Competing with Intellectual Capital: Theoretical Background

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Competing with intellectual capital

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1 INTRODUCTION

“A phenomenon to be understood or managed must first be delineated and measured.”

1.1 Introduction to the subject

More and more companies are sensing a gap between the modern approach of value creation and the old way of monitoring operations. This discrepancy is typical of the situation companies face today: on the one hand there is modern business reality and on the other inappropriate traditional evaluating methods. Many analysts consider that new business criteria require new indicators for accurate business decisions.

Traditional companies based their business on physical and financial capital and modern companies base it on knowledge. That knowledge resides inside the employees who convert it into more or less value depending on their abilities. In order to manage that value creation we need a modern tool to measure it. According to P. Drucker, the traditional approach is still buying low and selling high which is why costs were subtracted from income so that earnings could be calculated, and why so much attention was focused on costs. The new approach defines business as the organization that adds value and creates wealth. This is how the shift is made from costs to the creation of value. The introduction of the EVA concept in the 90-ties represented a shift into the right direction. Drucker believes that measuring the value added overall costs, including the costs of capital, EVA represents a measure that actually expresses the productivity of all factors of production. EVA can be considered the first step from costs to value added monitoring.

There is no doubt that with Activity Based Costing and EVA progress was achieved in controlling information of business activities. The introduction of the concept of value added met the essence of modern and future business activities of a company: the domination of input (costs) gave way to output (created value). However, the present accounting system, although improved by ABC and EVA, has remained closely tied to capital employed and financial capital flows. Thus it does not include what is crucial for contemporary business, information on the performance of intellectual capital. The measurement of business success seems to be in for a real revolution.

1 Quinn (1992)
3 See Drucker (1995)
4 See Stewart and Stern (1991)
5 See Handy (1994)
1.2 Research question

The study of the field of IC is akin to the pursuit of the “elusive intangible”. IC is typically conceptualized as a set of sub-phenomena. The real problem with IC lies in its measurement. Unfortunately, an invisible conceptualization – regardless of its underlying simplicity – becomes an abyss for the academic researcher. To make matters worse, IC is conceptualized from numerous disciplines making the field a mosaic of perspectives. Accountants are interested in how to measure it on the balance sheet, information technologists want to codify it on systems, sociologists want to balance power with it, psychologists want to develop minds because of it, human resource managers want to calculate an ROI on it, and training and development officers want to make sure that they can build it. This field may be growing at a fantastic rate, but does anyone know where it is heading?

Considering these differences it is obvious that the measurement system analyzing the business activities in a company has to be changed and adapted. The once significant resources are becoming less important from the standpoint of modern business since knowledge has become the basic resource. However, there are still no appropriate information models providing necessary information on IC business activities, which is exactly the Achilles' heel of modern companies.

Since the above-mentioned course of information is hardly even monitored this will be the focus of this paper. Some propositions are also provided for empirical research, in order to identify the possibilities for measuring IC and its impact, thus providing a theoretical basis for the further considerations regarding the measurement of IC in the Competence Center.

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6 See Chatzkel (1998)
2 DEFINITIONS AND EXISTING LITERATURE

Organizational economics and organization theory hold that firm-level differences in knowledge do exist and, moreover, that these differences play a large role in determining economic performance. These approaches include mainstream strategy\(^7\), the resource-based view of the firm\(^8\), evolutionary theory\(^9\), and core competencies\(^10\).

Much of the literature on IC stems from an accounting\(^11\) and financial perspective. As it is applied today, the term, IC, has many complex connotations and is often used synonymously with intellectual property, intellectual assets and knowledge assets. Intellectual property is legally defined and assigns property rights to such things as patents, trademarks, and copyrights. These assets are the only form of IC that is regularly recognized for example in accounting. Patents, trademarks and other intellectual property rights though are recorded at their registration cost but not their potential value in use. Goodwill is recorded only when a business is sold (acquired). The Society of Management Accountants of Canada (SMAC) in SMAC 1998, defines intellectual assets as follows: “In balance sheet terms, intellectual assets are those knowledge-based items, which the company owns which will produce a future stream of benefits for the company.” Within this knowledge view of the firm, the organization is seen as an institution for integrating knowledge, the critical input in production, and the primary source of value is knowledge; all human productivity is knowledge dependent, and machines are simply embodiments of knowledge\(^12\). According to Dr. Karl Sveiby, this emerging view of the firm may require a fundamental shift in the way we think about organizations. “Managers often have an unconscious and tacit mindset that is colored by the values and the common sense of the industrial age. To see another world, they need to try to use a conscious mindset such as the knowledge perspective.”\(^13\)

The first use of the term "Intellectual Capital" is attributed to John Kenneth Galbraith\(^14\), who in a letter to economist Michael Kalecki 1969 wrote: “I wonder if you realize how much those of us in the world around have owed to the IC you have provided over these past decades.” He believed that IC meant more than just “intellect as pure intellect” but rather incorporated a degree of “intellectual action”. In that sense, IC is not only a static intangible asset per se,

\(^{7}\) See Ansoff (1965); Andrews (1971)

\(^{8}\) See Penrose (1959); Rubin (1973); Teece (1982); Wernerfelt (1984); Barney (1986, 1991); Dierickx and Cool (1989); Hall (1992)

\(^{9}\) See Nelson and Winter (1982); Winter (1987)

\(^{10}\) See Prahalad and Hamel (1990)

\(^{11}\) See for example Birkett (1995)

\(^{12}\) See Grant (1996)

\(^{13}\) See Sveiby (1997)

\(^{14}\) See Feiwal (1975)
Definitions and existing literature

but an ideological process; a means to an end. In 1991 Tom Stewart defines IC as: “the sum of everything the people of the company know which gives a competitive advantage in the market.” Leif Edvinsson, Skandia, and Pat Sullivan define it\(^\text{15}\) as: “Knowledge that can be converted into value.” And in Laurence Prusak’s\(^\text{16}\), Ernst & Young definition becomes even more “packaged”. He defines it as: “Intellectual material that has been formalized, captured and leveraged to produce a higher-valued asset.” Both Skandia and Ernst & Young emphasize the static properties of knowledge, that is: inventions, ideas, computer programs, patents, etc., as IC. Edvinsson & Sullivan also include human resources, but emphasize that: “it is clearly to the advantage of the knowledge firm to transform the innovations produced by its human resource into intellectual assets, to which the firm can assert rights of ownership.” Skandia’s taxonomy for IC is basically the same as in the Intangible Assets Monitor, because they are from the same origins, but Skandia has grouped them slightly differently and added more detail. Unfortunately, the attempts to assign a valuation to software assets, trademarks, experience and employee know-how have run so far into the difficult problem of pricing such assets. It is now widely understood that the costs of acquiring knowledge and the profit-generation potentials of such knowledge are unrelated. The value of intellectual property is in its use, not in its costs. This means that they are only worth what a customer is willing to pay for. It is the risk-adjusted interest in future earnings, in excess of the cost of capital, which an investor is willing to pay for as the value of any intangible assets. Since investors cannot differentiate between the price of capital for financial or knowledge investments because they are intermingled, this can be used as an approximation. Following this thought a simple equation could result: Knowledge Capital equals Economic Value-Added divided with the Price of Capital. It is important through, to recognize, that we cannot only talk about intangible assets without mentioning intangible liabilities\(^\text{17}\).

Much has been said about the need to link the IC of the firm to strategic objectives\(^\text{18}\) and a number of companies are now experimenting with IC management frameworks that attempt to achieve this. From these efforts, several methods of managing, measuring, and reporting the IC of the firm have emerged and each has taken a somewhat different approach.

The Intellectual Capital Model which was collaboratively developed by Leif Edvinsson form Skandia, Hubert St. Onge from the Mutual Group, Gordon Petrash at The Dow Chemical Company and Charles Armstrong of Armstrong Industries, assumes that IC is the balance of human, customer and organizational capital that optimizes the organization’s value space

\(^{15}\) See Edvinsson and Sullivan (1996)

\(^{16}\) See Prusak (1997)

\(^{17}\) See Harvey and Lusch (1999)

\(^{18}\) See Stewart (1997); Edvinsson and Malone (1997); Brooking (1996); Sveiby (1997)
which is its ability to generate a return on assets to stakeholders\textsuperscript{19}. Within this system of classification, the IC of the firm has the following properties: it can be fixed as in the case of a patent, or flexible as in the case of human capabilities; it can be both the input and the output of a value creation process, that is, IC is "knowledge that can be converted into value"\textsuperscript{20} or the end product of a knowledge transformation process. No matter how strong an organization is in one or two of these factors, if the third is weak, or worse, misdirected, that organization has no potential to turn its IC into corporate value\textsuperscript{21}.

Starting with this, one can move to the question, how we can go about measuring something all this encompassing. European companies have taken the lead in developing measurement systems for their intangible assets and reporting the results publicly\textsuperscript{22}. Collectively, these companies developed hundreds of indices and ratios in an effort to provide a comprehensive view of intellectual assets at hand. Examples of IC indicators can be also found in Appendix 1. Different focuses have been placed on the research concerning IC. Some of those are:

\textit{a) Tax policy.}\textsuperscript{23} This examines the implications of intangible assets on taxes.

\textit{b) Human capital.}\textsuperscript{24} This examines valuations of labor and employment as well as training issues. One could also consider the concept of Deferred Labour costs\textsuperscript{25} and Human Resource Accounting\textsuperscript{26} in this context. As defined earlier, human capital represents the human factor in the organization; the combined intelligence, skills and expertise that gives the organization its distinctive character. The human elements of the organization are those that are capable of learning, changing, innovating and providing the creative thrust which if properly motivated can ensure the long run survival of the organization. After Hermanson’s study\textsuperscript{27} the topic of how to and whether to value human assets has been debated ever since.

\textsuperscript{19} See Arthur Andersen (1998)
\textsuperscript{20} See Edvinsson and Sullivan (1996)
\textsuperscript{21} See Edvinsson and Malone (1997)
\textsuperscript{22} They include Skandia AFS, a subsidiary of the Skandia insurance and financial services company, WM-data, a computer software and consulting company, Celemi, a company that develops and sells creative training tools, and PLS-Consult, a management consulting firm.
\textsuperscript{23} See Fullerton and Lyon (1995); Light (1998)
\textsuperscript{24} See Hand and Lang (1998); Johanson (1998); Kelly (1998); Lynn (1998); Reich (1997); Rossett (1998); E & Y BCI (1997)
\textsuperscript{25} See RSA (Royal Society for the Encouragement of Arts, Manufactures and Commerce) Inquiry (1995)
\textsuperscript{26} See OECD (1996)
\textsuperscript{27} See Hermanson (1964)
Definitions and existing literature

**c) SEC and financial reporting issues.** Here the link between IC and financial results is being discussed. This is an indirect measurement of IC in that it is being measured through financial indicators. The link is formed in these cases based on share prices and other non market – based valuations. There is no question that the world’s stocks are priced differently than they were at the start of the 1990s. Historic accounting conventions underestimate both earnings and book capital when companies spend on "intangibles" which are increasingly the sources of value in today's global economy. Since there is no accounting methodology recognizing the value of investments in intangible assets, current stock market valuations are more reasonable than they appear. Non-financial indicators of investments in "intangible" assets may be better predictors of future financial performance than historical accounting measures, and should supplement financial measures in internal accounting systems. This discussion has produced calls for firms to publicly release non-financial information on the drivers of firm value. The value relevance of customer satisfaction measures using customer, business unit, and firm-level data should provide some insights for example. Recent moves to include customer satisfaction indicators in internal performance measurement systems and compensation plans can be explained with this. Since customer satisfaction metrics also have some predictive ability and value-relevance to the market, the issue of mandatory external disclosure of these measures also arises.

A further possibility within the financial frame would be to use the Tobin’s q which calculates the difference between the book value and the replacement cost of the companies assets. The Management Value Added would be another possibility. This calculates the Knowledge Capital as what is left after all costs are accounted for in relation to the price of capital. Finally one could calculate the Calculated Intangible Value which is a method adapted from brand equity calculations, where the premium supplied by the brand equals the asset value of this brand.

The traditional models used for performance measurement ignore to a great extent the measurement of IC. At a macro-economic level, the accounting system for example may be impeding innovation and investments in knowledge and skills. At firm level, the current accounting model provides at best an incomplete picture of business performance.

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28 See Abbody and Baruch (1998); Barth et. al. (1998a); Barth and Clinch (1998); Barth et. al. (1998b); Bryan (1997); Deng and Baruch (1997); Deng and Baruch (1998); Huber (1998); Leadbeater (1998); Baruch and Zarowin (1998)

29 See Bryan (1997)

30 See Ittner and Larcker (1998)

31 See Quinn (1992)

32 See Strassmann (1996)

33 See also Rütte and Hoenes (1995); Ambler (1996)
3 WHY MEASURE? RELEVANCE AND CONTRIBUTION OF TOPIC

“All men by nature desire knowledge”

Aristotle (384-322 BC), Greek philosopher Metaphysics, Book 1, Chapter 1

Knowledge in organizations has been considered by many, defined by some, understood by few, and formally valued by practically no one. That’s why knowledge management is one of the greatest challenges facing business leaders today and tomorrow\(^{34}\).

Although intangible assets may represent competitive advantage, organizations do not understand their nature and value\(^{35}\). Managers do not know the value of their own IC. They do not know if they have the people, resources or business processes in place to make a success of a new strategy. They do not understand what know-how, management potential or creativity they have access to with their employees. Because they are devoid of such information, they are rightsizing, downsizing and reengineering in a vacuum.

Until recently there has been little attempt to identify, and give structure to, the nature and role of intangible resources in the strategic management of a business. This is partly due to the fact that it is often very difficult for accountants and economists to allocate an orthodox valuation to intangibles as they rarely have an exchange value. In consequence, they usually lie outside the province of the commodity based models of economics and accountancy\(^{36}\).

Indiscriminate discarding of knowledge assets, whether in the form of accumulated employee training or legacy software, has origins in ideas proposed over a century ago about the value of capital and labor.

These theories claim that only capital assets increased the productivity of labor. Consequently, the productivity of an enterprise is measured only in terms of the productivity of its capital, such as Return-on-Assets or Return-on-Investment. By this reasoning, those performing the actual labor are not entitled to collect rent from the knowledge they have accumulated. Labor can receive only fair compensation for the time worked. The above reasoning is not only misleading, but results in judging the value of employees on the basis of their wages, rather than how fast they accumulate useful knowledge. The productivity of labor is not only a matter of wages. Productivity comes from knowledge capital aggregated in the employee's head in the form of useful training and company-relevant experience.

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\(^{35}\) See Collis (1996)

\(^{36}\) See Hall (1992)
The Economic value-added has been previously shown as the net result of all managerial activities. Economic value-added is the net surplus economic value created by the firm, since the suppliers, the tax authorities, all labor, and all shareholder expenses are already fully accounted for. The creation of Economic value-added is something that defies the laws of conservation of energy. These laws state that output of any system in the universe can never be greater than its input. Delivering a positive Economic value-added must be therefore an act of creativity that springs forth from something that is intangible, as if it were an artistic conception. The source of this creative energy is IC. This ephemeral element can be quantified only indirectly by observing how much Economic value-added it yields.

Unfortunately very few organizations view Intellectual Capital as fundamental to their ability to create value, have established linkages between IC and strategy throughout their entities, and are developing and implementing leading-edge processes for measuring and managing IC. Knowledge assets are at least as important as tangible assets. They are sometimes recognized in internal performance reporting, and seldom in external reporting. An increasing number of people think that accounting rules as they relate to IC should be changed. If you consider the accounting view, this is the greatest issue facing accounting in the last 120 years. And we should care because accounting is the system that measures business performance. It matters whether it is doing this task properly.

Many believed the answer was that accounting should change the rules to include Intellectual Capital in financial statements, but this would be the wrong solution to the wrong problem. The original source of virtually all accounting entries is a transaction with third parties. This is why accounting information is considered reliable, even if it does not reflect current market values. Most of the techniques for measuring IC so far are based on indicators, not transactions. This would satisfy no-one: IC-related information which meets the standards for inclusion in financial reporting may remain sufficiently incomplete as to be unsatisfying to those who want to be able to evaluate a company’s performance. Financial statements that combine indicators-based and transaction-based data may end up being perceived as less reliable than transaction-based information alone. Reliability is the cornerstone of credibility. The deeper issue is a fundamental systemic change in how value is created in the knowledge-based economy. Accounting measures value realization, not value creation.

Financial accounting measures and reports on value realization. At present, there is no accepted method for reporting on the creation of value: i.e., value potentially available for future realization. The present challenge is to discover how to measure and report on value creation. Boards of directors and senior management want better ways to evaluate their organization’s value creation performance in addition to (not instead of) value realization. IC has been the catalyst in helping us to understand the value creation challenge. This vision im-
plies that measurement and reporting of IC is not an end in itself but must be clearly related to value creation.

The whole measurement should be focused on providing insights to the Board of Directors and senior management. It should also be based on indicators, not transactions and focus on revealing direction and vectors, not absolute quantities. Including this accounting perspective in the analysis, one additional view can be gained.
4 PROPOSITIONS

If a company scraps 100 forklift trucks before they are depreciated, that will be recorded as a loss. If 1,000 employees with career-life learning costs of at least $150 million leave a corporation, none of the financial reports will reflect that. When knowledgeable employees leave, they are written off as having no value even though during their years of employment the corporation paid for all of the knowledge they acquired on the job. The existing methods and concepts of accounting, budgeting and planning are biased against anything that is not a tangible asset. Knowledge-based strategies cannot be developed unless they are linked to measures of performance, yet traditional financial indicators offer little help in this regard. It was the dependency on traditional capital-efficiency based measures of performance that explains why information finds practically no place among the typical performance metrics that are examined by corporate executives, auditors and investors.

The context for thinking about measuring IC has to start with the obvious: measurement is a fact of organizational life from which there is no flinching. But this does not mean just measurement from an accounting perspective. Since Total Quality Management and Business Process Reengineering, measurement pervades the organizations. It is claimed that “what gets measured, gets done”. But if one thinks about this for a minute one realizes that a lot gets done within organizations, which is not measured. A slight shift of focus would probably come closer to communicating the true importance of measurement in organizations. Measurement is important because “what gets measured can be explicitly managed.” When we measure, we employ a management tool that helps us become more aware of how you processes link to outcomes. This awareness helps us visualize, what it is we are doing and how what we do achieves specific business results. In the case of IC, using measurement as a means of identifying what is to be managed assumes outmost significance. Without measurement of some kind, intangibles such as knowledge are so hard to visualize, that it is almost impossible to manage them. Measurement is the key to managing IC in organizational systems because it is virtually the only way to visualize it so that it can be explicitly managed to achieve specific outcomes. Derived from the above, performance measures for IC should have following characteristics:

*Cause and Effect Relationship. Every measure selected should be part of a chain of cause and effect relationships that represent the chosen business strategy.*

*Performance Drivers. Measures common to most companies within an industry are known as “lag indicators”. Examples include market share or customer retention. The drivers of per-
formance ("lead indicators") tend to be unique because they reflect what is different about the strategy. A good measurement system should have a mix of lead and lag indicators.

**Linked To Financials.** With the proliferation of change programs underway in most organizations today, it is easy to become preoccupied with a goal such as quality, customer satisfaction or innovation. While these goals are frequently strategic, they also must translate into measures that are ultimately linked to financial indicators.

It can be argued that we have barely begun to understand how to measure organizational performance. From the peculiar nature of performance in organizations, which stems from the fact that their performance lies in the future and largely beyond the reach of measurement, some key dilemmas are resulting. There are for example only second best performance measures, new measures appear much faster than we can understand their impact on results and measures lose the capacity to discriminate good from poor performance with use. In the case of measuring IC these factors become all the more significant. These dilemmas cannot be resolved but they can be relieved by adopting a scientific mindset towards measurement, by continually examining and re-examining the impact of measures on the results we can measure, results that occurred in the past. Also one should continually search for new and better measures, in the vicinity of what drives business results, in other words, it begins with the firms strategy. Furthermore one has to find connections between non-financial measures and business results. The analysis of connections among measures is just as important as to measuring in the first place itself. Even this is difficult to do and is fraught with uncertainties, but it is far better than doing nothing.

Two hundred years after Adam Smith recognized the potential role of manufacturing in economic society, the world has entered an era in which the new wealth of nations is tied directly to the creation, transformation, and capitalization of knowledge. Knowledge-based industries, particularly in the science and technology sectors, are expanding faster than most other industries and are transforming the economic infrastructures of many countries. International trade in the knowledge sector is reported to be growing five times faster than in natural resource-intensive industries and is expected to reach $C3.5 trillion in 2002. Employee know-how, innovative capabilities, skills, or as Thomas Stewart puts it, the brain-power of the organization, play a predominant role in defining the productive power of the corporation and account for an increasing proportion of the capital in traditional industries. The need for "colorized" reporting is more than obvious as suggested by SEC commissioner Steven

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37 See also Ittner and Larcker (1998)
38 See Meyer (1997)
39 See www.stentor.com - Stentor, September 1994
40 See Quinn (1992)
41 See Sveiby (1997)
Wallman. Recent estimates suggest that 50-90 percent of the value created by a firm comes, not from management of traditional physical assets, but from the management of IC\textsuperscript{42}.

It is recognized that the IC of a firm plays a significant role in creating competitive advantage, and thus managers and other stakeholders in organizations are asking, with increasing frequency, that its value be measured and reported for planning, control, reporting, and evaluation purposes. However, at this point, there is still a great deal of room for experimentation in quantifying and reporting on the IC of the firm. Given the potential for both complexity and diversity, developing IC measures and reporting practices that are comparable between firms remains one of the key challenges. Some of these measures are summarized in Appendix 1.

\textsuperscript{42} See Hope and Hope (1998)
5 CONCLUSION AND IMPLICATIONS FOR EMPIRICAL RESEARCH

The implications for empirical research are derived from the challenges and needs in this field. The measuring and reporting of IC pose three principal challenges:

a) the need for better tools to manage investment in people skills, information bases, and overall capabilities;

b) the need for some form of accounting measurement that can differentiate between firms in which IC is appreciating versus firms in which it is depreciating;

c) the need to be able to measure, over the long run, return on investment in people skills, information bases, and the organization's capabilities.

These are some of the challenges this field is confronted with, which should have implications for empirical research.

Although its popularity is not disputed, it is important to be skeptical when anyone claims that they have found the magical formula or calculation for IC. It will never be measured in the traditional dollar terms we know. At best, we will see a slow proliferation of customized metrics that will be disclosed in traditional financial statements as addendum's. The study of IC stocks and their exponential growth due to organizational learning flows produces a tremendous amount of energy, energy that can take companies far beyond their current vision. It requires people to rethink their attitudes on this elusive intangible asset and to start recognizing that measuring and strategically managing IC may in fact become the most important managerial activity as we enter the third millennium.

See Ward (1996)
Appendix 1: Possible measures

Some measures for managing IC could be:

1) Human Capital Indicators
   - Reputation of company employees with head-hunters
   - Years of experience in profession
   - Rookie ratio (percent of employees with less than two years experience)
   - Employee satisfaction
   - Proportion of employees making new idea suggestions (proportion implemented)
   - Value added per employee and per salary dollar

2) Organizational Capital Indicators
   - Number of patents and cost of patent maintenance
   - Income per R&D expense
   - Project life-cycle cost per dollar of sales
   - The number of individual computer links to the data base
   - The number of times the data base has been consulted
   - Volume of IS use and connections and cost of IS per sales dollar
   - Income per dollar of IS expense
   - Satisfaction with IS service
   - The ratio of new ideas generated to new ideas implemented
   - The number of new product introductions
   - New product introductions per employee
   - Number of multi-functional project teams
   - % of revenue from new products (younger than 3 years)
   - Profits resulting from new business operations
   - % of R&D invested in basic research
   - Average length of time for product design and development
   - Value of new ideas (money saved, money earned)
3) Customer and Relational Capital Indicators

- Growth in business volume
- Brand loyalty
- No. of customer complaints
- % of repeat customers as of total
- Product returns as a proportion of sales
- Number of supplier/customer alliances and their value
- Proportion of customer’s (supplier’s) business that your product (service) represents (in dollar terms)

Some more measurement attempts should be included at this point:

1. Relative value. In this approach direction is more important that precision.
3. Competency models. By observing and classifying the behaviors of "successful" employees ("competency models") and calculating the market value of their output, it's possible to assign a dollar value to the IC they create and use in their work.
4. Subsystem performance. Sometimes it's relatively easy to quantify success or progress in one IC component. For example, Dow Chemical was able to measure an increase in licensing revenues from better control of its patent assets.
5. Benchmarking. Involves identifying companies that are recognized leaders in leveraging their intellectual assets, determining how well they score on relevant criteria, and then comparing your own company's performance against that of the leaders.
6. Business worth. This approach centers on three questions. What would happen if the information we now use disappeared altogether? What would happen if we doubled the amount of key information available? How does the value of this information change after a day, a week, a year? Evaluation focuses on the cost of missing or underutilizing a business opportunity, avoiding or minimizing a threat.
7. Business process auditing. Measures how information enhances value in a given business process, such as accounting, production, marketing, or ordering.

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44 See Montague Institute (1998)
45 See Kaplan and Norton (1996)
8. "Knowledge bank." Treats capital spending as an expense (instead of an asset) and treats a portion of salaries (normally 100% expense) as an asset, since it creates future cash flows.

9. Brand equity valuation. Methodology that measures the economic impact of a brand (or other intangible asset) on such things as pricing power, distribution reach, ability to launch new products as "line extensions."

10. Microlending. A new type of lending that substitutes intangible "collateral" (peer group support, training, and the personal qualities of entrepreneurs) for tangible assets. Primarily used to spur economic development in poor areas.
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