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Intangibles and Sustainability: Holistic Approaches to Measuring and Managing Value Creation

by Mary Adams, Smarter-Companies

The intangible capital (IC) and sustainability movements have been developing in parallel but are increasingly understood as inter-related threads of the search for prosperity in the post-industrial world. Both are trying to bring longer-term thinking to decisions about how business and society use resources. Both bring a broader view of the organization, recognizing the importance of resources that don't fit the traditional accounting definition of "assets." Both face challenges in trying to connect their ideas to mainstream business practices. And both see an opportunity to use measurement as a lever to make that connection.

Yet, in spite of all these shared interests, the two movements have not had a lot of interaction. This is slowly changing thanks, at least in part, to the "integrated reporting" movement. This article uses theory and practice from the intangibles movement to suggest integrated approaches that include both intangibles and sustainability. It lays out the differing frameworks, addresses how they interact to provide a more complete view of value creation, and outlines alternatives for measuring value and value creation. The temptation for many is to start with the "value" question. I hope to make the case that the determination of value depends on the degree to which all corporate and market participants involved understand the underlying value creation system.

Resource Frameworks

The best way to understand the relationship between these two movements is to see their conceptual frameworks side by side. Figure 1 summarizes the basics of these related frameworks. Because the makeup of the frameworks tends to vary in practice, this exhibit should be viewed as a general overview, not a detailed summary of these varied approaches.

Intangible Capital. The first family of frameworks is commonly called "Intellectual Capital" or "Intangible Capital." These frameworks were developed by scholars and practitioners with an interest in the growing role of intangibles and knowledge in business. These practitioners come from a variety of backgrounds, ranging from accounting to knowledge management, strategy, and innovation. They focus on the intangible assets that have taken on greater importance as the economy has shifted from the industrial era to what is often referred to as "the knowledge era."

Sustainability. The second family of frameworks is often referred to as the sustainability movement. There is considerable variation in the frameworks used in practice, which include Corporate Citizenship, Corporate Responsibility, Corporate Social Responsibility, ESG, and Triple Bottom Line. The essence of these movements is the attention they pay to social, environmental, and governance concerns.

Integrated Framework. At the center of the figure is the

Figure 1 **Framework Model**

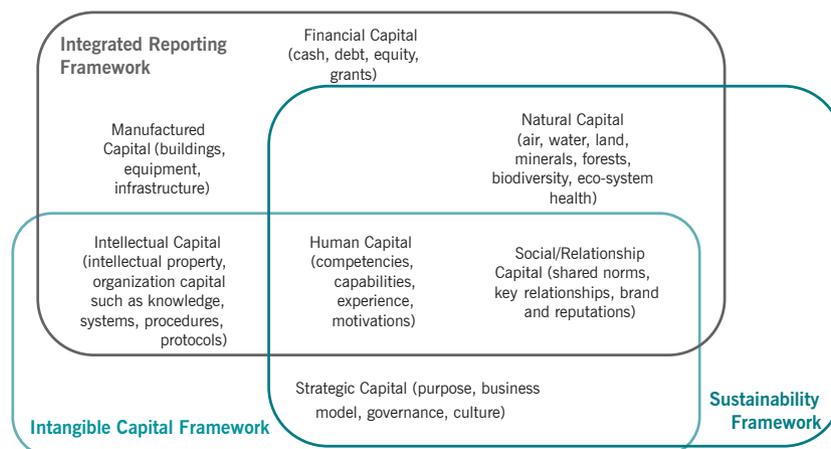
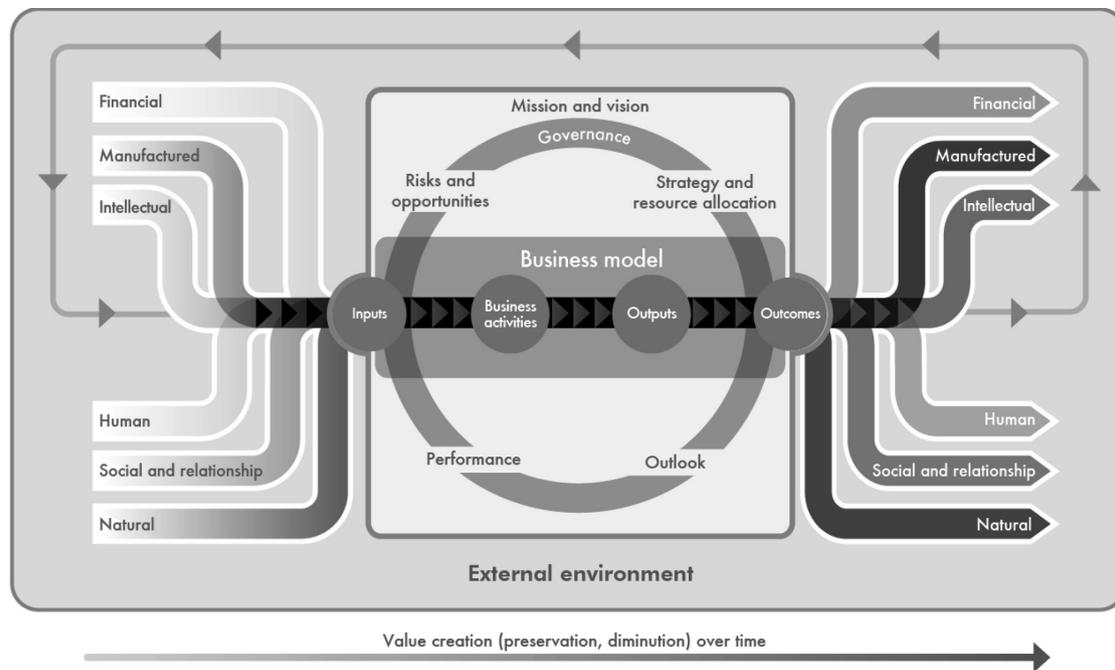


Figure 2 <IR> Value Creation Diagram



Integrated Reporting (<IR>) Framework. This framework was developed by a task force organized by the International Integrated Reporting Council (IIRC). The aim of this task force is to represent and combine elements of both the intangibility and sustainability movements and, as the figure suggests, to connect these two kinds of resources with traditional tangible and financial resources. The Integrated Reporting Framework attempts to make it easier to talk holistically about how value creation using corporate knowledge resources and social challenges (such as preserving and restoring “natural” and “human” capital) is connected with a corporation’s tangible and financial resources—and how the system as a whole drives financial results and capital formation.

Seeing these three frameworks side by side helps highlight overlapping and complementary resources in each and, in so doing, makes clear the value of the integrated model. Nevertheless, it’s important to keep in mind that these frameworks are not ends in themselves. While they are good for drawing attention to resources that don’t fit the traditional accounting and industrial management definitions, they don’t explain how these resources are connected to traditional measures such as revenues, profits and valuation. The challenge here is to advance the thinking behind the frameworks and show how the resources are put to work, and how they create value for a business, its shareholders as well as its stakeholders.

Value Creation Models

Traditional tools for understanding value creation tend to ignore intangibles and sustainability. Michael Porter’s famous Value Chain, for example, is designed like a factory with inputs on the left being transformed into finished products on the right. Financial statements are great at reporting this kind of linear value creation, beginning with investments in plant, equipment, and raw material, and the transformation of work-in-process into finished goods and product sales. The underlying assumption here is that value is created by delivering products. Yet this industrial view fails to capture the full value creation of today’s businesses, even those in manufacturing. This is because it ignores the intangible competencies, systems, data, processes and networks that fuel innovation and performance. It also ignores the external effects of the organization on its community and the physical environment.

The <IR> movement has provided a generic value creation model in its most recent report¹ that is presented graphically in Figure 2. At the same time, many of the companies that now publish integrated reports are coming up with unique visualizations of their own value creation stories.²

For example, a growing number of companies have adopted the downloadable worksheet shown in Figure 3 that enables a company to create a customized value creation model.³ The goal is to create a single sheet that summarizes

1. International <IR> Framework available from the IIRC at: <http://www.theiirc.org/international-ir-framework/>.

2. <IR> Examples site available from the IIRC at: <http://examples.theiirc.org/home>.

3. IC Canvas available from Smarter-Companies: <http://www.smarter-companies.com/forum/topics/counts-open-source-hub-1>.

Figure 3 The Value Creation Process

Value Creation System	PARTNERS ↔ Relational Capital	PURPOSE Strategic Capital	PROPERTY Structural Capital	↔ PEOPLE Human Capital	↔ PLANET Natural Capital
Resources	CUSTOMERS	VALUE PROPOSITION	PROCESSES	COMPETENCIES	RESOURCES
	SUPPLIERS	BUSINESS MODEL	DATA/IP	MANAGEMENT	LAND
	STAKEHOLDERS	CULTURE	BUILDINGS/EQPMT	ADVISORS/BOARD	WASTE
Management	Branding, Marketing, CRM, Sales	Strategy, Governance, Communications	Finance, IT, Operations, Innovation	Hiring, Training, Employee engagement, Work/life balance	Sustainability management
Qualitative Measures	△△△△△	△△△△△	△△△△△	△△△△△	△△△△△
Quantitative Measures	KPI's	KPI's	KPI's	KPI's	KPI's
Financial Measures	Revenue	Profits, Prosperity	Op Costs + Tangible + Intangible Capital Expenditures		
Market Validation	Reputation and Valuation				

all the tangible and intangible resources that the company uses to create value for its customers and stakeholders. The “resource” boxes are meant to be filled in with an inventory of all the important processes and competencies the company uses to support its value proposition. The “measure” boxes can be used to plot out ways that these resources can be measured. The “market validation” box along the bottom serves as a reminder that reputation and valuation are measures of the health and performance of the full value creation system.

This kind of approach can be helpful in moving these concepts of sustainability and intangible value from the theoretical to the practical. It is much easier to engage a businessperson if you are talking about his or her specific processes and designs rather than “structural capital”—or about specific competencies rather than “human capital.”

The immediate goal of such an approach, as noted earlier, is to make clear the links between sustainability, intangible values, and traditional financial and management metrics. But there’s an even more important reason for thinking this way. The new world in which intangibles and sustainability continue to grow in importance is a world where value is increasingly “co-created” with stakeholders. Most intangible resources are “attracted” to, but not owned, by companies. This means that value creation is a two-way street. Employees who are engaged and believe in the mission of a business are more likely to make significant contributions to innovation and performance. Customers who trust the business are more loyal. Natural resources are no longer considered free goods; companies have to be able to earn and attract resources in order to earn a profit.

Ultimately, this kind of mapping or modelling of value creation is an important foundation for strategic planning and for performance measurement and evaluation. Now let’s

consider the limitations of what existing measures are able to tell us about future growth opportunities, and how we might develop new measures that help us recognize and make the most of such opportunities.

Macro Measures

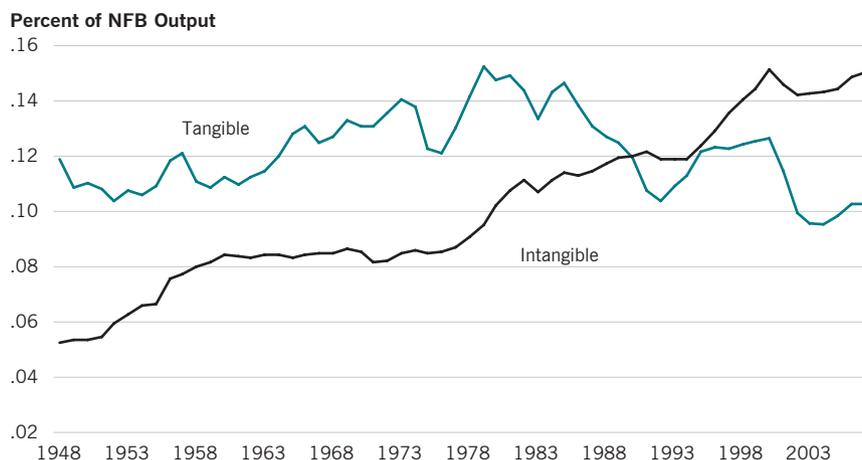
What happens when corporate value creation systems intersect with traditional economic and financial measures? The macro data tell an interesting story.

The best data available has been developed using an Intangible Capital approach called the CHS method (for its original authors, Corrado, Hulten and Sichel, who are economists associated with The Conference Board). The intent was to gather macroeconomic data about the rise of the intangibles economy. This framework has been in use for nearly a decade, and is now used to measure the knowledge economies of many countries. The OECD also uses this methodology for its member countries using the label “knowledge-based capital” (or “KBC”) in place of the more commonly used “intangible capital.”

Figure 4 shows spending on intangibles by U.S. corporations as a percentage of non-farm business output when using the CHS method. As these data show, U.S. corporate investment in intangibles has risen steadily since the end of World War II. What’s more, it has been more than 20 years since the level of such investment first surpassed the level of U.S. corporate investment in tangibles.

As the CHS data make clear, U.S. companies have changed how they are investing their money. The expectation is that these investments in intangibles create systems, processes, designs, data and capabilities that have lasting value. Work is still underway by a number of academics to

Figure 4 U.S. Corporate Investments in Intangibles



Data from The Conference Board⁴

figure out how to measure the amount of and the return on this value. One of the limitations here is that there is no accounting data to measure the amount or the value of this spending because traditional accounting does not treat expenditures on intangibles as investments that can be capitalized. The reason is that most intangibles do not meet minimum accounting tests as “assets”: they are often not owned, can be hard to identify separately (such as automated systems that include data, software and designs), and are often created internally rather than through arms-length transactions.

Think about a company like Federal Express. Fedex owns the largest private fleet of aircraft in the world, countless trucks, and all manner of sorting equipment. But these tangible assets are not the longest-lived assets they own—and they don’t even really give the company competitive advantage. The company’s longest-lived resources are the processes that have been developed over decades to optimize the pickup, routing, and delivery of packages. Related assets include databases and networks that help Fedex get packages through customs in 220 countries around the world. But, again, because the costs incurred to build, maintain, and improve these long-lived resources are not capitalized as assets, the value of resources remains invisible in traditional financial reporting. Think about what would happen if Fedex lost all of its tangible assets, and then think about the consequences of losing its intangibles? The loss of all its planes and trucks would be a devastating blow. But Fedex could probably recover most of its value if it still had all its systems and data. In contrast, what would happen if Fedex lost all its intangibles? The essence of the company would be gone.

But now let’s consider how the market views Fedex. At the end of its fiscal year (May 30) 2014, Fedex had a tangible

net worth of \$11.4 billion, which amounted to just 28% of its market equity capitalization of \$40.3 billion. And this percentage is actually higher than the average for public companies in the United States. As can be seen in Figure 4, the percentage of corporate value represented by tangible net worth in the S&P 500 has plummeted from 83% in 1975 to about 16% today.

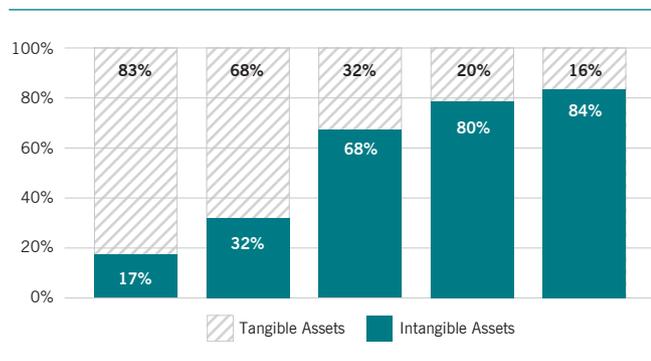
One of the most notable changes during this period, which has experienced a general shift of the economy away from industrial manufacturing, has been the sharp rise in the use of computing technologies. Although large mainframes were in use prior to 1975, the rapid adoption of personal computers in the 1980s prompted an increase in the intangible knowledge components of work. The next great shift came with the rise of the Internet in the 1990s, which connected personal computers and super-charged this intangible, knowledge-based capital.

But if these numbers provide a clear illustration of the shift in value from the tangible to intangible, it is important to recognize that this is not really a measurement of intangibles but, rather, of an intangible “information gap.” In other words, the market isn’t explicitly valuing a company’s investment in intangibles; instead it is assigning a value to the future earnings and cash flow that such investment is expected to produce.

Think about a company like Amazon, which is famous for investing for the long term with remarkably little attention to quarterly EPS. How much is Amazon investing to maintain its core digital infrastructure? How much of the spending in a given year is related to short-term operations versus long-term projects? Do these projects create “assets” with lasting

4. Data and graph available from The Conference Board at: <https://www.conference-board.org/data/intangibles/>.

Figure 5 Intangibles Information Gap



Data compiled by Ocean Tomo⁵

value? What kind of capabilities are they creating? What is the return on this spending? The GAAP requirement to expense (instead of capitalizing) most of its long-term investments means that Amazon’s intangible infrastructure remains invisible except in the form of revenues and profits. Analysts and investors are left to formulate their own answers without the data hidden in the financials that could answer many of these questions.

This phenomenon can also be seen in acquisition accounting. An acquisition is the one moment when accountants have to capitalize the intangible value in a company. As reported in Figure 6, during the past three years, roughly 72% of the value of companies acquired in U.S. M&A transactions was booked as intangibles. Some of this value was assigned to specific intangibles such as customer lists and trade names. But the majority of it, roughly 40%, was booked as “goodwill.” As with the S&P calculation above, this goodwill is an intangible information gap, a plug number between the total value and the portion that is identified on the balance sheet. With such a large portion of acquisitions left undefined, it is not surprising that many mergers fail to deliver on initial expectations.

One famous example of intangibles in M&A was Google’s acquisition of Motorola Mobility in 2012. Google accounted for the total purchase price of \$12.5 billion as follows: \$2.9 billion was cash acquired; \$5.5 billion was attributed to patents and developed technology; \$2.6 billion to goodwill; \$730 million to customer relationships; and \$670 million to other net assets acquired. This transaction actually had less goodwill than average (21% versus an average of 40%) because of the large value allocated to the patents. What was especially striking was that, as is the common practice, Mobility’s portfolio of some 17,000 patents was not on Motorola’s books prior to the acquisition; the \$5.5 billion value assigned to the portfolio appeared in the market for the first time when it was included on Google’s books after the transaction.

This is just one example of the intangibles that represent a significant information gap in most every company. They hint at another level to the story told by the macro measures of investment and corporate value. Unfortunately, these macro measures are the best available today. Once you get down to the corporate level, the picture gets much fuzzier.

Micro Measures

While we can clearly see the intangibles trend at a macro level, it is much harder to see at the micro or firm level. This is not to say that there is no data on intangibles (or sustainability) at the corporate level. There are actually enormous amounts of data—for example, on human resources, customers, and processes—but it is usually scattered.

What kind of measures are available? There are basically three kinds:

- Financial—revenue, costs, investment and valuation
- Quantitative—counting things that can be counted or measured
- Qualitative—analysis or ratings

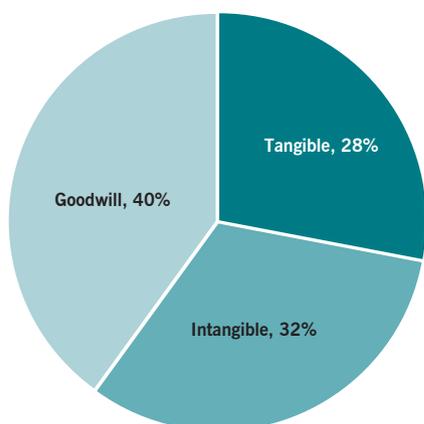
No one measure is satisfactory. But using the three kinds of measures together enables a kind of “triangulation”—that is, a way of estimating the health and outlook of intangibles by combining all three kinds of measurement in a single view. Most of the information that can be used in this triangulation process is actually buried in the narrative of business plans, strategic reports and annual review.

Take Federal Express’s employees. The company’s 2014 annual report states:

Along with a strong reputation among customers and the general public, FedEx is widely acknowledged as a great place to work. For instance, for the past three years, since its inaugural release, FedEx Express was named as one of the top global companies to work for by The Great Place to Work® Institute in its ranking of the World’s Best Multinational Workplaces. In order to even be considered for this honor, a company must appear on at least five national Great Place to Work lists and have at least 5,000 employees worldwide. It is our people—our greatest asset—that give us our strong reputation. In addition to superior physical and information networks, FedEx has an exemplary human network, with more than 300,000 team members who are “absolutely, positively” focused on safety, the highest ethical and professional standards, and the needs of their customers and communities. Through our internal Purple Promise and Humanitarian Award programs, we recognize and reward employees who enhance customer service and promote human welfare. For additional information on our people-first philosophy and workplace initiatives, see <http://csr.fedex.com>.

5. Graph available from Ocean Tomo at: <http://www.oceantomo.com/blog/2015/03-05-ocean-tomo-2015-intangible-asset-market-value/>.

Figure 6 Intangibles in M&A



Averages 2010-2012, Data from Houlihan Lokey⁶

Elsewhere in the report, one can find specific data on their human capital. The following is for their largest segment, FedEx Express:

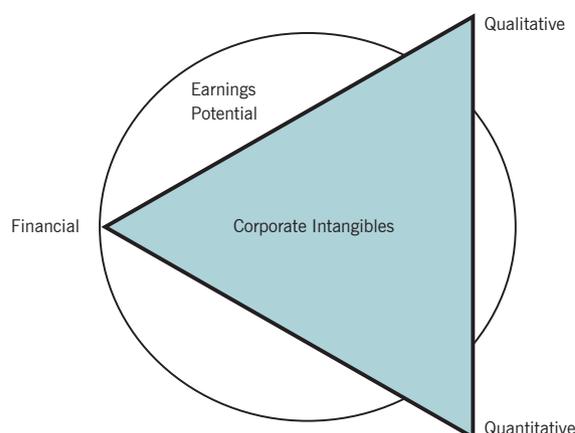
- Financial: \$9.9 billion salaries and benefits, plus pension and severance charges. The company also reported that merit increases had been delayed or eliminated for that year.
- Quantitative: 112,000 full-time and 50,000 permanent part-time employees. The narrative also reported that the employees were not unionized except for their pilots.
- Qualitative: The narrative cites risk arising from lawsuits from the “owner-operator” model they use for many of their drivers.

This is a pretty limited amount of data for a 162-page report. Their CSR site also describes programs but provides little additional data. This is not a critique of FedEx; its approach is representative of the common practice in corporate reporting of presenting financial statements together with significant “narrative” that describes what’s behind the numbers. Intangibles get lip service but not that much hard data.

In the reports of companies experimenting with <IR>, different categories of capital are often featured on separate pages or sections with graphical triangulation data mixed with focused narrative. This can be seen in some of the presentations that companies are beginning to make in their “integrated” reports where they use graphic layouts to display key financial, quantitative, and qualitative data.

Consider, for example, the kind of reporting provided by the Brazilian company Itau Unibanco Holding SA that is shown in Figure 8.⁷ This is more information than is typically included in an annual report and begins to give

Figure 7 Triangulation



a better flavor of how this company manages its human capital.

Why would a company want to expand from the traditional to the integrated model? Because it believes that greater transparency and better information makes it a more attractive employer, partner, and investment—and that, by so doing, it ends up creating more value for all its stakeholders, including its shareholders.

Valuation

How does information on intangibles relate back to the valuation issue suggested in the macro-level measures seen above? The macro data make it clear that money is being spent on intangibles. But, as already noted, there is no clear information about how much is being spent on what, and how much this investment is contributing to increased corporate value.

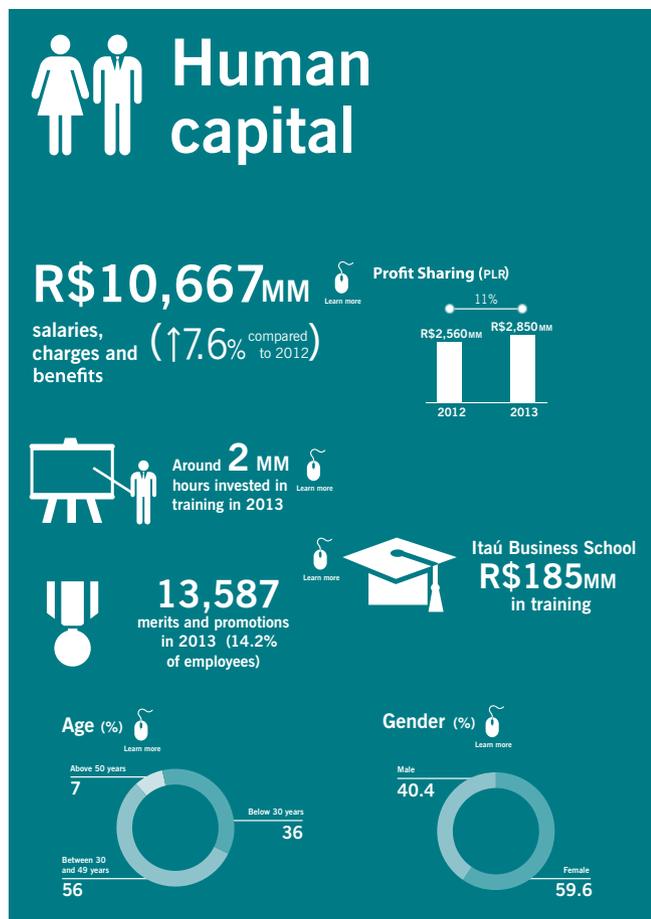
This is not to say that intangibles are not and cannot be valued. This kind of valuation takes place all the time for acquisition and tax transactions, especially for purposes of transfer pricing—for example, when accounting for inter-company use of intangibles like patents and trademarks. But this kind of valuation is still far more art than science. In fact, during one recent experiment, a European chemicals company gave the same information on a patent portfolio to two different valuation firms to value the portfolios for transfer pricing purposes. The company received two very different answers: one valued the portfolio at \$100 million, the other at \$260 million. How did this happen? The answer provides an important lesson about value and valuation in today’s economy.

Valuation is a complex process subject to many regulations and practices. Valuations reflect market conditions but

6. Calculations based on data from Houlihan Lokey Purchase Price Allocation Study available here: <http://www.hlhz.com/us/press/insightsandideas/3814.aspx>.

7. From Itau Unibanco example on the IIRC Examples site: <http://examples.theiirc.org/fragment/217>.

Figure 8 Itau Unibanco Integrated Report Example



also rely heavily on the analysis of the cash flow of the underlying asset or business. At its essence, valuation is a calculation of the present value of the future cash flows associated with an asset or a company. There are many variations on this process but the fundamental steps are straightforward:

Financial statements → Projections → Discount factor → Net present value
Objective → *Subjective* → *Subjective* → *Objective*

Because the input (financial statements) and output (a monetary value) are numerical, the process feels objective and reliable. However, the steps in between of developing and discounting the financial projections can be highly subjective.

The subjectivity comes in the significant number of assumptions that must be made about the company's intangibles. These include, for example, assumptions about the capability and engagement of managers and employees ("human capital"), the scalability of the systems and processes ("structural capital"), the strength of customer relationships and the reliability of the company's partners ("relationship

capital"), and its use of natural resources ("natural capital"). There are no objective measures that inform these assumptions. This is why the valuation process remains the province of trained experts who bring their professional judgment to bear on the process. One can imagine that the better the triangulated data available to a valuation professional—or a business or equity analyst for that matter—the more accurate their findings.

Where was the difference in the two valuations received by the chemicals company? The projections were reportedly pretty similar. But the discount rates used by the two valuation firms were quite different. The discount factor is generally calculated taking into account market as well as company specific risk. This case reflected two defensible but nonetheless subjective assessments of the risk inherent in the projections and the underlying portfolio. But whatever the explanation, this is essentially what is happening in equity markets: different investors and analysts draw very different conclusions in the face of the same data.

There will always be some variation in perceived value in markets. Buyers have different perspectives and information is never perfect. But the size of the intangible information gap remains too large. Information asymmetries create opportunity but they also create risk. The 80% (or greater) gap between net book value and corporate value creates both.

Stakeholder Value

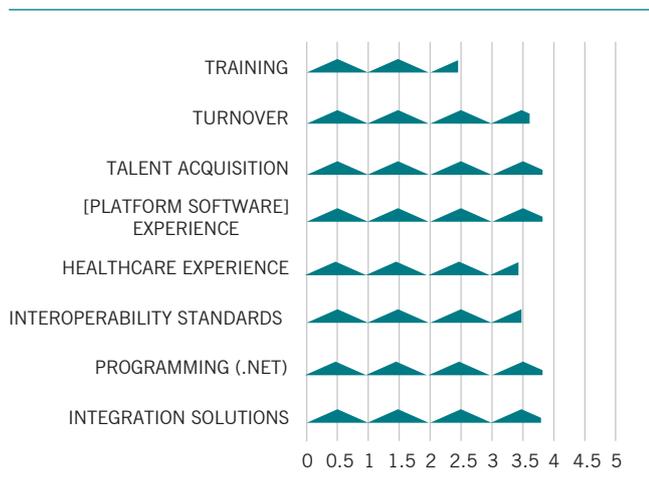
There is one other alternative for measurement of value that bears examination. It's related to the empowerment of citizens and consumers through new technologies. Social media give a voice to anyone with an opinion to share. Companies spend an increasing amount of time listening to and managing these conversations. A lot of this feedback comes through streams in social media such as Facebook and Twitter. There are also rating sites that rate products or companies.

This approach is already well-established in consumer-facing companies. Books and consumer products are rated on sites like Amazon. The experience of staying at a hotel is rated this way on Expedia. The experience of working for a company is rated this way on Glassdoor.

These ratings are, in a sense, "crowd-sourced" measures of intangibles. They provide a special power because they are prepared from the outside in, rather from the inside out, as is the case with triangulated reporting. These data tell the company's story in an authentic, (sometimes) painfully honest way. They can also be a powerful source of learning about what stakeholders really think of you. This kind of data is helpful for making better decisions and also for telling your story to the marketplace.

As explained above, the importance of stakeholder feedback has increased as value creation has become ever more dependent on intangibles. Employees, customers, partners, and communities are critical to a company's ability to create

Figure 9 Sample Stakeholder Rating of Human Capital



value, generate profits and build its valuation. The importance of this relationship between value creation and attraction suggests that companies should move beyond the traditional measures discussed above. If stakeholders are important to a company's future—then why not solicit their opinion of the company?

Figure 9 shows an excerpt from the stakeholder ratings of a software company by its stakeholders. The data was gathered through interviews of internal and external stakeholders by a third party in which they were asked to evaluate (on a scale from 1-5) the strength of key elements of the company's intangible capital. The ratings shown here cover the key employee competencies and the effectiveness of human capital management in attracting, training, and retaining talent. The competency scores were all in a healthy range of 3-4 out of 5. But training received a score just over 2 out of 5. Such data, though admittedly qualitative, paint a much richer picture

of the contribution of the company's human capital to its overall value creation.

These stakeholder data were used internally to make changes that fueled a growth spurt of 27% over the next two years. The data were also included in a business plan that helped the company win its first ever bank line. The power of stakeholder feedback is that it can cut through the noise of diverse sources of data about intangibles. It's likely that this form of data will become more and more common in the future.

Conclusion: Value and Value Creation

The intangibles and sustainability movements are each making contributions to management thinking, bringing a broader and more holistic point of view. Understanding how the basic frameworks fit together is a good first step. But to connect with the everyday work of mainstream businesspeople, we need to join these frameworks to concepts of value creation, measurement and valuation. Intangibles and sustainability are already being measured every day—but not very accurately. The task falls to our twin movements to improve the flow of information, fill in the intangible information gap and demonstrate the value of holistic, integrated business management.

MARY ADAMS is the founder of Smarter-Companies, a company that provides tools to measure, manage and optimize value creation. The company has trained partners in Europe, Africa, Asia, and South and North America. She is also the co-author of *Intangible Capital: Putting Knowledge to Work in the 21st Century Organization*. Previously, she spent 14 years as the founder of Trek Consulting and 14 years as a high-risk lender at Citicorp and Sanwa Business Credit. She received a BA Political Science from Rice University and a Master of International Management from the Thunderbird School (now part of Arizona State).

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