

Chapter 1

Building Intangible Assets: A Strategic Framework for Investing in Intellectual Capital



by Patricia Seemann, David De Long, Susan Stucky, Edward Guthrie

A concise decision-making framework for identifying and designing strategic knowledge management initiatives.

Summary

An almost paralyzing conceptual confusion around the terms intellectual capital, knowledge management, and organizational learning threatens many strategic initiatives designed to build an organization's intangible assets. The purpose of this paper is to put some structure around the enormous space now inhabited by the notion of managing intellectual capital. Drawing on nearly a decade of experience in the field, we will: (1) provide a practical model that defines and links the concepts of intellectual capital, knowledge management, and organizational learning; (2) present a strategic framework for deciding where and

how to invest in intellectual capital; and (3) provide an overview of the principles for effectively implementing strategic knowledge initiatives.

The Executive's Challenge

There is growing recognition among executives today that intellectual capital, that is, the sum total of a firm's skills, knowledge and experience is critical to sustaining competitiveness, performance, and shareholder value. With equity market valuations of many companies today exceeding the book value of their assets many times over, investors and analysts, too, are looking for more evidence of what firms are doing to secure and improve the performance of their "intangibles." Much of this market value derives from the knowledge assets, or intellectual capital, that underlie a firm's performance.

But many early attempts at developing and managing knowledge assets have been plagued by confusion and sometimes failure because of uncertainty about what intellectual capital and knowledge management are, and what approach must be used to effectively develop intangible assets.

For example, the CEO of an international pharmaceutical company declared three years ago that his firm needed to become a "learning organization." But he issued the directive without explaining how it related to the company's business strategy, what he expected the outcomes to be, or who would be responsible for leading the effort. A series of "cool" knowledge-related initiatives quickly sprung up, but they had no links to the business or common understanding of what was to be achieved. As a result, they quickly fizzled. Within a year, the concept of "knowledge management" had lost credibility and was being ridiculed throughout the company.

This is an example of the challenge that confronts executives today, who must not only grasp conceptually what constitutes their firm's intellectual capital, but also apply the leadership skills needed to innovate effectively in this area.

Elements of Intellectual Capital

To integrate the concept of intellectual capital into an organization's business strategy, executives need a definition of the concept that is clear, actionable, and comprehensive. We suggest that there are three elements of intellectual capital [1]:

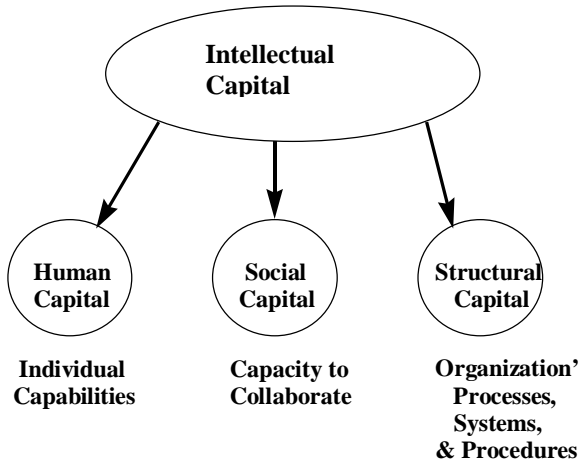


Figure 1: Key Components of Intellectual Capital

“Human capital” is the knowledge, skills, and experiences possessed by individual employees. It comprises both explicit conceptual knowledge, such as how to create a budget, use an e-mail system, or execute a stock trade, as well as more tacit knowledge, such as how to negotiate a sale, write an advertisement, or interpret marketing data.

The purpose of managing human capital is to ensure that the business has the right mix of talent at the right time to implement the firm's corporate strategy. Human capital raises questions about the company's current level of individual skills compared to the competition. Where will the talent for the firm's five-year plan come from? How will management attract, retain, and develop these individuals?

“Structural capital” is basically everything that remains in a firm after it's employees go home. It includes the explicit, rule-based knowledge embedded in the organization's work processes and systems, or encoded in written policies, training

documentation, or shared data bases of “best practices.” It also includes intellectual property, recognized by patents and copyrights.

Definitions of intellectual capital, however, have usually failed to account for a third critical resource. “*Social capital*” is reflected in the ability of groups to collaborate and work together and is, basically, a function of trust. [2] Effective networks of relationships characterized by high levels of trust are a valuable and often overlooked resource in the creation and use of knowledge.

Social capital is critical for three reasons.

1. *Reduces transaction costs.* Trust makes networks and work communities effective because in an environment of professional trust, decisions are reached more quickly and their execution is more readily relied upon. In other words, this element of intellectual capital increases the efficiency of action – within teams, as well as across hierarchical and organizational boundaries – and, thus, reduces transaction costs. [3] Trust is critical in facilitating the sharing and use of new knowledge. Thus, the importance of leadership is one factor that can’t be overemphasized in the successful management of intellectual capital because trust must start at the top with senior executives serving as role models.

2. *Produces higher quality knowledge.* People are more likely to rigorously debate and hone ideas when they trust each other than when they have doubts about each other.

In a U.S. pharmaceutical company, for example, low levels of social capital in drug development teams often kept groups from confronting problems in their research data. Instead, critical discussions took place “off-line” in the corridors, cafeteria, or by one-on-one emails. This meant these ideas never entered the mainstream work of the group, and, as a result, the work tended to succumb to political considerations rather than scientific ones. The lack of trust and inability to collaboratively confront the state of their collective knowledge resulted in serious project delays and

embarrassing and very costly questions from regulatory authorities years later.

3. *A source of inimitable competitive advantage.* Social capital is the way people work together, negotiate meaning, and design the myriad of decisions and transactions they make together every day. This is highly contextual and specific to the groups performing the work. It is extremely difficult to imitate and replicate high levels of trust and collaboration. This is reflected by the growing tendency of competitors to try to hire away not just individuals but entire teams, in fields such as investment management. This results in the simultaneous acquisition of both human and social capital.

What is “Knowledge Management”?

We believe that intellectual capital and knowledge management are not interchangeable concepts. “Knowledge management” is more operational in nature and follows strategic decisions about which elements of intellectual capital to invest in. The three types of knowledge assets described above comprise an organization’s intellectual capital. Knowledge management describes management’s efforts to ensure that these assets are continually in motion, being enhanced, shared, sold, or used, and that they generate superior business results (see Figure 2). An essential characteristic of knowledge is that it only generates value for the firm when it is used effectively in practice. Unlike financial capital, economic value is rarely created by keeping knowledge in reserve.

Knowledge management can be thought of as the deliberate design of processes, tools, structures, etc. with the intent to increase, renew, share, or improve the use of knowledge represented in any of the three elements of intellectual capital. Unfortunately, among many firms and technology vendors the concept of knowledge management has taken on a very narrow definition, so that it now implies only the implementation of information technology to develop “structural capital.” A common example of this is the misguided assumption that merely implementing shared data bases or document repositories will

enhance knowledge creation and use. While managing each element of intellectual capital is essential, it is seldom sufficient. Managing the integration of human, structural, and social capital is the key to effectively building intellectual assets.

Intellectual Capital Grows With Use

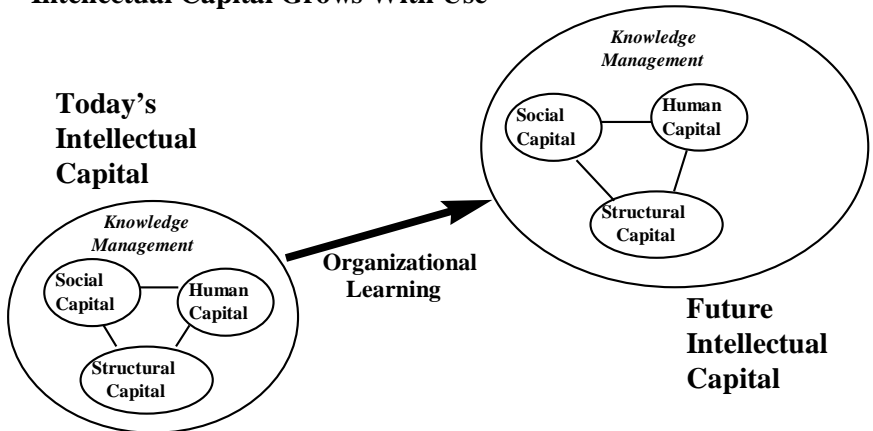


Figure 2: Intellectual Capital Growth

Integrating Three Types of Knowledge

One of the most overlooked aspects of building intellectual capital is the fact that different types of knowledge are interdependent and impact each other's value and performance in an organization (Figure 3). Just as executives are careful about choosing in what markets and products they will invest financial resources, so, too, should they be careful in choosing where and how to invest in different types of intellectual capital. Investment choices must take into account the interdependencies of different knowledge assets and how they interact. There are three points to keep in mind.

(1) *Avoid focusing on only one element of intellectual capital.* The European division of a major U.S. manufacturer, for example, tried to get its service reps to share tips with the field by designing a knowledge repository, or database, that comfortably fit the work. Although individual reps were entering tips from the field, it took a group of analysts months to validate the tips and, as a result, the system was used little. It turned out that the employees

management had assigned to validate the field lessons were not respected by the service reps for their experience and knowledge of the business. Thus, by only focusing on the knowledge base (structural capital) and failing to consider the levels of trust in the validators (social capital), this investment was a disappointment.

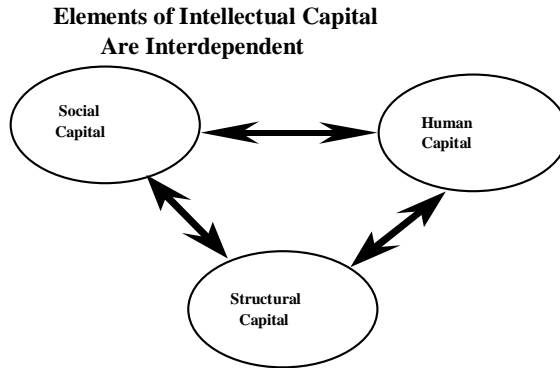


Figure 3: Elements of Intellectual Capital

Except in unusual cases, developing one element of intellectual capital will be inadequate because, ultimately, the interaction of structural, human, and social capital determines the value of management's investment. Since investments in one kind of knowledge will often pay off only if the levels of the other two are adequate, any strategy to build intellectual capital must develop mutually reinforcing types of knowledge.

Managers often assume that trust must be built before knowledge will be exchanged. But building trust first is an uncertain and time consuming approach. In practice, we have found the development of trust actually will be accelerated when people work jointly on an important business problem which forces them to have a detailed exchange of knowledge to understand each other's perspectives. In other words, bringing two distinct types of human capital together, e.g., investment and insurance managers, to jointly address a concrete business problem in a project team is a more powerful way of building social capital, while at the same time creating new knowledge about the business. But this approach will work only if management allows time for

the two sides to explain their experiences and perspectives to each other. In this case, the interaction of human and social capital are what produce the payoff.

(2) *Anticipate changes in the relationships between elements of intellectual capital.* For example, introducing a new financial control system may require bringing in a host of expensive financial and information technology experts. But, as the new system is developed and better understood, its transactions can be routinized and embedded in standardized processes and systems. Thus, over time, management needs to consciously shift its emphasis from attracting and retaining specialized human capital to building structural capital with processes and technology.

The interaction between the three elements is a dynamic process, which means their levels of interdependency are continually shifting. Executives must view knowledge management as a dynamic process where priorities will change in response to the demands of the competitive environment and to the organization's evolving mix of knowledge assets.

(3) *Look for indirect investments.* Launching a business in Asia, a multinational oil company needed to build social capital among its local workforce, which was plagued by a poor communication infrastructure in the developing country. To address the problem, management actually invested in structural capital by building a knowledge center, which was staffed by an experienced businessperson who served as a full time knowledge coordinator, facilitating access to the center's resources. Senior management's investment in the structural capital visible in the center demonstrated a commitment to the value of capturing and sharing knowledge. But, more importantly, the conveniently located physical space encouraged informal gatherings and enhanced the development of relationships among employees. Don't assume that knowledge capabilities are always best enhanced by direct investment. The interdependencies of intellectual capital elements mean that building resources often requires investing indirectly by developing another type of knowledge.

What is a “Learning Organization”?

Learning – both individual and organizational – is the process by which knowledge assets are increased over time. Every organization learns. But, to be successful, leaders must seek to align both individual and collective learning with the strategic intent of the firm. This means that as executives design their business strategies, they need to determine what, specifically – and when – their firms need to learn, and create mechanisms to do so.

For example, if an insurance firm is trying to make inroads into the investment management business, it’s executives will have to make sure that their firm learns the new business while continuing to advance its knowledge of the insurance business. A knowledge management strategy, therefore, may include hiring new talent, designing joint projects, implementing job rotations, and altering organizational structures to facilitate the flow of the new knowledge between existing and new businesses.

In other words, effective organizational learning is the result of explicit management efforts to build intellectual capital in support of the firm’s strategy. Learning must be aligned with the current business strategy to ensure that knowledge being acquired supports future needs, instead of simply building on historical practices and strengths.

Deciding Where and How to Invest

Firms are increasingly investing in intellectual capital, but the process of deciding where and how to invest remains relatively undisciplined, resulting in disappointing returns and wasted resources. For example, our research has shown that executives often invest in information technology hoping that by creating structural capital people will share knowledge. But the only result is many databases that no one uses. In other instances, management imports new talent only to find that it does not “stick” in the existing culture. To avoid these mistakes, there are several principles that should define the approach taken to deciding where to invest in knowledge management.

(1) *Understand core business processes and define key business drivers.* For example, executives in a European pharmaceutical company decided to focus on their drug development process, specifically improving the quality of new drugs and reducing the time to market. Management recognized that product quality and development time were key long term profit drivers, so they concentrated knowledge management efforts in this area. Defining core processes and business drivers are a prerequisite for identifying where the greatest payoffs can come from leveraging knowledge.

(2) *Focus on knowledge that will support critical formal and informal decision making.* In the case of the pharmaceutical company above, the knowledge management team recognized that the documentation used by government regulators to evaluate new drugs was the critical output in the drug development process. Thus, they focused on the decisions made throughout the process of creating the documentation and identified the types of knowledge needed to improve decision making along the way. Decisions determine business outcomes, so understanding the key types of decisions and the role knowledge can play is essential.

(3) *Complexity of decisions will determine focus of intellectual capital investments.* Many decisions are made autonomously and require only coordination with others and some degree of alignment with the firm's strategic intent. In cases where decisions are being made independently of each other, the primary focus should be on developing structural capital, such as communication systems or knowledge repositories, although individual level skills may also be very important.

Other decisions will be effective only if they are taken and implemented jointly, requiring mutual commitment along with an integrated and shared understanding of the problem, solution design, and implementation process. Decisions requiring more integration should have social and human capital as their investment focus with investments in structural capital being a lower priority.

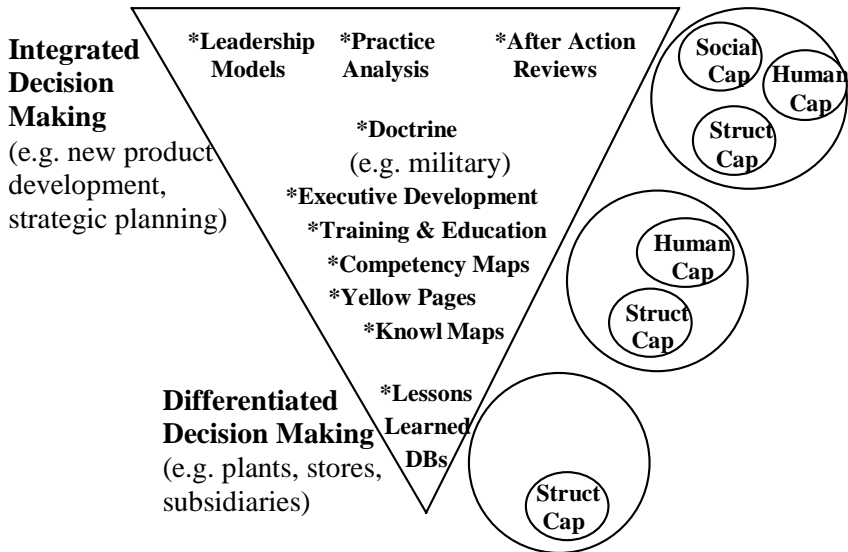
Overlooking investments in building social capital is a common and costly mistake where integration is the business goal. For example, we have found that when drug development teams do not trust each other, critical data can be overlooked and go unchallenged because the strongest people in the group will push their ideas on others, even when their thinking should be questioned and later proves costly.

The degree of integration required in decision making is not consistent throughout a firm, so knowledge management needs should be assessed for different levels and units of the organization. For example, functional areas within a division may require more integration because of the unit's ongoing need to develop new products or services. In the same global corporation, geographically organized businesses may be autonomous and require a different set of coordination mechanisms to create and share knowledge. The degree of integration or differentiation required is a major factor that determines the development priorities of knowledge management initiatives. And each situation calls for a mix of different techniques and approaches.

(4) Types of decisions will also determine knowledge management tools and techniques needed. If enhanced integration is central to improving business performance, then the mechanisms, tools, and projects needed must support the development of all three types of intellectual capital (see Figure 4). In particular, creating opportunities to collaborate and build trust is an important step in building social capital and increasing the quality of group level knowledge.

If, however, the business needs to increase intellectual capital across entities that will remain differentiated (e.g., stores, manufacturing plants, foreign subsidiaries), more resources should be put into developing structural capital through mechanisms such as knowledge maps, knowledge bases, and lessons learned systems.

Figure 4: Investment Guide



How to Get Started

How does building intellectual capital actually add value to the business? Knowledge, whether in individuals, groups, or embedded in organizational processes and products, is not inherently valuable. Knowledge only becomes valuable in practice. Practice is human, social, and structural capital in action *together*. Practice is where knowledge is created and used to shape decision making and activities related to business goals. The effective development of intellectual capital requires an understanding of this dynamic.

Practice is different from process. Process is the map of how things are supposed to happen. Practice is the way things are *actually* done in a particular part of the organization. Practice is the actual traveling, using the map initially to figure out how to get from point A to point B, but then setting it aside and working around all the uncharted road blocks. Practice develops over time and reflects the way people and groups actually create and use

explicit and tacit knowledge to produce, sell, and deliver products and services.

Practice is the source of a firm's competitive advantage because it can't be easily replicated. For example, an office furniture manufacturer that derives competitive advantage from its reputation for high quality products combines all three elements of intellectual capital to create highly effective work practices. The plant has well-designed processes and procedures, and well-trained, experienced employees, whose strong relationships – particularly between engineers and those on the manufacturing line – enable them to quickly diagnose and fix sources of quality problems.

Thus, most initiatives to build intellectual capital and enhance organizational learning should focus on the development of new practices in an organization, particularly when integrated decision making is central to effective outcomes. For example, to create new leadership practices, the furniture company's CEO championed the development of a media-rich workspace in which the senior management team could bring together many different kinds of information to support decision making. At the same time, the executive group had to develop new levels of trust that encouraged the open exchange of ideas to produce more effective meetings. In this case, the interaction of increased levels of social and structural capital enabled new leadership practices to emerge.

Focusing Initial Efforts

Intellectual capital initiatives will be no different than other broad, all-encompassing change initiatives. If they are too grand, they will usually fail. Effective management of intellectual capital may be a critical component of a larger business transformation, or it may be tied to narrower strategic objectives. Regardless, the initial effort should be highly focused, and it must be linked to business outcomes.

One way to pursue this approach to building intellectual capital is with a small prototype designed to test a future business concept and develop an understanding of the work practices involved. When the U.S. Army wanted to test the viability of a

computerized battle force, for example, they linked a 3,000-man brigade, complete with tanks, artillery, and helicopters with a digital network. This computerized brigade engaged in a two week exercise against a very talented opposing force that used traditional communications gear. The prototype was designed to maximize the Army's learning about the future of the digital battlefield, and provided critical inputs for strategic decisions about computerizing the entire fighting force. The key in this type of initiative is to build in roles, structures, and systems, to ensure that the organization learns as much as possible from the experience.

These knowledge management projects must meet several criteria to be effective:

- They must be strategically relevant, and provide insights about building work practices that apply knowledge in new ways. In addition, the benefits should be reasonably, or at least indirectly measurable. For example, knowledge management initiatives in new product development may be tied to reduced time to market.
- Save basic research for R&D. Components of the knowledge management prototype need to be reasonably well understood and observable in practice elsewhere. An international financial services company launching a new type of service in Europe can draw on similar well understood practices in the U.S., for example. What is uncertain is how the European market will react and what knowledge is needed to set up and operate in European countries and cultures.
- The project must be led by an executive respected by both peers and superiors. He or she must take risks and be comfortable with the uncertainty and ambiguity inherent in such a project.
- The prototype must have logical hooks into other projects, so that the results naturally feed into follow-on projects. They should not be one-offs that will not be repeated in the near future. The financial services firm

trying to create a new type of customer relationship in Europe will design and develop a call center in one country. Simultaneously, the firm will design and implement a learning strategy, define and develop the required capabilities, and determine a strategy for spreading this new competence throughout Europe.

When the U.S. Army ran its simulation of the digital battlefield, senior officers learned that the power of shared context could be exponentially increased when knowledge transfer was done digitally – computer to computer. Not only did soldiers have the shared understanding of the battlefield which came from extensive training based on Army doctrine, but they also shared a common view of the battle as it developed. From foxhole to general headquarters and back at ISDN speeds, knowledge could be shared, decisions made, and actions taken.

When a knowledge prototype project is completed, senior management should have the insights needed to make critical strategic decisions. Does the firm really understand the emerging market? Do they have the intellectual capital to make it happen? Can the necessary competencies be developed or transferred from within the firm? More important, management will have glimpsed the future and how different types of knowledge must be combined in practice to create competitive advantage.

Once senior management has an idea of what future operations could be like – in practice – and the types of knowledge needed, their focus shifts to helping other parts of the organization adopt and adapt the new practice to local cultures and contexts. A common mistake in knowledge management is assuming successful projects can simply be rolled out to the rest of the organization.

For example, in launching new financial services in Europe, the company mentioned earlier realized that in the U.S. the job of interacting with clients had evolved into a functional role of client relationship manager. But managing client interactions in a European context might not be done effectively by recreating the same role. Nevertheless, understanding what the client relationship

manager actually did in practice enabled those launching the European business to develop options and solutions that fit the context of the new market, without necessarily recreating the old role structure. Because much knowledge is local and embedded in social context, it must be adapted into local practice to make certain it is applied effectively.

Conclusion

If, as Harvard Business School's Shoshana Zuboff says, "Learning is the new form of labor," then knowledge is both the raw material and product of that labor. Effectively managing knowledge to build a firm's intellectual capital will increasingly become a yardstick by which executive performance is measured – both by the equity markets and by the firm's board of directors.

Part of senior management's job is to separate the hype about intellectual capital from the essential principles that underlie the emergence of the knowledge-based economy. Making the right strategic investments to build a firm's intangible assets means taking a comprehensive approach to the problem by understanding the relationships between structural, human, and social capital. It also means recognizing which types of knowledge are needed to support different business objectives. Finally, effective knowledge management means understanding that knowledge is inextricably linked to practice, and that creating value for the firm means improving how knowledge is actually used – not just captured and stored – in activities critical to the business.

REFERENCES

1. Recent definitions of intellectual capital have primarily emphasized two types of knowledge – human and structural capital. See for example: Thomas A. Stewart, *Intellectual Capital: The New Wealth of Organizations*, (New York: Doubleday/Currency, 1997); Leif Edvinsson and Michael S. Malone, *Intellectual Capital*, (New York: HarperBusiness, 1997).
2. By “trust” in this context we mean professional, studied, and rational trust, which is based on a shared context (i.e., a common understanding of a business) and provides a sense of anticipated reciprocity, predictability and reliability within a group.
3. For a detailed review of “social capital” theory see “Social Capital, Intellectual Capital and the Organizational Advantage,” by J. Nahapiet and S. Ghoshal, *Academy of Management Review* (1998) v.23 n.2: 242-266.