be experienced by an individual investor who owned shares of a given company in a given year.

Our Findings

Our central finding is that data on organizational training investments do indeed help predict the future TSR of a firm (as well as other measures of the firm’s financial performance).

Our analysis examines whether firms with higher training investments in 1996, 1997 and 1998 also have higher TSR’s the following year. Figure 1 tells the key story: Firms in the top quartile with respect to training investments have higher median TSR’s in the subsequent year than firms in the other three training quartiles. Further, the third quartile is higher than the second, and the second is higher than the first.

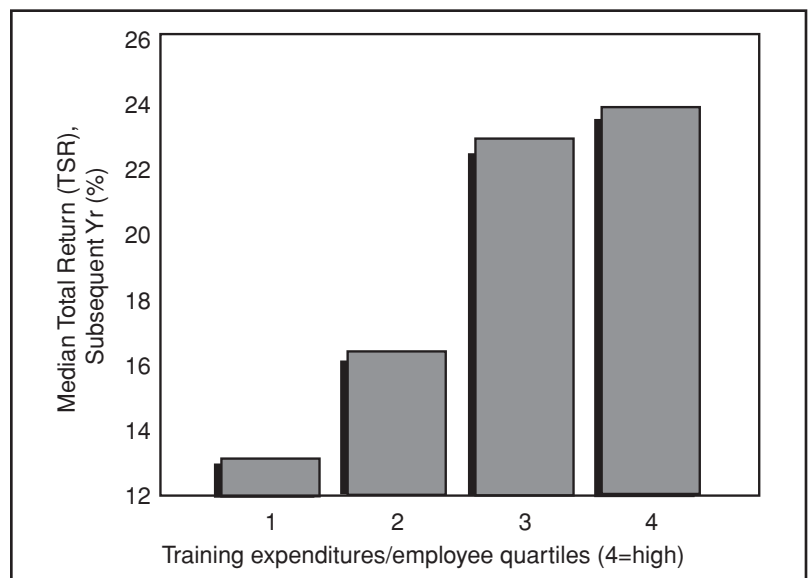


FIGURE 1

Medians (the number for which half of the given group has a higher TSR, and half has a lower TSR) are used to calculate the “average” TSR for each quartile because medians are somewhat more stable and are not disproportionately affected by a few outliers. For any investor constructing a portfolio, however, outliers are of significant interest and should not be discounted, since these are likely to have a huge effect on the ultimate success or failure of the selected investments.

Therefore, the mean—the arithmetic average of a group of numbers—may actually be a better measure. An even more striking pattern emerges when means are examined. Organizations in the top half in terms of training expenditures in one year have a mean TSR in the following year of 36.9 percent, while organizations in the bottom half have a mean TSR of only 19.8 percent. For comparison purposes, the S&P 500 (weighted to reflect the yearly composition of the database) had an annual return of 25.5 percent during this same period. Thus, firms that spend more than average on training have TSR’s that are 86 percent higher than firms that spend less than average, and 45 percent higher than the market average.

Of course, other explanations for these associations are possible. For example, it may be that riskier or more inherently productive industries are also more likely to need to train, in which case the relationship in Figure 1 could be spurious and simply reflect the causal effects of these other factors, rather than training. In order to control for such factors, we used a more sophisticated statistical model (multivariate regression) that is able to take into account individual firm characteristics such as industry, size, prior financial performance and earnings, as well as other financial factors (e.g., expenditures on capital equipment and research and development).

Even after taking these factors into account, we still observe a significant, positive relationship between training investments and TSR. The inclusion of the education and training investment variable improves the power to predict future TSR’s by 50%. Without taking training into account, the other factors explain only 12 percent of the variation in TSR, reflecting the belief that the stock market is essentially a “random walk,” in which it is impossible to predict future stock prices with publicly-available data. When education and training are taken into account, the explanatory power increases to 18 percent.

What are the implications of this effect? Its magnitude is substantial: A one standard deviation increase in a firm’s annual per-employee investment in education and training (equal to around \$680) generates a 6 percentage point improvement in next year’s TSR, even after controlling for many other important factors. Such effects are certainly large to be of significant economic interest.

Is this pattern limited only to TSR? Hardly. We observe similar results for most of the key measures of financial performance and valuation that we examined, including (a) gross profit margin, (b) return on assets, (c) income per employee, and (d) the ratio of price to book value (see Figure 2a-2d). In most cases, the firms that train more also demonstrate better performance on the financial measures. These results suggest that the differences in TSR reflect other differences in actual measures of firm productivity across organizations with different training investments in the previous year.

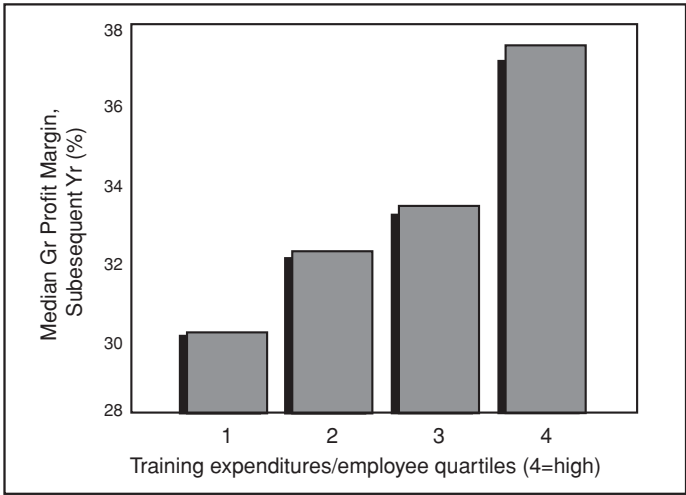


FIGURE 2a

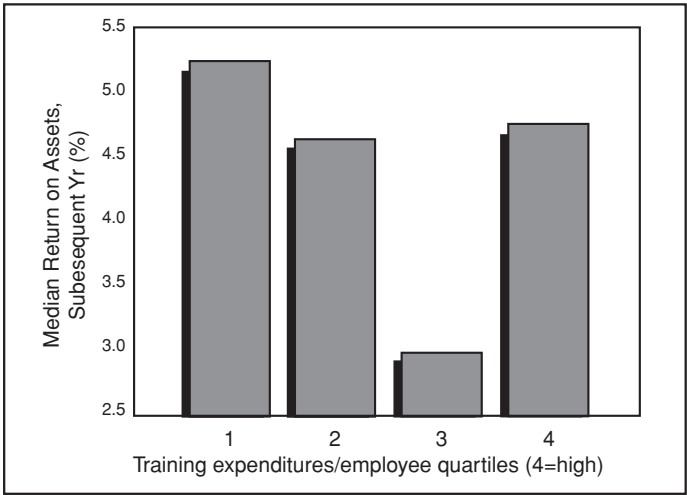


FIGURE 2b

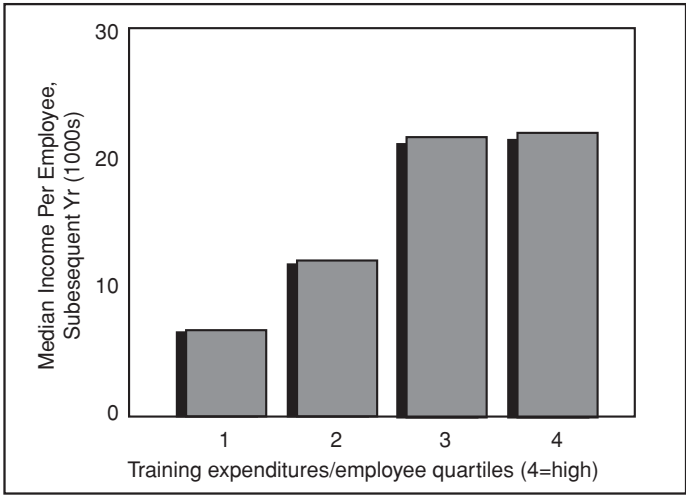


FIGURE 2c

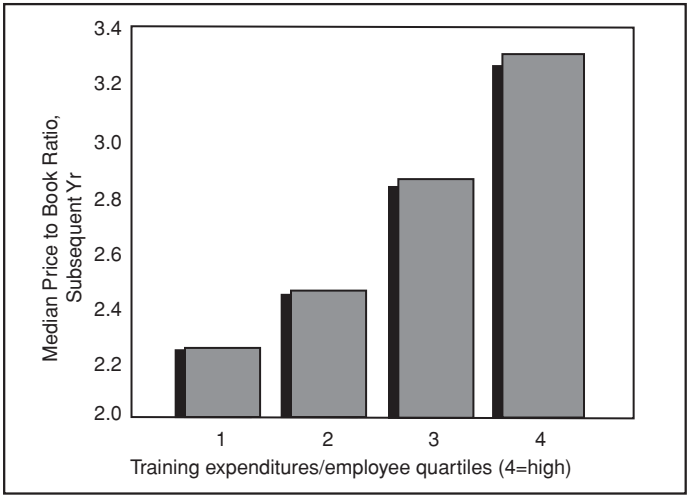


FIGURE 2d

We take one additional step to control for other factors that could be driving these results, and we look at percentage changes in the same financial variables from one year to the next (see Figure 3a-3d). The statistical technique of examining changes in (as opposed to levels of) variables, enables us to control for all other potentially relevant, but unobservable, factors that may be driving the differential financial performance of firms across training quartiles. The same pattern (high training associated with larger percentage changes, or improvement in performance) emerges for most of the variables.

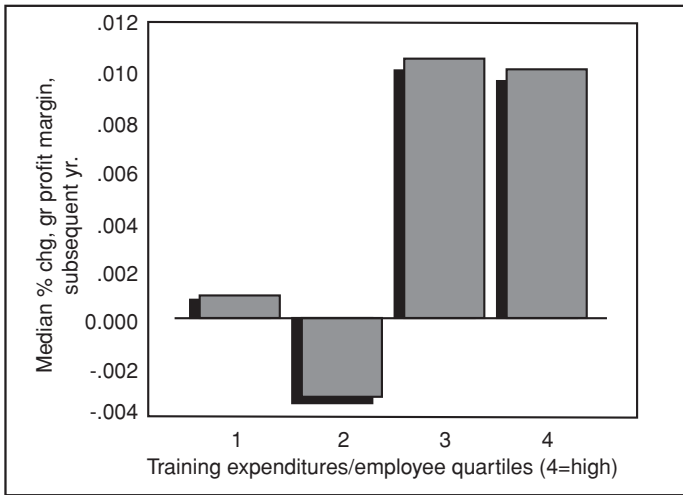


FIGURE 3a

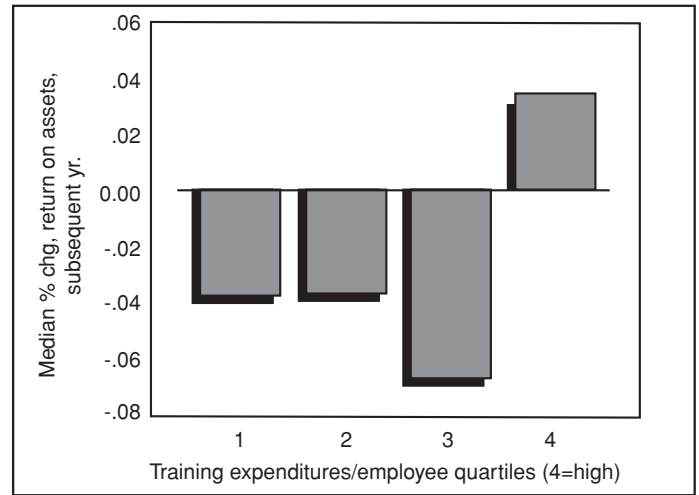


FIGURE 3b

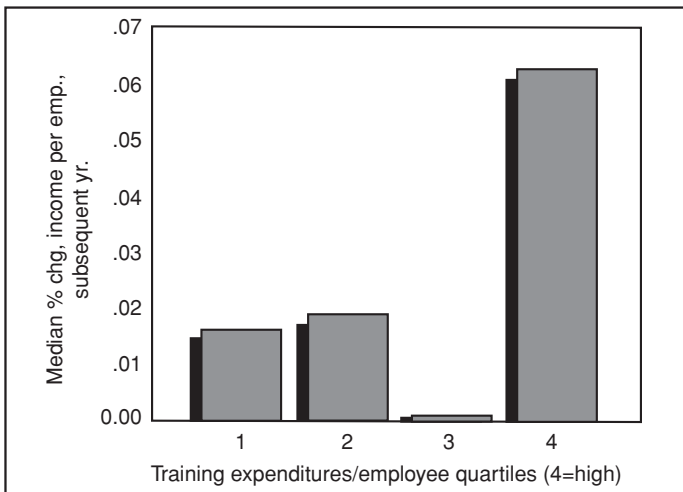


FIGURE 3c

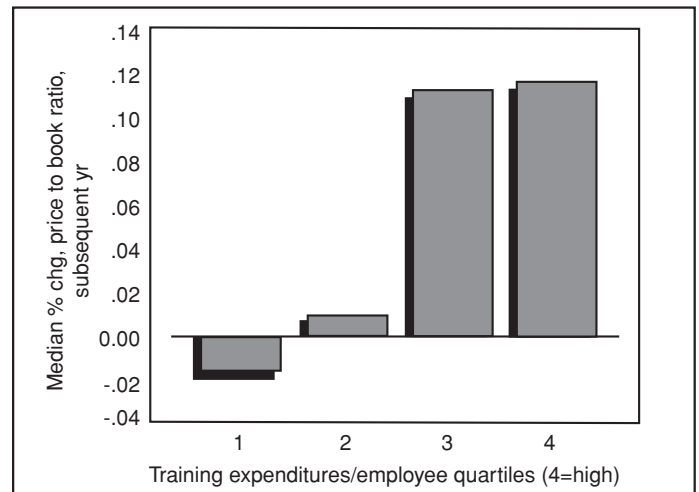


FIGURE 3d

What does the positive association between training expenditures and future TSR mean? From the perspective of firms, it means that training expenditures positively affect other productivity indicators that are observed and valued by the stock market. From the perspective of investors, this positive relationship indicates that the market is unable to fully incorporate the effects of training into a firm's stock price in a given year (no doubt this is because there is no public information available on training); instead, the market responds with some lag. Given the current status of such information, investors who were somehow able to gain direct knowledge of firms' training expenditures could theoretically exploit this lag and assemble a training-heavy portfolio that enjoyed excess returns.

Sears, Roebuck & Co.: A Case in Point

To see in action the process of value creation through training, consider the case of Sears, Roebuck & Co. Information on the training that the firm provides has been instrumental in understanding its "Employee-

Customer-Profit” chain, made famous in 1998 by a Harvard Business Review article, which helped demonstrate how this firm’s profitability ultimately rests upon its investments in learning.

As discussed in that article, the transformation of Sears during the 1990’s was credited in large part to the company’s discovery that the profitability of its stores was directly linked to customer satisfaction — which in turn was strongly tied to the satisfaction of store employees (“associates”).

Through painstaking focus group research and employee surveys, Sears arrived at the “three C’s”. Sears therefore strives to be a:

- Compelling Place to Work (Employee Satisfaction)
- Compelling Place to Shop (Customer Satisfaction)
- Compelling Place to Invest (Profitability)

Next, Sears incorporated the three C’s into its business model. The key to turning the improved business model into a practical management tool was the creation of a system of indicators to measure the three C’s. Once the initial indicators were identified, they were refined through an iterative process of collecting mounds of data from its employees and its stores. The result was an employee-customer-profit model which clearly illustrated the linkages between the three C’s.

Taking the causal pathway to profits at Sears back one step led to the obvious question, “What would make Sears a compelling place to work?” Although Sears was unable to answer this question at the time, the firm has since been able to identify a link between opportunities for employee growth and employee satisfaction. In more recent iterations of the company’s annual associate satisfaction survey, learning—that is, career advancement and training opportunities for associates—consistently ranks as a key predictor of employee satisfaction.

Sears’ employee satisfaction survey reveals its success in this area. A recent survey found that 82 percent of associates like the work they do and that 72 percent are satisfied with the training they received for their current job. The company estimates that the cost of recruiting, hiring, and training a new associate runs about \$3,000 on average (corporate-wide). In the retail industry, where turnover rates can run as high as 50 to 60 percent, retention of satisfied employees translates into both enormous potential cost savings and, ultimately, profitability.

It was not an easy process for Sears to develop an understanding of these key internal linkages. Essentially, the company had to create the entire process from scratch—as would any other organization. A far better solution, if investments like training generally have an impact on organizational financial performance and profitability (as we show above), would be for such information to be made available publicly and for organizations to treat such expenditures as the investments that they truly are.

Quantity v. Quality

A quite reasonable objection to the findings discussed in this article may emerge: namely, the results focus only on quantity of training (dollars spent)—what about the quality of training? We couldn’t agree more. ASTD does have standardized measures of training outcomes (as assessed by training participants and their man-

agers)-but currently, these have only been used by relatively few (250) organizations. In the coming years, we should indeed be able to look at the impact of training quality on financial performance, but not until ASTD is able to gather a larger database of such information.

In the meantime, we believe that these results represent clear evidence that even the most basic measures of the quantity of training provided by an organization is of significance in determining organizational performance and stock market valuation. This information represents an important first step toward putting investments in training on an equal footing with other strategic investments. There are, however, a number of significant issues that require additional exploration.

Obstacles to Publicly-Available Training Information

Since mandatory publicly-reported information on training is in the interests of both firms and investors, why is such information not already made available? The two primary obstacles have been:

1. the lack of a standardized system for measuring and valuing training investments; and
2. that existing systems for accounting for and reporting organizational investments have never included knowledge-related areas, such as human capital.

Lack of Standard Metrics

The lack of standard metrics has, for obvious reasons, helped to retard the development of public information in this area. Without a common set of principles and shared understanding across organizations on how to measure human capital investments, it would be extremely difficult for public disclosure to be useful, even if it were to occur.

It traditionally falls to the public sector to establish standards for various forms of measurement. In cases in which there is no action from any such institution, typically the resulting vacuum remains unfilled. Until recently, this was the case in the training field as well-there was simply no system that could be used across organizations to capture meaningful and consistent information in the area of training. ASTD's system of standard training metrics does serve to fill this vacuum, although not as efficiently as government-promulgated standards might have filled it. Even ASTD, though well-placed in the training community, has found that it is hard, slow work to educate organizations on the availability and applicability of its freely-available set of standard metrics.

Existing Accounting/Reporting Structures

Current "Generally Accepted Accounting Principles" (GAAP) in the United States treat training as a cost-and a hidden one at that. Certainly the absence of knowledge capital in general, and human capital in particular, from the standards included under GAAP made sense in the industrial era. Most, if not all, forms of knowledge capital are extraordinarily difficult areas in which to attempt to place a dollar value, and in most cases, such areas were not central to an industrial-era business. Human capital has always presented additional difficulties, owing in part to its unique status as the one field in which the firm does not own the asset in which the investment is being made.

In the field of business accounting and financial reporting in the United States, institutions like the Federal

Accounting Standards Board (FASB) and the Securities and Exchange Commission (SEC) carry enormous weight in determining how expenditures are measured and reported by organizations. Although both organizations have given some consideration to new standards or requirements in areas like human capital, significant changes are made slowly and often reluctantly, and neither has yet moved for more significant public disclosure of knowledge-related capital generally.

Thus, organizations that adhere to FASB guidelines (and this includes basically all U.S. publicly-traded companies) do not include training as an investment in their standard accounting—even if they are one of the rare organizations that truly does try to manage training purely as an investment. Organizations have strong incentives to report publicly only that information that they are required to report, as they are liable to shareholders for the accuracy of all financial information that is publicly released. As a result, they are extremely reluctant to expand that liability beyond the minimum core of information that they are already required to make public. This factor, combined with the accounting treatment of training as a cost, has made it extremely rare for any organization to ever make public any meaningful information on its training investments or practices.

Indeed, a study by Marlene O'Connor using the 1998 annual reports of all Fortune 500 companies found that not a single organization released meaningful information on its training expenditures, and the number that released any information on training time could be counted on one hand. Similarly, an extensive Nexis search for organizations that have made any public statements about their training expenditures located not a single example. ASTD reports that the most frequent query from potential respondents in their data collection is whether such information will be kept confidential. Clearly, organizations don't believe that there's currently any reward at all for making such information public—in part, this is likely because training is officially an expenditure, and market pressures are to reduce costs, especially hidden ones. If there are positive effects of training investments, it is currently impossible for market incentives to encourage such investments.

It is instructive to compare the impact of training investments on market valuation with the impacts of two other (publicly-reported) types of corporate investments: (1) capital expenditures, and (2) research and development. All three are correlated with a variety of measures of financial performance. The patterns of capital expenditures and R&D with financial performance are similar (although a bit less consistent) than the patterns observed in Figures 2 and 3. All three types of corporate investments are relevant to performance; two are reported publicly—only training is not.

Where Next for Managers (and for Everyone Else)?

Overcoming the obstacles discussed above is a significant undertaking, and we don't have all the answers. We do, however, believe that we have made significant inroads in addressing some of the most fundamental issues that have caused and maintained the information failure in this area.

There are at least two prerequisites that must be met before any further progress can be made in addressing the information problem. Both prerequisites have now been achieved. First, a standard system for capturing training information is necessary. ASTD has established such a system. Second, there must be hard evidence that such information is relevant — that training actually has an impact on the performance and profitability of organizations. This has been demonstrated by the research presented above.

In principle, the discovery that training does affect valuation and financial performance should, by itself, create pressure for changes to be made so that such information is available to the market and its investors.

Investors, acting in their own self interests, want all relevant information in order to make the best possible investment decisions. In light of the significant effect of training investments on returns, investors should begin seeking training information from publicly-traded firms, while firms themselves will likely find that their performance will improve with increased training investments. If even a few training-heavy organizations (acting in their own self-interest) recognize the potential benefits of releasing some selected training information (even in the face of strong reasons not to make such disclosures), then investors will be able to act on such information and reward firms that are doing more training.


This should create additional incentives for other organizations to release such information, ultimately creating a positive feedback loop in which market pressures (reflecting the self-interest of individual investors) build and produce responses from organizations.


The usefulness of early public disclosures on training would be made more valuable if they were released in a standard way-which, fortunately, is one of the benefits of the ASTD system of standard metrics. Moreover, the ASTD measurement system also includes standardized evaluations of training outcomes. These measurement tools (which can be found free of charge at www.astd.org) go a long way toward providing:

- managers with high quality benchmarking data that can be used to improve the outcomes that result from training investments
- standardized measures of the quality (in addition to the quantity) of training investments.

In the long run, it will be necessary for a more systemic, less ad hoc, solution to the information problem. And in reality, of course, significant education efforts will likely be required to bring about necessary changes in a system that currently, along a variety of dimensions, stifles the collection and release of such information. Most importantly, these systemic changes will include changing accounting and reporting standards to reflect the new understanding that training is an investment, that training “matters” in the market and that incentives need to be shifted to make standardized information publicly available. When such changes in reporting standards and practices do come about, all interested parties will benefit. What a shame it would be not to take advantage of this opportunity.

For more information:

 Call +1-650-696-3840 or +1-877-saba-101 (in the USA)

 Email info@saba.com

 Web saba.com

Worldwide Headquarters

2400 Bridge Parkway
Redwood Shores, CA 94065-1166 USA
Tel: +1-650-696-3840

Americas Headquarters

2400 Bridge Parkway
Redwood Shores, CA 94065-1166 USA
Tel: +1-650-696-3840

Europe Middle East Africa Headquarters

Parkshot House, 5 Kew Road
Richmond, Surrey TW9 2PR UK
Tel: +44(0)208-334-8043

Asia/Pacific Headquarters

Level 25, Chifley Tower
2 Chifley Square
Sydney, NSW, 2000
Tel: +61(2)9293-2538