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Measuring the Value of Intellectual Property An Interview with Baruch Lev

BY STEPJEN BERNHUT

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Measuring the VALUE of Intellectual CAPITAL

BY STEPHEN BERNHUT



An interview with Baruch Lev

Few subjects symbolize the emergence and critical importance of the New Economy as intellectual capital, or as they have come to be called, intangible assets. However, for CEOs and executives, lawyers and investors, identifying and valuing intellectual capital is difficult, even perplexing.

One of the recognized authorities on intellectual capital is Baruch Lev, the Philip Bardes Professor of Accounting and Finance at New York University's Leonard N. Stern School of Business. Lev is a frequent witness in litigation involving intellectual capital and the author of a recently published book, *Intangibles: Management, Measuring and Reporting*. He is also a critic of traditional accounting and perhaps the leading exponent of a new, knowledge-based approach to accounting.

To discuss a variety of issues surrounding intellectual capital, and to solicit his views on the subject, *Ivey Business Journal* spoke with Mr. Lev in his office in New York. The interview took place on January 23, 2001.

Journal: *How do you define intellectual capital?*

Lev: Any asset is a claim to a future benefit, such as the rent from owning a commercial property. An intangible asset is—if it is successfully managed—a claim to a future benefit that does not have a physical or financial embodiment. When that claim is legally secured, as with a patent or copyright, we generally call that asset “intellectual property.”

Intangibles are generated by one of three things: innovation, such as Merck’s R&D; unique organizational design, such as Cisco’s Internet-based product installation and maintenance system; and human resources, such as the system Xerox has designed to allow employees to share information. It’s called Eureka and it has increased employee productivity.

Why are intangible assets so important today?

Several things happened during the last 25 years or so, and they mainly have to do with the nature of corporations. The main things include a huge intensification of competition, particularly brought about by globalization of trade.

tive advantages are achieved today with the sound deployment of intangibles, along with other assets.

So the changes in a business’s structure and strategic focus gave rise to the importance of intangibles.

What is it about intangibles that creates value?

There are two major things. One thing differentiates intellectual capital or knowledge assets from physical and financial assets, and that’s what economists call “rivalry” and “non-rivalry” assets. Physical assets are rival assets. Different users rival for the use of an asset. This asset cannot be used elsewhere at the same time. If American Airlines assigns an airplane to a specific route, it cannot assign the same airplane and crew, at the same time, to another route. And the financial capital that’s invested in the airplane cannot be assigned to another route. This means that if you have to increase production and you’re working relatively close to capacity, you have to substan-

“An intangible asset is—if it is successfully managed—a claim to a future benefit that does not have a physical or financial embodiment”

Then there was massive—mainly in the U.S., but in many other countries too—deregulation, which made sectors like telecommunications and financial services competitive, something which they never had been before. These changes forced firms to “deverticalize,” to outsource those activities that did not give them a competitive advantage.

The focus on innovation has also intensified. Innovation was always very important, but it was not a matter of life or death. In the last 15 to 20 years it’s really been a matter of life or death. If you don’t constantly renew yourself...you just don’t survive. And it’s not just New Economy companies, it’s old ones too. The secret of Wal-Mart’s great success is the new systems that it has developed and installed.

So this huge focus on innovation brought intangible investments to the fore, because investing in intangibles creates innovation. There always were intangibles—Coke and Merck are not new companies. But it is, as I said before, it’s now a matter of life or death. If you don’t innovate, if you don’t invest in intangibles, you cannot make it. The fact is that abnormal profits and significant competi-

tially increase the investment in physical assets. Physical, human and financial assets are rival, or scarce, assets, where the scarcity is reflected by the cost of using the assets.

On the other hand, intangible assets are non-rival assets. The use of an asset in one case does not prevent it from being used simultaneously by others in another case. So if I use the example of American Airlines’ reservation system—which is the intellectual capital...it can be used at the same time by 10 people, by 10,000 people, by 10,000,000 people. There’s no limit to this and no opportunity is lost. If you want to increase the production of a patent, a drug, a software, or double it, triple it, quadruple it, you don’t have to increase the investment in R&D at all.

This is what some people call “scalability” or the ability, after you’ve made the first initial investment in intellectual capital, to scale it endlessly and enjoy increasing returns. And if you know how to work your market you can get huge value out of it. So this non-rivalry attribute of intangibles is the main thing that differentiates intangible assets from physical assets. ►

Do intangible assets have liabilities?

There are many negatives. Many people don't focus on the negatives. They are just so enamoured of the positives, the scalability, the increasing returns. But they're all aspects of basically the same thing.

The first negative is what economists call "partial excludability." With physical and financial assets, you can completely exclude others from enjoying these assets. If I own a car and there is an effective police force, I can prevent anybody from using my car. But let's say that I have an employee who is brilliant and that I have invested in his or her training. If he leaves tomorrow, then others will enjoy the entire benefits of my investment. It's very easy to invent a round patent, for example, and just get most of the benefits.

So with respect to intellectual capital, it's very difficult—even with patent laws—to appropriate, to secure and to derive all the benefits from the assets. This weighs heavily on accountants, because for something to qualify as an asset, it must control the benefits. But you don't really control the benefits from training employees, for example. So they say, "Well, you may get benefits from it from time to time, but you don't control it, so it's not an asset."

The second thing that is unique to intellectual capital is that there are basically no markets in intellectual capital. You cannot trade in them. There is no market in R&D, no market in processes, and no market in human assets. Which means that it makes it riskier and more difficult to manage and value these assets. The market provides guidelines for valuations. So investment bankers, when they value companies for IPOs, usually look at what's known as "comparables," similar values of companies. But there are no comparables for R&D, no comparables for human resources, because there are no markets, no prices and no trades. So it's very, very difficult to value these assets.

If you look at the whole picture, you have intangibles for which, if you know how to manage them, you can get a huge amount of value, much more than physical assets. And that's where this scalability comes from. But on the other hand, that's the law of nature; there is no free lunch. On the other hand, it's much more difficult to manage these assets.

Just to give you an example...it's one of my favourite examples. When Lou Gerstner came to IBM as CEO in 1993, one of the things that he saw was that IBM has a huge number of patents. I think IBM is the largest paten-

ter in the world. Someone told me that they prepare on average about three patents a day. But naturally, they develop only a very small fraction of all the patents they have, and the rest are just lying there. So Gerstner said, "Why don't we use these as an asset? Let's sell the patents, license the patents." And they of course gave him the party line, "We don't want to reveal our secrets and so on." The upshot of this was that when he arrived at IBM, annual licensing revenues were about \$30 million [U.S.], which is nothing for IBM. It's now, people say, about \$1.5 billion [U.S.]. This is revenue that flows through, straight to the net income, because there are hardly any expenses involved, just a few lawyers.

The point I want to make is that it's very easy to observe if physical assets are not operating up to capacity, for example. You see that your airlines, your planes are flying half occupied. It's easy. But with respect to intellectual capital, it's extremely complicated. You really need to be able to see that you have an asset here, like the patents that you didn't fully use. So the management of this asset is very difficult.

What is an example of a best practice for managing intellectual capital?

IBM. You come and you observe that you have unused intellectual capital, unused knowledge assets, and you use it. Another example is in the area of human resources. Its employees have—of course many of them have—lots of very valuable experience, learning that they get on the way, and in most cases this is not shared across the organization, and it's really being lost, particularly when these people leave. So Xerox for example, although they are now experiencing hard times, several years ago established a very elaborate system. They called it Eureka. It is a very smart system that shares information among their 25,000 technicians. Some of these people have a huge amount of experience, for example, in how to fix machines quickly. If you just tell them, Why don't they all share it...well, of course, why would they do it? You have to create a system with incentives, which rewards them to reveal their secrets to others. They created this system and they estimate that they save lots of money out of it.

How can a company put a value on an intangible asset?

Here I want to broaden it a little, because most people rarely focus on the value of intangibles. This is an extremely difficult thing to do, because the value of any asset is the

present value of the future benefits of that asset. As the great economist Milton Friedman said, this is the only concept that all economists agree on: The value of an asset is the present value for future cash flows or benefits.

But it's very difficult to estimate future benefits. You can put the next 20 years cash flows down on paper but it's not very reliable. And this is really where the accountant's argument is a strong one, that estimates of values are really not very reliable. What are the cash flows for a drug under development? What are the cash flows for a software program under development? It's very difficult. It's one

it would be if the intangibles were valued. Also, investors themselves seriously undervalue the company.

I believe that you have developed an approach to valuing intangibles. Yes. I call it the knowledge-capital scorecard. It's an approach that is basically derived from and relies on what economists call the "production function," in which you have the performance on the macro level, GDP growth for example. On the micro level, the company level, the performance can be the earnings of the company. And then you say that that's the production function. This is gener-

"An asset is the present value for future cash flows or benefits"

thing to speak about a whole portfolio of drugs for a large pharmaceutical company. But to value individual intangibles is very difficult. And I don't have any magic bullet in this case.

But let me say the following: Most people, some of them knowingly and some of them unknowingly, latch on to this thing and say, "It's very difficult to value, so we really cannot do anything with intangibles." This is, in my book, a terrible mistake. Because there are lots of things you know about intangibles and they are very important. For example, most companies don't even track their investment in intangibles. Most companies don't track investment in training. And if you track investment in training—which is not valuation—it doesn't say what the value of employees is. It just says how much you paid for training, which is a very easy thing to do. You can start doing wonders. You can start evaluating your policies. You can, for example, link investment in training to employee turnover, and see whether you get a decrease in turnover if you increase investment in training, or you get an increase in productivity, or you get any measurable thing.

So my point is that you don't just look at the one thing which is very difficult to do and say "Well, I cannot do anything about that." There are lots of things that you can do short of arriving at a valuation. Valuation is very difficult.

From an investment perspective, not valuing an intangible can seriously undervalue a company. From management's perspective, the cost of capital is often higher than

ated by three types of assets—physical assets, financial assets and by this elusive asset, knowledge capital.

So basically, once I define performance, and I have a very specific definition of performance...I subtract the return on the physical and financial assets. What remains is a residual—the performance of the company that was generated by the knowledge capital.

Is that your definition of performance?

Yes, that is my definition of performance—and in this I differ from other approaches, like EVA. To me, performance is not just past performance, it's not just what was delivered. It has to also include the future, expected performance—growth. Because if you want to assess management, you cannot assess them just by what they delivered last year or over the last five years. So I take a weighted average of both past earnings and future earnings. I get the future earnings from analysts' forecasts, so it's relatively objective. So I get this kind of an average performance based on both past and expected performance—growth potential.

What limitation does something like EVA have with respect to valuing an intangible?

The main limitation comes out when you speak to operating people and ask them what they did last year. They'll definitely tell you that part of it was reflected in the sales of the company. But a large part was also reflected in creating ►

future plans, products and things that will mature in the next few years. Any system that is just based on the past is not capturing these things, and in this sense it's limited.

What is the main obstacle to change in corporate North America?
The main obstacle, in my mind—and I gave it really lots of

it's very difficult to value intangibles. But this doesn't say that you cannot provide extremely important information to users. Just today I got a report from the Financial Accounting Standards Board. It's a work of two or three years. It's called "Improving Business Reporting—Insights into enhancing voluntary disclosure." And they looked at

“It's very difficult to value intangibles. But this doesn't say that you cannot provide extremely important information to users”

thought—is that most of the major actors, those who will have to agree on the change, don't really want any change.

Who are the major actors?

The major actors are the managers who are very comfortable with the current system. Managers—particularly given that intangibles are risky—naturally don't want to be accountable. They feel very comfortable with writing off everything immediately, rather than, for example, keeping records for five drugs that were developed.

So what is a manager to do?

If they feel comfortable writing things off, they're not going to do anything.

But just how can a manager come to feel more comfortable evaluating an intangible?

Again, valuation. I'm not going to ask managers to value anything. We don't ask managers to value physical assets, so why would we ask them to value intangibles? The role of accounting is not to value anything. The role of accounting is to account for investments, for what you invested in. I want to ask managers to provide vital information. You see this is much easier, much less restrictive than valuation. I want to see somewhere in the financial report—and I don't care whether it's in an income statement or in a footnote or in a management discussion—I want to see important items like investment in training, investment in customer acquisition cost. Then I would like to see some linkages. I just would like to have much more information.

So you see the point I am making here—and this really came out from years of discussion—is that I concede that

60 or 70 companies in several industries that provided lots of voluntary disclosure. They found that the reasons why companies provided voluntary disclosure varied. That's the main conclusion. For example, there are many companies that disclose EVA, despite the fact that this is not required. But they say clearly that when it comes to intangibles there is basically no disclosure at all. And there is a huge difference between valuation and disclosure. And that's a thing...I repeat myself...but I just know that people either don't see the difference or pretend they don't see the difference. But just because intangibles are difficult to value doesn't mean that you cannot provide very important information on any aspect.

Who's hurt or loses if they aren't disclosed?

That's the most important question of all. Because if you really cannot show that somehow someone is hurt...what's the issue...who cares about the whole thing. There's lots of research showing that there is significant damage. And let me give you just one example. I did a study with a former student of mine, David Aboody, who is now an Assistant Professor at UCLA. The study just came out in the *Journal of Finance*. In it we show that gains by insiders, gains to corporate officers from trading in the stocks of their own companies—in companies with R&D—were three to four times larger than the gains to insiders in companies without R&D. This is damage. Because if insiders gain, they do so at the expense of outsiders. The reason I focus on R&D is because of what is known as "Information Age symmetry." All companies have intangibles, but the difference between what insiders and outsiders know is much larger for companies with intangibles than companies with a lower level of intangibles. ■

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