Intellectual Capital Evaluation: An M&A Approach

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Abstract

Intellectual Capital (IC) is differentiated from two other accounting categories: Good Will and salable Intangible Assets. The Mergers and Acquisitions (M&A) approach is used with projected and discounted cash flow values over multiple years to provide a context of higher-than-book value. Six Balance-Sheet approaches are given (short-term, annual types). IC is linked to action-based assets supported by the highest-and-best use criterion. Ten approaches to Profit and Loss Statement cash flow measurements are given (multiple-year types). Hard knowledge and soft knowledge categories are used to help classify IC. Further, the concepts of single-loop and double-loop learning are expanded to three and four-loop learning to identify higher-order IC across multiple cultures and in trans-cultural contexts. Competitive advantages of IC are viewed in terms of speed, quality, flexibility, creativity, and integrity. Extensive classifications of IC allow the identification of those types of IC in which a given corporation is deficient, giving rise to knowledge liabilities but also opportunity areas.

Intellectual Capital

We can give a preliminary definition of Intellectual Capital (IC) as the ability to create and use knowledge to make profits. There are specific reasons for defining IC in the KM context in terms of profitability. The reasons are:

- First, an IC investment without profitability is what the US Internal Revenue Service calls a hobby, rather than a business.

- Second, if an organization cannot obtain the sustained highest and best use of IC, then the organization is vulnerable to counter attack from a competitor who can, the end result of which could be the death of the organization. Therefore, IC metrics should be linked to profitability or there will be no organization in which to apply the measure of IC.

- Third, we must keep in mind the IC elements embedded in the ongoing profitable operation of the firm that are different than salable IC elements (often called intangible assets). Salable intangible assets (e.g., a patent) are defined in terms of market value that can be obtained when it is sold independently of the company that had put them into profitable action.

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However, the many other elements of IC that Knowledge Management can make visible or create are elements that exist only in value dimensions put into use by an organization. In those value dimensions there are only three rational possibilities for an element of intellectual capital:

- the element enhances profits and can be evaluated as described in this article,
- the element could enhance profits (but has not yet done so) and thus requires creative vision of the future with the dedication and vision needed to support it until it yields profitability, so a *pro forma* of the first possibility needs to be worked out to enhance the IC element, either in the target company to be acquired or in the organization of the buyer that will take over the IC elements and integrate them into its own IC
- the element could reduce profits (but has not yet done so) because the knowledge it embodies is false, and thus requires the same foresight to eliminate its errors before it reduces profits or even destroys the company.
- Note, the irrational possibility is that the organization identifies false knowledge and fails to correct its destructive impacts, and of course this does happen, especially when the people in the organization cannot properly interpret the consequences of knowledge claims because they are locked in their mental models, paradigms, cultures, and horizons.

These reasons do not exclude other ways of defining IC, but they do imply that any other definitions of IC also be linked to profitable results rather than only to concepts, programs, or capabilities. Knowledge can be defined in other terms such as philosophy, psychology, or information technology, but those types of definitions do not focus on an important element of Intellectual Capital, namely, that in common with other forms of capital, it is a factor in profit-making activities.

In sum, these three normative characteristics emphasize the capital side of IC. Any other characteristics can be used to define the intellectual or knowledge side of IC, but if they fail to yield sustained competitive advantage then the organization runs the risk of going out of business and they become irrelevant. For example, in the previous issue of this Journal, Ramon C. Barquin [1] says that at their core, most definitions of KM agree that Knowledge Management is "…the process through which an enterprise uses its collective intelligence to accomplish its strategic objectives." This definition means that a collective activity has a business purpose. The simple provision added by an M&A approach is that if we are considering purchasing a company with these wonderful KM capabilities, then we should evaluate them as forms of capital comprised of intellectual properties (instead of real estate, machinery, etc.).

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Where we can sell off capital elements separately, there is a market value (for tangible or intangible assets) that can also be sold off even if the company goes bankrupt. Where we have to gain benefit from IC only in its use in the company we acquire (or in our company which acquires that company), we are willing to pay a premium price to the degree that IC generates profits for us and is likely to produce sustained competitive advantage.

Therefore, accomplishing strategic objectives is only part of the consideration, since many objectives can be accomplished unprofitably. Most definitions that focus on the "intellectual" side of IC end up with an emphasis on the disciplines, activities, competencies and strengths of KM, forgetting that powerful but unprofitable KM that cannot maintain competitive advantage runs the risk of letting a company fall into bankruptcy.

IC therefore is valuable, as we shall see, in use, and it is more valuable with its highest and best use. As a buyer of a target acquisition, we may have better and more profitable use of the IC than does the company that has developed it, in which case we can afford to bid an aggressively high price for its acquisition or take over. We can also note that the M&A approach is a market-based approach and does not apply well to governmental agencies, unless the governmental entity is being privatized. Where government seeks to bring private sector best practices into its agencies, the basic evaluation exercise of their IC would be to consider the agencies as if they were to be privatized. Finally, we will also have to consider the ethical issues involved in the highest and best use, since unrestrained profit maximization can end up in exploitative disasters.

In a previous article, [2] I described a procedure for a Mergers and Acquisitions (M&A) approach to the evaluation of intangible assets in technology-based companies. This approach uses the buyer's projected discounted cash flow of the target company to estimate overall value of the company one might wish to purchase. Technology-based companies, as discussed in that article, are not limited to advanced engineering of products. A technology base also can be found in communication systems, accounting systems, process control, quality assurance, market forecasting, supply-chain management, and even in documentation through personal computers and data warehousing.

Of course, the pen and paper were "advanced technologies" when they were first invented, and they still provide a technology base—however, we tend to take for granted and evaluate at cost those technologies that all competitors share because they give no particular competitive advantage. We need to differentiate the intellectual capital portion of the intangible assets. We shall begin with the idea that IC is the ability to create, identify, organize, use and renew knowledge to make a profit.

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Action-Based Assets: Traditional Approaches (Book Value) Versus Alternative Approaches of IC Evaluation

When intellectual assets become an issue of a special evaluation, we are tacitly saying that they make a difference, usually a differential contribution to cash flow by increasing sales or lowering costs. It is at this point that they become more identifiable, since, unlike physical assets that can be physically counted, many of the intangible assets are not simply sitting there waiting for us to count them. Intangible assets are assets-in-use, much like the talent of a performer. Once a new owner of the IC stops being capable of using these assets, he or she would not be able to properly value most of them. We shall look at this more below. A higher-than-book evaluation for a going concern is routinely made by stock analysts and investment bankers, who take an M&A approach and understand how the company can intend to put the IC to good use.

The first reason for not including intangibles in the traditional method of book value is their lack of salability. Banks that foreclose on bankrupt companies cannot sell off the intangibles for liquidation to pay off debt. The bank that does not know how to operate the company profitably and actually put the intangibles to good use cannot realize the value of the action-based intangibles of a company it acquires in default.

Some intangibles, like a patent, may be something that can be sold on the open market. Other intangibles, like a loan at a special discount, may not be transferable. IC includes even less tangible aspects, such as the unusually fast learning capacity of the organization for rapid adjustment in dynamic markets. That capacity cannot easily be packaged and sold on the open market, but it could be the main reason why another company in that industry that has the know-how to put that IC to use is willing to pay a premium to acquire this company.

The second reason for not including IC in book value is the avoidance of fraud. Once intangibles are given a place in book value, in theory they should also be in the pool of assets that can be held in collateral for debt. The company could easily inflate the value of IC and claim that it had more collateral than is real. Also, a company might try to gain tax advantage by depreciating intangibles that might not have market value.

Thus, many intangibles are not so easily salable and have deep connectivity to intellectual capital or the value given to the ability to use knowledge to make a profit. This is also why the opposite valuation for a bankrupt company can also obtain under different conditions. In an orderly disposition of assets, a competitor already in the same business might identify a strong value for intangibles and pay a premium to buy the company to obtain those intangibles and put them profitably to use.

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Thus, there are three levels of traditional evaluation of a company:

- The Lowest Value: liquidation value (forced sale as soon as possible at least price),
- A Medium Value: orderly disposition (sale of assets to outsiders at close to market value), and
- A Higher Value (but not as high as an M&A value): going-concern (sale of assets as part of the business or value of assets in a business that is profitable).

What counts as an asset

In my article on the sales forecast method of evaluation, which has many variations found in mergers and acquisitions work, we find a method that evaluates the intangibles globally. "Discounted cash flow analysis…is a very common approach. Alfred Rappaport, the Leonard Spacek Professor of Accounting and Information Systems at Northwestern University's Kellogg Graduate School of Management, has suggested that as many as half of the major acquisition-minded companies rely extensively on the discounted cash flow technique to analyze acquisitions." [3, Pp. 38-39] That is to say, from a top-down point of view we considered that the company's future profit stream, total sales less total costs yielded the future years' profits stream, which were discounted to come up with a present value (PV) for the company as a whole.

Present Value (PV) is calculated by subtracting a discount percentage from a projected cash flow in each future year of projections. For example, the PV of 100 million cash flow expected next year and discounted at 15% would be 86.96 million. The PV of 100 million expected in two years would be 75.61 million. In Year three, the PV would be 65.75 million. In Year four, the PV would be 57.18 million. In Year five, the PV would be 49.72 million. In Year 6, the PV would be 43.23 million. In Year 7, the PV would be 37.59 million. Therefore, the total PV over seven years of projection would be the sum of the years (416.04 million), whereas, the simple projection over seven years would be 700 million. The key to PV analysis is the selection of the percentage of the discount rate. The average for risk and inflation rates is 15%, but a higher discount rate would be applied if a buyer perceives greater risk.

In the present article, I want to continue to use this top-down method of valuation, but expand it for a differentiation of value to obtain more specific values for various components of intellectual capital. While others have tried to measure intellectual capital (e.g., Skandia counted the ratio of personal computers to employees), measurement is only one step and it can be a misleading one at that. We can be misled because we can overly restrict, or misrepresent the definition of IC by our choice of measurement techniques and measures, thus

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making the measurement invalid. Whenever we count or measure anything we already reduce it to our particular categories of countability.

The founder of phenomenology, E. Husserl [4] first identified this problem in his phenomenology of mathematics, where counting x plus x presupposes that you already constituted the group "x" by which the second can be added to the first. Without grouping, there cannot be counting because you would only have one and then a different one…not one more of the same. Therefore, whatever we decide is the group, reduces the countable things to membership in the group and may miss other valuable aspects of the underlying concept that "don't count."

Although other philosophers beginning with Plato have recognized the problem of grouping, Husserl made it more fundamental by linking it to the constitutive capacity of intentionality. It is the nature of intentionality to constitute such grouping or combining, and the mathematical application (countability) of this capacity is only one instance. It is a fundamental element in internal time consciousness. [4, Pp. 145]

Highest and best use

An example of losing IC by misclassification of assets can be found in the management philosophy of centralization where the individual contributors on the production line were categorized and therefore also counted as assembly elements, much like machines. So their value was calculated on the basis of quantity of production per time unit. The more they produced, the more valuable they were (the efficiency rate). But the workers were not counted as quality control engineers or quality assurance managers or customer-relations experts or product testing engineers. But the Japanese did not agree. They stopped classifying the workers only as machines and empowered them to produce value in all those other categories. In doing so and putting those intellectual capital assets to use, the value of intellectual capital in that Japanese company will be considerably higher than the American company that restricts its workers to efficiency of production. The action-base of IC means that value is in the cleverness of the beholder who can put the IC to better use.

Therefore, when we start differentiating intangibles for evaluation of elements of intellectual capital, it is imperative that we have the "highest and best use" criterion [5] for grouping elements together for the purposes of counting them. Note, in real estate evaluation this criterion is one of the most common working assumptions. If a real estate valuation does not consider highest and best use, the value of the land could be considerably reduced. For example, a two-acre family farm has one kind of value when counted in the group called "family farms." But it has quite a different value when counted in the group of "available parcels in downtown New York City." In the latter category the use of family farming is no longer the most important aspect to consider.

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Intangible differentiation

A short-term (one-year) strategy for differential valuation of intangibles is to take the global company value and assign percentages to intangibles. For the first strategy of IC evaluation we can start with the balance sheet. If the book value on the balance sheet (the traditional evaluation) is subtracted from the use value when purchased for the highest and best use by another company, then the difference is:

1. Good Will: The external perception referred to as the "Good Will portion" is traditionally thought of as perceptual assets in the form of outsiders' opinions about the company and investors' value for publicly traded stock
2. Customers' esteem for the company, brand loyalty, etc.
3. Intangibles: what can be sold on the market but are not on the balance sheet, such as advantageous transferable loans, special agreements or transferable lease terms, special licenses, patents, etc. [6]
4. IC: what is usually not assigned a value; and
5. Market Dynamics in the case of a public company.

The traditional accounting category of Good Will (any excess over book value in the sale of a company) actually is not one quantity, rather, it is a combination of the external esteem for the company and its internal competencies view as IC, including:

- Market perceptions of the company such as brand recognition, customer confidence, etc.
- Intangibles that are not on the balance sheet but can be sold
- The use value of the intellectual assets that a competent owner can gain by activities, such as increased sales, reduced costs, internal capabilities and external contributions to the common good. This is IC proper, although IC can enhance or diminish the first item, market perceptions.

Once we identify at least three groups as factors responsible for the excess over book value, the differential becomes a number that we can analyze in important ways.

Table One -- A Nominal Example of Short-Term Value Components

Highest and Best Use Valuation	1,000,000
Less Book Value	- 500,000
Excess over Book (Good Will)	500,000

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Less (1) External Perceptions of The Company	- 100,000
Less (2) Salable Intangibles	- 100,000
Equals (3) Internal IC	$300,000

The differentiated amount contributed by one intangible as opposed to another requires at least six types of differentiation of IC based on the first strategy for evaluation with a balance-sheet approach. These are listed in Table Two. We will now look at these six categories of the first strategy, the short-term or annual balance-sheet approaches, one by one.

Table Two -- Different Aspects of IC

1. Present perception	A valid highest and best use category for grouping
2. Past-looking	An accounting of the expense of developing the asset [36]
3. Future-looking:	An estimate of the depreciation rate versus appreciation rate over time
4. Future-looking:	A contribution to cash flow through sales enhancement or expense reduction
5. Internal-looking:	A contribution to corporate competencies
6. External-looking:	A contribution to the common good

A Balance Sheet Approach

Valid highest and best use category

The first step in intangible asset differentiation is the present perception using a valid highest and best use category. This is simple on the surface, but complex in depth. For example, a typical American owner using centralized management usually evaluates labor assets in a simple way as productivity. At first even productivity was mistakenly evaluated as increased speed, which ignored an equally important component of decreased costs in producing at the same speed. When Japanese management found a higher and better use for labor, it had already changed the present perception of what labor is. To change the perception, they had to change management philosophy, the beliefs about nature, the values, the paradigms and the interpretative presuppositions. After all that, they had to implement the changes: highest and best use implies that someone can actually put the change to use. Conceptualizing a fascinating impossibility does not count.

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An Accounting of the Expense

The second category of a balance-sheet approach, is an accounting of the expense of developing the asset. If you sell your company, you want to be reimbursed for the expenses incurred in this development. Knowledge acquisition or knowledge creation (e.g., training or inventing) is like any other business activity to the degree that it is only an expense until it proves itself in a contribution to increasing sales or reducing expenses or maintaining capabilities. A new machine might be designed to increase production, yet after being tested out prove to produce defective goods. If it does increase production, the reduced costs are used to calculate the "payback period" [36, Pp. 553] for justifying the purchase.

Training costs that provide obsolete capabilities have to be written off as a risk that did not work, just as failed R&D programs must be written off. This procedure of tracking expenses is not that difficult if you have the first step. The problem arises when you do not have the first step because when the intangible was being developed you did not even count the expenses that were associated with it. If you now discover something unforeseen that really is valuable, you have to re-track the process by which you developed it. If you develop it a second time the tracking becomes relatively easy by standard cost accounting in project work. Therefore, it is important to identify in advance the potential IC elements, projects, procedures, etc. For this reason, we will discuss some of the types of IC.

Depreciation Rate Versus Appreciation Rate

The third category of a balance-sheet approach of depreciation versus appreciation also depends on the use value of the intangible. The rate of change in value over time can be depreciating even though it is not allowable as a tax category, for example, if some intellectual assets become obsolete as technologies and markets change. Other intellectual assets can grow. For example, a data warehouse gains critical mass over time and becomes more useful when it provides more options from which to choose future opportunities. Initially, the data warehouse will be all expense as the computer system is put into place. Even after it is used, it may not have enough information in it to be very useful. But as the classification categories in the data model become more sophisticated, it captures a more useful range of options for analysis. In a similar way a range of marketing contacts may be worthless when it is small but upon reaching a critical mass may yield significant sales.

Further, IC is sensitive to the cycle of growth and decline in organizational capability (see item 8 below). This means that the ability of the corporation to put assets to the highest and best use is governed in part by the cycle phase.

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If the organization has a large number of potentialities for growth in an ascending phase of the cycle, it is more likely to find good use for IC and increase it (just as in a growing market, a company is more likely to increase sales). If the organization is rigid and repetitive with few potentialities for growth in a descending phase of the cycle, it is less likely to find good use for its IC and stagnate.

There is additional time sensitivity. Further, if you fail to continue with leading edge products and technologies, others can catch up to you to neutralize your initial competitive advantage. Leading edge IC is another way of talking about highest-and-best use. Continual knowledge creation is crucial.

Sales Enhancement or Expense Reduction

The fourth category of a balance-sheet approach recognizes that certain things have contributed to cash flow during the accounting year, but calculating their individual contribution is complicated because not all intangibles have an impact that can be separated. One way to help separate out specific contributions is organizational redundancy: use two teams for an initiative and differentiate them into profit centers. If one team increases sales and/or reduces expenses, its separated techniques can be accounted for when we compare the elements used and the results gained. This is not merely redundancy in the sense of a waste of money. In addition, competitive teams increase motivation and participation, provide more measurability by differentiation, and hedge against having only one chance at success. "The organizational logic of redundancy helps explain why Japanese companies manage product development as an overlapping process where different functional divisions work together [or]…divided in to competing groups thatdevelop different approaches to the same project…" [7]

A Contribution to Corporate Competencies

The fifth category of a balance-sheet approach to corporate competencies is important because not all intellectual capital elements contribute to sales or measurably reduce expenses. Sometimes a competency simply positions a company to bid on a project or gain the attention of a customer, but not make any particular sale. Sometimes a more specific capability simply allows the company to stay in business, as with good security systems, good computer back up systems or well justified levels of catastrophe and business interruption insurance. The value may be the saved expense that could occur if the capability were not in place (e.g., reimburse the down time, recapture expense and loss of market share from interruption in business operations after computers are destroyed in a fire).

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If all competitors have the same capabilities, a buyer of the company might not be impressed with the intellectual capital called "fire insurance," but if the method of calculating adequate rates is innovative and unique, it may demonstrate an unusual capability that is a valuable asset in the accounting department. Another intellectual asset might be continuous improvement in accounting for cost factors in ever-changing project work. When a traditional company does business in traditional ways, for example building the same types of buildings over and over, then the project cost tracking system is rather static and gives no competitive value. But if the company participates in a rapidly changing market and frequently changes types of projects, the traditional cost tracking categories may become obsolete quickly. Therefore, the IC value would be the ability to more rapidly access prior knowledge that has been well captured, e.g., in a knowledge management system, and apply it to reduce the time to bid and develop new, non-standard projects.

A Contribution to the Common Good

The sixth category of a balance-sheet approach concerning the common good is perhaps more puzzling to traditional business people. However, Canon Corporation found that it motivates company associates to work harder and smarter because of their policy of *kyosei*, which means progressively larger realms of cooperation. [8] "But how, many have asked, can global corporations promote peace and prosperity and at the same time remain true to their obligation to secure a profit? The answer, in my experience, is *kyosei*, which can best be defined as a 'spirit of cooperation,' in which individuals and organizations live and work together for the common good."

Mitsubishi found that people do not work for bread alone but need the higher moral concerns of good labor practices and good corporate citizenship. "It is much more difficult to assign a value to a hidden, intangible asset then it is to a clearly defined, visible object, but it can be just as important…Superior management ultimately works to benefit society as a whole, which gives it a very high value indeed. Yet often this important asset is not correctly assessed." [9]

In its famous action, Johnson & Johnson found that paying the high cost of immediately pulling contaminated product off the retailers' shelves translated into the traditional accounting category of Good Will by which the company is held in higher esteem by customers and other social agencies. The actions of the company may not have been done with that outcome in mind, since they were following the corporate mission and value statement. However, that is exactly the purpose of a good mission and value statement: to say what direction the company will take even when it cannot be sure of the consequences.

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A P&L Statement (Long-Term) Approach

Now we can turn to the second strategy in an M&A approach to evaluation of IC, the Profit and Loss Statement (P&L). Sometimes putting numbers to individual intangibles seems somewhat arbitrary. One way to assist in this process is to calculate the difference between balance sheet value and cash-flow value.

- First, isolate balance-sheet IC assets by taking the short-term calculations as based on the annual Balance Sheet as the sum of the three elements: the (short-term) book value plus any salable intangible assets not on the books plus the Good Will of market perception

- Second, subtract these three elements from a long-term calculation of the projected M&A value based on the downstream years of discounted cash flow for a period of years. This gives shows cash-flow value that is above the asset value of outright sale of the company assets (assuming that IC is more than salable intangible assets).

In M&A, analysts typically look at the difference between book value and the long-term discounted cash flow projections to get a second perspective on value by estimating how much profit will be yielded by an acquisition if put to good use by the buyer of the company. The approach I am suggesting here continues with this logic but isolates the IC assets. In the above calculation, what is left is neither salable assets (tangibles or intangibles) nor external perceptions of the company by others (Good Will). What is left is the performance side of the company over a period of years, say, a seven-year period: the internal knowledge base and competencies recognized as intellectual capital.

This performance IC is the profitable use supported by the balance sheet IC, as discussed above, and gives a second evaluation perspective that includes IC in use over time. The long-term, performance intellectual capital (IC) factor can then be represented by the figure of 100%. A simple pie chart can be used to divide up the intangibles in the IC category, based on their estimated weighted percentage of contribution. While this procedure does not begin with the specific IC values per element, it does avoid the error of starting with individual elements and overvaluing or undervaluing them by looking at them in isolation of their usefulness in future cash flows. Of course, this is not fool proof since future cash flows are only projections. But the procedure is worthwhile because starting with IC elements one by one, and building up value from the bottom can end up with either overly optimistic or overly pessimistic values that do not fit their proportion of contribution to discounted cash flow value. By using a pie chart for IC, you have to either fit the IC

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elements into the 100% as the projected PV cash flow for the future years, or you come up with new justifications for changing the cash flow projections (thereby changing what the 100% represents). We now need to consider what types of elements might comprise this long-term cash flow value.

Categories of Long-Term Evaluation of IC.

Karl-Erik Sveiby [10] has divided the Knowledge Management field into a two-by-two matrix. An adapted form of this matrix is in Table Three below.

Table Three -- Sveiby's Classification of Knowledge Management

Information Technology (IT)-Track ***Knowledge = Object*** *concepts from Information Theory*	*People-Track* ***Knowledge = Process*** *concepts from philosophy or psychology or sociology*
"Re-engineers"	*"Organization Theorists" sustainable creative organizations to create new knowledge*
Phase 1: "AI-specialists" Project Databases, Phase 2: Data Warehousing Phase 3: "E-specialists" Interactive IT web pages, e-business	*"Psychologists" improving human individual skills*

I have put additional classification categories in bold type: Horizons of Possibility and Corporate Integrity. Table Four shows an expansion of Sveiby's Classification.

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Table Four -- Knowledge Management Categories

Intellectual Capital Asset/Liability Evaluation Categories	**Hard Knowledge**	**Soft Knowledge**
Track/Level	*Information Technology (IT)-Track* ***Knowledge = Object*** *concepts from Information Theory*	*People-Track* ***Knowledge = Process*** *concepts from philosophy or psychology or sociology*
Organization Level	*"Re-engineers"*	*"Organization Theorists" sustainable creative organizations to create new knowledge*
Individual Level	*Phase 1: "AI-specialists" Project Databases, Phase 2: Data Warehousing Phase 3: "E-specialists" Interactive IT web pages, e-business*	*"Psychologists" improving human individual skills*
Horizons of Possibility	**Corporate and Customer horizons (corporate culture and market culture) A. In Growth Cycle and leading-edge capabilities B. In Decline Cycle**	**Individual, National-Cultural, Civilizational and Human Horizons A. In Growth Cycle and leading-edge capabilities B. In Decline Cycle**
Corporate Integrity	**I. Core Capacities and Competencies**	**II. Trustworthiness III. Ability to Span Contextual Contradictions IV. Metaknowledge**

While there are not universally accepted categories for IC values, it is helpful to have a guided checklist in mind to make sure that you have considered the more obvious counting groups:

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Table Five -- Levels of Intellectual Capital

Learning Types by Feedback Loops	Levels	Names	Listed Numbers in the Text	Measurement	Contexts
Single	A	KM as Know How	1, 2, 3	Tests, Costs	Single Culture
Single	B	KM as Strategy	4	Profits	Single Culture
Double	C	KM as Double-Loop Learning	5, 6	Market Share	Single Culture
Double	D	Knowledge Creation	7, 8	New Market Penetration	Single Culture
Triple	E	Cross-cultural coordination	9	Alliance revenues	Multi-Cultural Alternative Contexts
Quadruple	F	Corporate Integrity	10	Longevity, Sustainability,	Trans-cultural

Level A: KM Know How

Single-loop learning means that the persons have their goals or objectives and then are guided by feedback to achieve them.

1. Hard Knowledge: Capture and Codification of information. “From the capture, codification, and dissemination of information, to the acquisition of new competencies through training and development, to the re-engineering of business processes, present and future business success will be based less on the strategic allocation of physical and financial resources and more on the strategic management of knowledge.” [11]

2. Hard Knowledge: Dissemination of information

3. Hard Knowledge: Re-engineering of business processes

Level B: KM Strategy

4. Perspectives of Application [12] as exemplified in the follow three quotes:

   a) “Business Perspective – This executive level focuses on why, where, and to what extent the organization must invest in or exploit

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knowledge. Which strategies, products and services, alliances, acquisitions, or divestments should be considered from knowledge-related points of view." [This can include the interactive types of KM, such as e-business, e-commerce, developing knowledge, expanding knowledge about and for customers, and knowledge creation.]

b) "Management Perspective –This middle-management level focuses on determining, organizing, directing, and monitoring knowledge-related activities required to achieve the desired business strategies and objectives." [This can include KM career paths, career tracking with continual improvement goals, KM interactive modes such as shareware, e-mail, teleconferencing, transfer of tacit knowledge, simulations and scenarios, as well as the passive tools like data warehousing for transfer of explicit knowledge.]

c) "Hands-On Operational Perspective – this individual contributor level focuses on applying the expertise to conduct explicit knowledge-related work and tasks." [This includes KM career positions, training, cross-training in different disciplines, mentoring, team building, empowering, virtual teams with paperless project management, etc.]

Level C: KM Double-Loop Learning, Including Critiques of System Values and Rationales

Double-loop learning [13] means calling into question the original goals or objectives, so persons do not simply approach the known goal but consciously re-evaluate it and perhaps pose alternative goals. The essence of double-loop learning is that reconsideration of current elements can be done by an act of free will that changes one's focus from goal oriented (single loop) to goal critical (a second perspective that adds the next loop of feedback). The critical perspective is not only an element of knowledge, it is also an element of morality by which knowledge and actions are judged by higher standards.

Note, when we will bring up another loop of learning beyond the second, the change is in terms of accessibility. If all of one's double-loop critical efforts remain trapped in the same cultural horizon, then a double-loop approach is self-limited, which is why triple-loop learning will be discussed subsequently.

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5. "Visualizing and balancing the value system which drives a knowledge production base…to help organizations redesign themselves as virtual businesses (i.e. to minimize their fixed-cost base, transform expense operations into revenue operations, benefit from inter-sourcing and

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outsourcing, establish and manage an alliance strategy, manage distributed value alignment and production, etc.)." [14]

6. Soft Knowledge: Retention of knowledge workers. IC may become more useable when it is identified and captured in KM, but experienced knowledge workers are still more valuable in putting knowledge to use. Soon we will realize that retaining talented knowledge workers capable of continual learning is as important as retaining dedicated customers capable of continual consumption. New paradigm management [15] and transformational leadership [37] point towards the recognition of this IC value.

Level D: Knowledge Creation and Tacit Knowledge

7. Soft Knowledge: The creative depths of business. IC on the edge on discovery is on the way to being valuable but still at risk. There is a high value to be added if individuals and companies find ways to increase the chances of discovery and creativity. Traditional left-brain rational structures, categories, ideas and postulates are only part of the IC of discovery. In addition, there are images, metaphors and analogies that help the advance of ambiguous and tacit contexts for creative breakthroughs, moving eventually towards more logical models. [7] Further, the leadership relies on these same poetic functions to help people obtain a more concrete version of his or her ability to envision the future direction for the company. [16] Many creative opportunities are blocked by the cognitive types of tacit knowledge, including governing paradigms, mental models, accepted traditions, ingrained beliefs, and cultural values.

Nonaka has asserted that there is operational knowledge (what we know in use but cannot tell) and there is cognitive tacit knowledge. "At the same time, tacit knowledge has an important cognitive dimension. It consists of mental models, beliefs, and perspectives so ingrained that we take them for granted, and therefore cannot easily articulate them." [7] We cannot merely try to change these cognitive levels of tacit knowledge, which is why Nonaka says that many Western companies do not see the value of image, metaphor, analogy, and other "poetic" tools of management.

Kuhn [17] recognized that the governing paradigm remains unchallenged precisely because it is taken for granted as true. The cognitive levels become the standards by which alternative possibilities are rejected. Therefore, the dominant paradigms are not so much unchanged because they are inaccessible but rather unchanged because they shape perceptions based on incontrovertible truths. So in the paradigm we do not change our truth standard even if we can verbalize our assumptions. A paradigm shift is a revolution that proves this incontrovertibility to

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be false and people begin to see new things. Methods that increase the ability to overcome those limiting horizons are highly valuable by giving the company the ability to lead the change-curve and sustain competitive advantage. This is discussed further in item number eight, renewability.

8. Soft Knowledge: Renewability of IC. After the creative depths of business launch new programs and new products, the cycle of renewal begins again with the capture, codification, and dissemination of information necessary for implementation. Over time, IC on the operational level tends to become rigid and bureaucratic, requiring a management perspective for re-engineering to make the processes efficient and effective again. But that is not enough for renewal of IC. At the higher level of the business perspective, renewal means what new direction is necessary to sustain competitive advantage. Renewal is blocked by the established horizons of possibility. Within a horizon of possibility, one is capable of doing only more of the same types of things. This concept of the horizon was articulated by Edmund Husserl in *The Crisis*, [18] and was elaborated in many ways by Martin Heidegger [19], as well as others in the field of hermeneutics, such as Paul Ricoeur. [20]

To do new types of things, transformational leaders are necessary to explore and expose hidden presuppositions. There are many hidden and unconscious presuppositions limiting the renewal process, and we can identify five encompassing horizons as the source of these presuppositions: individual, corporate, national-cultural, civilizational, and human normalcy. These presuppositions put limits on IC use until such time as transformational leaders interpret the ongoing events well enough to surface presuppositions and envision alternative futures. Without this process, it is very difficult to enhance IC value over time for sustained competitive advantage. The analyst has to determine the stage of the cycle of growth and decline the corporation is in, to assess properly the life value of many elements of IC.

Growth and decline is determined by potency: how many new possibilities are still available in its horizons. The high value of IC in a corporation with an expansive horizon and rich presuppositions is a scenario that implies it is in the early, potent stages of a growth cycle. Many of those same IC elements in a corporation with a bureaucratic, rigid horizon and impotent presuppositions requires a much lower valuation in the terminal stages of decline. In the terminal stages of its potency, the business now is prey to world-class competitors that are on the ascent and maintaining continual renewal.

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Level E: Triple-Loop Learning, A Multi-Cultural Context

Triple-loop learning means finding a higher, critical perspective on your own conscious double-loop review of goals or objectives. The learning aspect of the third loop is feedback from either cross-cultural comparative research or cross-cultural authentic dialogue. Dialogue arises out of an actual confrontation of different cultural perspectives that force one to question what normally would not be questioned because everyone in your own culture shares your same beliefs and world view. For example, this learning mode occurs in cross-cultural strategic alliances or even an individual company's attempts to penetrate new markets in other cultures. In this confrontation you begin to learn when someone from another culture challenges your beliefs, values, and hidden presuppositions. [30, Pp. 153 ff.] These IC elements otherwise would not arise in the organizational knowledge confined to one culture.

In psychotherapy, an individual can also learn with a third loop through the perspective of the therapeutic process that reveals what otherwise would be repressed from consciousness. If you remain trapped within your own cultural horizon, you would have difficulty gaining an outside perspective on what you do. Frequently, this third loop comes from cross-cultural perspectives that were formed beyond one's own range of consciousness, so that the criticism and re-evaluation pose new goals that are not limited to one's own tacit or explicit horizon of interpretation.

One's horizon can be more or less explicit when a world view is consciously adopted or an ideology is asserted. However, a horizon usually builds up historically and thereby carries many tacit presuppositions that are not easily accessible. This type of IC is gaining in importance in proportion to the globalization process. The Globalization process involves global competitors, dynamic markets with customers selecting from global products, and changes in economic/political contexts due to breakdown of artificial protectionism by nations.

9. Soft Knowledge: Cross-cultural implementation of IC.

    a) The Alliance Level across companies: Globalization is putting increasing demands on corporations to become world-class competitors. This means in part much higher fixed assets to obtain global capabilities, so an increase in sales is necessary to cover costs. However, few, if any, companies can be so competitive all over the world. Therefore, the logic of globalization is also the logic of cross-cultural alliances and network partners to expand capability. [21] As was noted in item five above, alliances are important ways to visualize the value system. However, cross-cultural implementations of alliances present new challenges. Just

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as established horizons limit change and demand an interpretative system for renewal, so also horizons limit cooperation and demand an interpretative system for cross-cultural understanding. Without a specific process for implementation across cultures, the evaluation of IC alliances must recognize a high risk since there is greater chance of misunderstanding and a breakdown of the alliance.

b) The Corporate Level within one company: The traditional organizational chart shows each functional executive with subordinates all confined within that department or functional group, such as engineering, marketing, systems, production, logistics, etc. These functions have their horizons established in paradigms, disciplines and specializations—often supported by Professional Associations, disciplines in Universities, and Standards. Each discipline interprets the requirements of the corporate goal from their own perspective. Therefore, there are internal conflicts of interpretation within one company just as there are external conflicts of interpretation among the independent companies that are alliance members.

c) Solutions: I have formulated a method, called Structural Interpretation, [37] that both overcomes the vicious hermeneutic circle and also provides a basis for mapping interpretations across cultures, regardless of the scope of the governing horizons such as the individual, functional, corporate, national-cultural, civilizational or human horizons. Only by adequate interpretation of ambiguous cultural factors can a company expect to align itself (1) externally with another, equally powerful company to work together successfully, and (b) internally so that departments and functions can work together successfully.

Level F: Quadruple-Loop Learning, a Trans-Cultural Context

Quadruple-loop learning means being able to take a higher, philosophical position on the multi-cultural possibilities learned in a triple-loop. The fourth loop requires a higher position that is above the relativism of alternative cultures. Learning occurs from the fourth loop of feedback from comparing one's knowledge acquisition with trans-personal and trans-cultural universals. In science, this is the level of a unified theory and cosmology, considering overriding criteria such as elegance and parsimony of explanation. In religion this is the level of revelation or trans-personal experience. In philosophy it is the level of metaphysics and ontology. In knowledge management it is a critique on the level of metaknowledge.

Triple-loop and Quadruple-loop learning are complementary.

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- Quadruple-loop Priority: It is exactly in the face of the relativism of competing triple-loop challenges that quadruple-loop learning becomes important and earns its position in knowledge management. That is, the problem with triple-loop learning is cultural relativism: which cultural perspective is true? A quadruple-loop allows us to learn over and above various cultural positions. In other words, quadruple-loop learning learns species-wide knowledge applicable to any culture.

- Triple-loop Priority: Without the respect for diversity gained from triple-loop learning, it is too easy for quadruple-loop learning to become a mask for an inauthentic colonialism and a dominating ideology that can lead towards totalitarianism. Quadruple-loop learning also needs to maintain openness to new confrontations from cross-cultural perspectives. Just because we believe we have established a "universal" philosophical position, that does not mean that it cannot be improved, expanded or questioned.

This higher level has been called by various names, such as transcendent knowledge or universal knowledge. It can best be understood as both a more encompassing paradigm in science (universalism) and a more spiritual point of view. For example, Max Weber in his classical study of the Protestant ethic and the spirit of capitalism noted that there was a transcendent motive to overcome the previous assumption that there was a contradiction between gaining wealth and not spending it. The purpose of acquired wealth had been to spend it conspicuously, indulge oneself and to enjoy it.

Protestants spanned the contradiction and stopped practicing this conspicuous consumption of the rich. They saved money, so it became a pool of capital available to re-invest. The motivation came out of what was learned in a transcendent perspective, not a business perspective. Many of these business attitudes were learned from the new emphasis on work developed in the Medieval monasteries. "The striking of the hour calling him to his prayers, his spiritual exercises and his work, existed for him alone, and this sort of life involving a plan was the first form of an organized and rational life, as the sociologist Max Weber has established." [22, Pp. 246] While other levels are measured in terms of things, this level is measured in terms of longevity and sustainability that serves the common good.

10. Soft Knowledge: Corporate Integrity. The last IC category is the most powerful and yet the most difficult. Most companies today think of corporate integrity only in terms of ethical standards like honesty, which function on the previous level of double-loop learning. Yet integrity also means strength of materials or internal ability to hold together in the face of external demands and opportunities. In that

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sense, corporate integrity is bi-directional (inward facing and outward facing):

a) Inward-looking integrity

I. The core capacities to maintain the corporate mission and identity in the face of adversity, and a transcendent motivation is stronger than those of simple self-interest. It is important for business to be able to seize the moral high ground and be willing to subject its profit-making activities to moral restraints. This includes the social capital of mutual trustworthiness within the company. [35] Alignment: a good fit between strategy and capability, as well as among the various functional areas needed to implement the strategy. We will note the problem of misalignment when we look at knowledge liabilities below.

b) Outward-looking integrity

II. Trustworthiness by which others are willing to rely on you for future performance, whether as brand loyalty in the market or corporate citizenship in the world community. This expands the moral high ground of the organization to include its relationships to its many stakeholders. This includes issues such as sustainability, ecological balance, environmental responsibility, promotion of diversity, equal opportunity, and a wide variety of other moral issues.

III. Ability to span contextual contradictions that exist in dynamic markets, and the limitations of a current cultural horizon. Contradictions seem to arise when the current paradigms and models are no longer adequate. For example, a model of the universe and nature can be stretched beyond its inherent capabilities. In the medieval universe, the model of the earth-centered universe generated contradictions as more scientific data was uncovered, especially by the telescope. This relies on triple-loop approaches to identify seeming-contradictions and break out of the horizon that binds even double-loop self-reflection, yet it must also go further to include quadruple-loop trans-cultural perspectives.

IV. Meta-knowledge: our ability to support and enhance our knowledge advantages, including both institutional budgets for knowledge enhancement and intellectual capacities for critical review of knowledge limitations that lead to additional expansions [23]

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There are several results from evaluating intangibles. First of all, you find out what you have and to what degree its value may contribute to your future profit stream. Second, you can make what you have more usable because, "being non-physical does not mean supernatural…The very *raison d'etre* of KM is to treat as tangible what has so far been untagged, hence making it manageable." [14] Third, you can shift from the management mode to the leadership mode and increase your focus on knowledge creation by using what you have in new ways and discovering what you do not have.

Michael Polanyi not only discussed the untold aspects of the tacit dimension but also the greater complexity of human potentials and the intangibility of that potential. "Persons and problems are felt to be more profound, because we expect them yet to reveal themselves in unexpected ways in the future, while cobblestones evoke no such expectation. This capacity of a thing to reveal itself in unexpected ways in the future I attribute to the fact that the thing observed is an aspect of a reality, possessing a significance that is not exhausted by our conception of any single aspect of it. To trust that a thing we know is real is, in this sense, to feel that it has the independence and power to for manifesting itself in yet unthought of ways in the future. I shall say, accordingly, that minds and problems possess a deeper reality than cobblestones, although cobblestones are admittedly more real in the sense of being *tangible*…this is to class our knowledge of reality with the kind of foreknowledge which guides scientists to discovery." [24, P p. 32-33]

When we restrict our attention to the R&D department we have more familiar paradigms for knowledge acquisition, discovery, and knowledge creation. We have to keep in mind that it is one thing to do applied research where a company depends on already existing science and applies it in new ways (innovation). It is another thing to create breakthroughs in basic science that allow for a new generation of products based on new materials, new processing techniques, or other breakthroughs. [25] Venture capitalists are always looking for the latter, as in their current interest in biotechnology, because patented breakthroughs can be the basis for sustained competitive advantage for decades. Here the value of the breakthrough is often how fast and how far a company can grow to exploit it. [26]

First World countries in the West have been the leaders in basic research. Developing countries beginning to grow on the knowledge curve as well as developed countries like Japan with a vast knowledge base of innovation are beginning to seek ways to promote risk taking, exploration, more advanced universities, and creativity. Although Western individualism has proved in the past to be a good source for the lone revolutionary who finds a scientific breakthrough, the Japanese also are seeking their own versions in their own culture. "Thus, the Japanese notion of creativity can be visualized as a helix, in which each revolution through the cycle leads one to higher and higher levels of creativity. The ultimate level of creativity, if it can be achieved, is *satori*, or

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spiritual enlightenment, in which the creator and the idea become one." [27, Pp. 53]

Before closing, we should note that if our aim is accounting, we also have the problem of liabilities. KM theorists have the tendency to treat all knowledge as assets. But we also must account for knowledge liabilities. These raise the problem of truth [28] and can take several forms:

- Inadequate or incomplete knowledge relative to some purpose
- "Seeming knowledge" (erroneous knowledge that seems to be true)
- Barriers to knowledge that result from inappropriate mental models
- Mis-interpretations (models of corrections are seen in great reinterpretations, such as (a) Nietzsche's reinterpretation of values, (b) Marx's reinterpretation of class struggle, and (c) Freud's reinterpretation of the illusion of the autonomous ego),as well as the hermeneutics of suspicion which taints knowledge with mistrust [20] Knowledge liabilities can reduce profits and undermine sustained competitive advantage. Knowledge liabilities are perhaps even more difficult to identify (to say nothing of evaluate) than positive knowledge. We have some precedents in the form of productivity estimates. We recognize that productivity requires investment and that low productivity in a company or a nation is a first-priority problem, even if not a formal liability. We can generalize this category to cover all opportunity costs and missed opportunities. Obviously, we cannot account for everything a company did not do. However, we can begin to classify as liabilities monies spent unnecessarily instead of waiting for the value of items to show up as the difference between what something was purchased for and what it was sold for. This is an important exercise in management accounting even if it cannot be used for fiscal accounting purposes. For example:

(1) Investments in productivity that did not yield results, such as training costs, lost production due to a training curve on a new method that did not produce the desired results, etc., or investments that were completed as designed but failed to be aligned properly with the company's strategic objectives (these problems can be improved by better planning and prior analysis of how well the KM element will fit with and profitably support the corporate goals, values, and objectives)

(2) Turnover costs, which usually underestimated because they include not only lost time and recruiting costs, but also the impact of mistakes and a new person delaying coordinated efforts when the new person needs to become familiar with company policies, procedures, systems and culture (these problems can be improved by TQM, empowerment, career planning, personal development, etc.)

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(3) Duplication of effort where time and effort are spent in other parts of the company to re-do what has already been accomplished somewhere in the company (improved by data warehousing, best practices tracking, etc.)

(4) Extra costs associated with late entry into the market, including lost market share, additional advertising to try to regain position, or even collapse of the company when innovators win the market [26] (improved by increased knowledge creation, R&D capability, reduced product innovation cycle time, or better strategies to benefit from Second-Mover advantages)

(5) Extra costs associated with repetition and delay from misunderstanding and miscommunication (improved by cross-cultural knowledge management, TQM initiatives, [29] etc.)

(6) Extra costs associated with a lapse in corporate image, including remedial public relations, extra media expenses, and external lobbying (these perceptual liabilities can be improved by corporate integrity)

(7) Extra costs associated with unnecessary internal lobbying and political maneuvering, in an atmosphere of mistrust, that people use to gain factional advantage instead of working for the common good within the company as a whole (improved by corporate integrity internally with empowerment, team building, creating an atmosphere of trust and appreciation for diversity; this requires a deep understanding of business ethics and social morality) [32] [35]

(8) Extra costs (fines, law suits, clean ups, etc.) associated with inadequate acquisition and application of knowledge about corporate impacts on the common good in the company's external economic, social and environmental contexts (improved by research, good business ethics, environmental impact analysis and accumulation of long-term data on contexts, including customer tracking as well as social and environmental impacts)

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Table 6: Summary of Some Competitive Advantages through IC

	Advantages in Speed	Advantages in Quality	Advantages in Flexibility	Advantages in Creativity	Advantages in Integrity
1) IC as Historical & Preserving	Access to Best Practices: History	Total Quality Management Built into all Types: Zero Defects	Use Structural Interpretation of competency	Challenge old mental models	Internal trust high, yields cooperation and can reduce turnover
2) IC as Future & Directing	Ready exchange of knowledge	Inferences from Former Best Practices towards new opportunities	Use Structural Interpretation of opportunity	Support Knowledge Creation	External trust high, yields brand loyalty
3) IC as Structural & Strategic	Efficiency Effectiveness Continual Improvement	Accuracy Innovative	Change practices, Transforma-tional Leadership	Organizational transformation to gain new knowledge faster	Spanning of contradictions to overcome old paradigms yields breakthroughs
4) IC as Global	Responsive-ness to global issues as they break out in highly dynamic markets	Ready feedback from stakeholders	Adaptation to market trends and cultural megatrends	Use cultural diversity and challenges to world view for continual corporate renewal	Responsiveness to multi-cultural and diverse stakeholders yields better cross-cultural alliances and corporate citizenship with a high standard of business ethics

The Table above shows a brief review of how Intellectual Capital can give competitive advantage to a business in terms of such factors as speed, quality, flexibility, creativity, and integrity. Ibrahim Kuscu shows how these kinds of factors interact in constant adaptation with emergence out of continual interactions among the knowledge entities of an organization:

> "The key in this life cycle is the complex adaptive systems view of how knowledge is formed at the level of individual learning and how it becomes collectively shared at the organisational level. This is one of the first views expressing organisational knowledge creation and dissemination as a dynamic, ever-changing process." [30]

In fact, if the organization does not promote this dynamic nexus of exchange, it is highly likely that its IC value will depreciate rapidly by a natural tendency to lapse into repetitive bureaucracy and falling behind changes in markets, competitors, and technology.

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Margaret Wheatley has also shown that chaos and complexity, as found in advanced science, offer new paradigms for organizational effectiveness based on dynamic relationships among knowledge workers. [31] These interactions return us to the problem of sustained competitive advantage. If we do not put IC to the highest and best use, we are at risk that our competitors will. Usually lost competitive advantage translates into reduced profitability or even a monitory loss on the accounting books. Therefore, evaluation of IC must consider the constantly changing dynamics of similar companies and see which ones have generated average returns on investment and which have generated above average returns. If the subject company (the one whose IC we are evaluating) is generating average or below average returns on investment, then the existing IC simply is not as valuable as leading-edge IC.

We can calculate our own company *pro forma* future revenues and expenses in several scenarios. For example:

> **Scenario One**: Current profits with allocations made for the percentage of contribution by IC elements, even though they may not give special competitive advantage.
>
> **Scenario Two**: Leading-Edge IC Elements
>
> - First, an industry average pro forma based on typical sales and expenses of similar companies.
> - Second, the improvements in sales and decreases in expenses attributable to leading-edge IC which have proved to give higher-than-average returns on investment or on equity.
> - Third, the delta or difference between the first and second can be the IC value pool to allocate to various leading-edge IC elements.

The difference between Scenarios One and Two is competitive advantage through IC initiatives. This means that the company has value-added knowledge and is using IC better than others to gain profitability.

In sum, we have identified IC as one element (along with salable intangible assets and Good Will as the advantages the company obtains from being well perceived by external parties and customers), that is an excess over book value. We can evaluate IC by taking a slice in time and looking at IC in terms of the balance sheet. This is a static view of IC at a given moment of time. We can also evaluate IC with a process approach over a longer period of time in multi-year P&L Statements by its discounted contribution to future cash flow.

Further, we can differentiate elements of IC by their respective weighted percentages of contribution to that future cash flow. We can also assign a consideration for increased risk if we identify missing elements when not all ten

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of the listed IC categories are adequately represented in a specific company. We can identify IC liabilities in the forms of many unnecessary expenses, including duplications, conflicts, factionalism, and mistrust. Finally, we can benefit from evaluating IC because we take the first steps to making the invisible become visible, the tacit become explicit, the routine become creative, and the expedient become both more reliable and more ethical. While the M&A approach emphasizes the impact of IC on profitability, we must always remember that ruthless expediency in search of (short-term) profit can have disastrous consequences both for the company and its environment, so the profits will not be sustainable. Highest and best use of IC includes the moral dimension of corporate responsibility for its impacts on its own people (through its socialization process and its organization of work) [32] and its impacts on its surrounding stakeholders. [33] [34]

Evaluation always has to balance two factors: (1) the amount for which you can sell something outright at the moment, and (2) the greater amount which you can gain over time if you put the assets to good use. IC is more sensitive to the second type of evaluation process because we, as knowledge workers, are responsible for putting IC to the highest and best use, which task itself is a main purpose of knowledge management and knowledge creation.

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Biography

Lorin J. B. Loverde, originally from Chicago, is now Professor de Catedra at Monterrey Tech (ITESM, Mexico), in International Business, Business Writing, and Technical Writing. He is a member of the network of consultants for the Center for Knowledge Systems at ITESM. He is currently also a partner in Express English Language, a consulting and training service for US and Mexican companies in Mexico. His emphasis is multi-disciplinary, and he has developed a method of hermeneutics, called Structural Interpretation, which he is now beginning to apply to cross-cultural knowledge management situations such as strategic alliances and post-merger integration. In Mexico he has been in corporate finance and contract manufacturing (outsourcing services in the supply chain for major US companies).

Previously, he had over 20 years experience in business in the USA, including the fields of mergers and acquisitions, international finance, relationship marketing and organizational development. His educational background includes a BS from University of Wisconsin in Philosophy and Psychology, an MA from San Francisco State University in Writing, masters level work at The Graduate Faculties, New School for Social Research in Philosophy, and doctoral level work at Columbia University (ABD) in Philosophy of Religion. He has previously taught in the MBA program at California Lutheran University, as well as other universities in departments of Philosophy, Psychology, English and Humanities. He has published in journals of Business Development, Engineering, Science, as well as the humanities. He is in the process of completing a four-volume work entitled, *New Planetary Culture*, which integrates perspectives from business, philosophy, psychology, sociology, history, and literature in order to show a new direction in human evolution of consciousness that is compatible with sustaining global competitiveness. He can be reached at lorinloverde@aol.com.

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