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Evolving Knowledge for Development: The role of Knowledge Management in a changing world

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Abstract

In today's changing world, knowledge, and the processes to generate it and manage it, have become key factors in creating competitive business advantage. However, the challenges facing contemporary global societies, from human conflicts to environmental degradation, call for an expanded research agenda in the field of knowledge management. Issues such as improvement of the role of corporate citizenship to promote socially and ecologically responsible operations and development of human and social capital should become part of a purposeful strategy for creating a better future. 'Knowledge is power' – and it is up to those with access to knowledge to decide if that power will continue to be used *over others* to increase the gap between rich and poor or if it will be a *power to empower* visions and realities based on an inclusive planetary ethic. From an evolutionary systems perspective, this paper explores some of the implications and key contributions that knowledge management can make for the transition toward sustainable forms of social organization. The heuristic of evolutionary learning community (ELC) is presented as a participatory strategy for promoting learning and knowledge creation for evolutionary development.

Keywords: knowledge management, sciences of complexity, General Evolution Theory, corporate citizenship, sustainability, Evolutionary Learning Community, evolutionary development.

Introduction

Advances in science and technology have created unprecedented opportunities for human development and well-being. At the same time, the resultant progress evinced in the last 150 years has had certain “side-effects” (Meadows, 1972) that, although ignored for some time, have now become global issues that threaten the stability of societies and ecosystems the world over. Population growth, social inequities, hunger, armed conflicts, water shortages, pollution – these are but a few of the issues, each of which is related to every other, and together forming a complex challenge for societal development (Merry, 1995, p. 78). The finitude of resources on our planet calls for new forms of production, distribution, and consumption ... and for new ways of learning, living, and enjoying life.

The knowledge economy is an emergent reality for many organizations and nation states. “The wealth of a nation no longer depends on its ability to acquire and convert raw materials, but on the abilities and intellect of its citizens” (TFPL, 1999, p. 2). This knowledge economy has brought with it new fields of study and approaches that are contributing to a more robust understanding of the role of knowledge for the creation of human and social capital as key factors in societal development. The creation of these types of capital is in the interest of multiple sectors of society and benefits society as a whole. Nowadays, processes related to knowledge creation, learning, and innovation have a social impact just as significant as economic initiatives (OECD, 2001, p. 17).

Business, Knowledge Management and Society

Today, more than ever, business is a key shaper of the emerging global society. The exchange of knowledge, materials, energy and people; the blending of cultures; and the dissipation of geo-political boundaries are to a great extent the result of transnational business operations. The relevance of knowledge and the need for approaches to manage it became apparent first and foremost in the business world. In fact, in a survey of chief executives,

knowledge management was put second on their “must do” list after globalization (TFPL, 1999, p. 3).

Knowledge has always been relevant for the good performance of business. However, the kind of knowledge relevant to the development and maintenance a competitive edge has changed over time (see figure 1). During the first half of the 20th century, successful companies focused on improving their internal processes since production and managerial operations needed to become more efficient. Scientific Management, as developed by Frederick W. Taylor, is an example of this type of Business Knowledge of the First Kind. But increases in competition and expansion of the economy made it necessary to focus beyond the enterprise itself in order to learn more about one’s market, one’s industry, one’s consumers. This is Business Knowledge of the Second Kind, a type of knowledge that is contextual and that uses benchmarks and best practices as references points. The work of Michael Porter on competitive advantage is a typical example of business knowledge of the second kind with great impact in the 1980’s. These two kinds of business knowledge tend to use metaphors that refer to business as a jungle (i.e., survival of the fittest; eat or be eaten), warfare (i.e., guerrilla strategies, ruthless competition), and the machine (i.e., efficiency and efficacy at any cost; humans as replaceable parts) (Solomon & Hanson,1983), all of which derive from a reductionistic scientific paradigm.

The challenges and opportunities emerging from a rapidly changing global environment demand that we go beyond these conceptions. Knowledge, and the processes of its acquisition, generation, distribution and utilization, has become the main source of value creation. But science, as a knowledge creation enterprise, is itself evolving and transcending reductionistic and mechanistic conceptions. For this reason, it is important that contemporary knowledge management be grounded in the most recent scientific thought – in particular, the sciences of complexity (such as systems theory, chaos theory, and dynamical systems theory) that provide the foundations for a new understanding of how complex dynamic systems *evolve*. As a result, Business Knowledge of the Third Kind goes beyond the two previous types of knowledge by involving a systemic understanding of the socio-cultural and bio-physical dynamics of the global environment, thereby seeking to give rise to the evolutionary corporations of the 21st century (Natrass and Altomare, 1999).

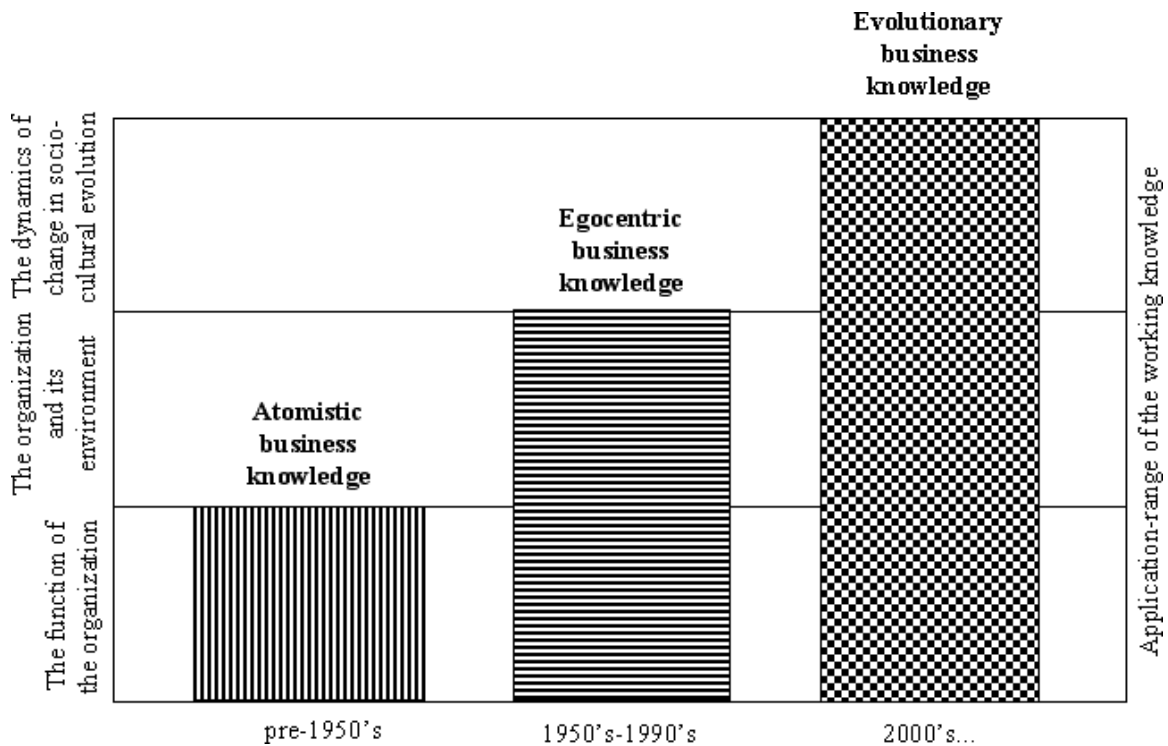


Figure 1. Business knowledge for evolutionary corporations

(Laszlo & Laszlo, 1997).

Mark McElroy (2000) has pointed out the differences between what he has identified as two generations of knowledge management (KM). First generation KM focuses on *knowledge sharing* – on how to distribute existing organizational knowledge, usually through technology. In contrast, second generation KM focuses on *knowledge creation* – how to satisfy organizational needs for new knowledge, usually through processes of learning and value creation. In other words, first generation KM is about imitation (focusing on standards and benchmarks) while second generation KM is about innovation. This second generation is linked to the convergence that McElroy noted between first generation KM, organizational learning, and complexity theory as applied to business: all three areas have individual developmental paths but they share similar and complementary goals. As Senge (1993) and others have pointed out, the process of learning has become one of the main sources of sustainable competitive advantage.

However, it is a particular mode of learning that is especially valuable for knowledge creation and innovation: learning through collaboration, which in the business world has been adapted and applied as “organizational learning.” The view of the organization as a machine in

which humans are replaceable “resources” deadens the human spirit – the emotive, intuitive, and moral aspects of being – from organizational life and assumes this corporate machine to be a static and sterile system. And yet, the fact is that organizations are human activity systems (Checkland, 1981) that, like any form of community or society, reflect the purposes, values, expectations and feelings of the people who comprise them. A more appropriate metaphor for the organization – and for society as a whole – is that of a living organism: an image that makes explicit the dynamic complexity of organizational life.

Complex systems are evolving systems that engage in self-organizing dynamics, though to different degrees and with varying levels of success. This can best be understood by considering how a living organism is capable of self-maintenance, self-renewal, and self-transcendence (Capra, 1996). These capabilities result from an evolutionary process of self-organization into higher levels of structural and functional complexity (Laszlo, 1996). Study of these features of complex evolving systems offer new insights for the design of organizational and societal strategies, structures, and processes. “The company that acts like a living organism will naturally be a learning organization absorbing and reacting to information in an evolutionary manner. Companies that are conceived of as machines, rather than living organisms, are unlikely to be aware of external shifts in public opinion or be sensitive enough to their key relationships, because they will not be sensitive to the unexpected” (McIntosh, Leipziger, Jones, & Coleman, 1998, p. 74-75).

The concept of corporate citizenship (McIntosh, Leipziger, Jones, & Coleman, 1998) is gaining more weight as a performance benchmark among global enterprises. It is an important example of how business knowledge of the third kind includes issues of socio-ecological responsibility as part of its resourceful corporate strategy. We are not talking about information for the sake of compliance; we are talking about knowledge for the purpose of innovation.

In a highly interconnected world, the field of knowledge management faces the challenge of making concrete and relevant contributions for the betterment of society and not only for promotion of competitive advantage for business. This involves a research agenda through which, first, KM can foster business knowledge of the third kind for the expansion of a corporate citizenship agenda and the emergence of evolutionary learning corporations; and second, KM can make significant contributions for the creation of human and social capital required for evolutionary development.

The Knowledge of Evolution

The suggested KM research agenda is geared to the generation of business knowledge of the third kind for corporate citizenship and for wider impact on global development. It is grounded on a new scientific paradigm that opens up new possibilities for human agency. We are making reference to the body of knowledge that is coming out of the sciences of complexity – systems theory, cybernetics, chaos theory, dynamical systems theory, nonlinear thermodynamics, autopoietic theory, to mention but a few of the areas which, considered together, inform the most recent understanding of evolutionary dynamics.

For most people, evolution connotes Darwin. Unmistakably, he is important as a historical figure who legitimized a theory of evolution both scientifically and popularly. However, scientific understanding has advanced beyond even neo-Darwinian interpretations, and yet, for the most part, popular conceptions of evolution still remain strongly associated with classical Darwinism.

Classical Darwinism sees evolution as a process of trial and error; something like the work of a blind watchmaker. “A series of random genetic mutations is not likely to have produced all the complex species indicated by observation and the fossil record within the time that was available for biological evolution on this planet.... In any case, if random mutation and natural selection require more time to produce viable species than the fossil record indicates, then Darwin’s theory, if not quite mistaken, is at least incomplete” (E. Laszlo, 2000).

In recent years, an action-oriented systems approach to the development of human and natural systems has emerged from the study of evolutionary processes in nature and society. It is known as General Evolutionary Theory (GET) or evolutionary systems theory. It postulates that the evolutionary trend in the universe constitutes a ‘cosmic process’ specified by a fundamental universal flow toward ever increasing complexity. It is now understood that this dynamic of complexification manifests itself through particular events and sequences of events that are not limited to the domain of biological phenomenon but extend to include all aspects of change in open dynamic systems with a throughput of information and energy. In other words, evolution relates to the formation of stars from atoms, of Homo sapiens from the anthropoid apes, as much as to the formation of complex societies from rudimentary social systems.

The promise of general evolution theory is captured succinctly by Ervin Laszlo, Ignazio Masulli, Robert Artigiani, and Vilmos Csányi as follows:

General evolution theory ... can convey a sound understanding of the laws and dynamics that govern the evolution of complex systems in the various realms of investigation. ... The basic notions of this new discipline can be developed to give an adequate account of the dynamical evolution of human societies as well. Such an account could furnish the basis of a system of knowledge better able to orient human beings and societies in their rapidly changing milieu. (Laszlo, Masulli, Artigiani, & Csányi, 1993, xvii, xix)

By applying GET to societal phenomena, human social systems can be understood to evolve through a process of convergence to progressively higher organizational levels. When flows of people, information, energy, and goods intensify, they transcend the formal boundaries of the social system. Thus neighboring tribes and villages converge into ethnic communities or integrated states, these in turn become the colonies, provinces, states, cantons, or regions of larger empires and eventually of nation-states. Today, we are witnessing yet a further level of convergence and integration as nation-states are joining together in the creation of various regional and functional economic and political communities and blocs, in Europe, North America, and elsewhere in the world.

Through the notion of 'bifurcations' (nonlinear and often indeterminate transitions between system states), General Evolution Theory can be applied to conditions that prevail when societies are destabilized in their particular time and place. Societal bifurcations – or macroshifts (Laszlo, 2000) – can be smooth and continuous, explosive and catastrophic, or abrupt and entirely unforeseen. However, they always describe the point at which a social system traverses a period of indeterminacy by exploring and selecting alternative responses to destabilizing perturbations. Bifurcations are revolutionary transformations in the development of society, and macroshifts are bifurcations that act on the civilizational level of human society. The reins of power change hands, systems of law and order are overthrown, and new movements and ideas surface and gain momentum. When order is re-established, the chaos of transformation gives way to a new era of comparative stability. GET explains how bifurcating societies either reorganize their structures to establish a new dynamic regime that can cope with the original perturbations, or disaggregate to their individually stable components. It provides a conceptual foundation for human emancipation and societal development. By suggesting that human destiny can be placed in human hands, it points to the possibility of moving toward the conscious

creation of evolutionary strategies by which to guide the sustainable development of our societies.

We have much to learn from nature with regard to self-organization and evolutionary governance, among other things. As Augros and Stanciu (1987, p. 231) point out, “her attributes of simplicity, economy, beauty, purpose, and harmony make her a model for ethics and politics.” This model involves learning or re-learning what it means to be part of a natural community. Capra (1996, p. 4) points to this as “the greatest challenge of our time: to create sustainable communities — that is to say, social and cultural environments in which we can satisfy our needs and aspirations without diminishing the chances of future generations.”

The extent to which we inform our actions through a transdisciplinary theory of evolution will mark the extent to which the consequences of our actions and the implications of our thoughts will contribute to developmental pathways that are either more or less sustainable. Mihalyi Csikszentmihalyi (1993) put it quite plainly: “In order to make choices that will lead to a better future, it helps to be aware of the forces at work in evolution.” The emerging evolutionary paradigm brings with it a new sense of human possibilities, responsibilities, and *responsibilities*.

From Knowledge Transmition to Meaning Creation

Not only is knowledge production increasing, the rate of knowledge production is itself increasing and accelerating. However, questions of what kind of knowledge is appropriate for socio-ecological well-being, who should be involved in its creation, and how it should be created, managed and positioned to evolve are as yet infrequently considered in development strategies. If knowledge is to be put to good use for human betterment, we need to democratize the processes through which knowledge is created, stored, shared, and used.

Francisco J. Carrillo (1999) has recently outlined some of the current trends and future scenarios of the KM movement. He believes that once those engaged in the field of KM become aware of the knowledge base on “metaknowledge” (knowledge about knowledge and its management) it will enable the field of KM to “multiply its options for designing its own future” (p. 8). Knowledge is a process; a means more than an end in itself. The question that needs to be asked is: But a means for what?... For increasing the gap between rich and poor? For exploiting natural resources in more efficient ways?... For unleashing the creative potential of

every human being?... For creating just and sustainable societies?... Without intentional directionality, the evolution of KM could go in many directions – not all of which are in our greater collective best interest.

So again we affirm that knowledge is power. But it is up to those with access to knowledge to decide how to use that power: as *power over others* so that only an elite few can enjoy indulgent life styles, or *power to empower* others in order they may engage in meaningful and sustainable forms of social organization. That is to say, it is not enough to have answers to the *know-what* and *know-how* questions. Today, more than ever, we need also to have answers to the *know-why* aspects of our initiatives. It is time to marry our technical knowledge with our ethical knowledge since we know that many individuals and countries – highly successful in applying the know-whats and know-hows for creating economic wealth – are still wondering: Was it worth it? *It is time to move from knowledge acquisition to meaning creation.*

Figure 2 presents the “pyramid of meaning” (Laszlo, 2002) which places knowledge in context with other forms of meaning; some more rudimentary than knowledge such as data and information, some more sophisticated such as understanding and wisdom. Data is comprised of nothing more than “factoids.” A number out of context (e.g., 1985) means nothing since could mean anything: a year, a street address, the number of graduates in a class, etc. It becomes information when the context is made explicit. For instance, “Daniel lives on 1985 Broadway.” If someone asks, where does Daniel live? This would be *the* correct answer. As we move up the pyramid, it becomes more difficult to find “right answers.” Knowledge answers ‘how’ and ‘how to’ questions and is less certain. So, how do I get to Daniel’s house from here? Well ... that depends. Are you driving? Walking? Do you have a helicopter? You may want to take the scenic route rather than the fast route. Knowledge and information can be taught and formally transmitted. But there are limits to teaching. Understanding cannot be taught: it has to be created by each person for themselves since it involves active engagement in learning and creating meaning. As a result, your understanding of a situation is unique to you, and by learning and collaborating together we can expand our individual understanding in order to share a common cognitive map. At the level of wisdom, meaning is often counter-logical. Sometimes, regardless of the facts, the strongest arguments, the greatest incentives, you cannot be convinced because in the greater scheme of things, you know it isn’t right or it simply doesn’t make sense.

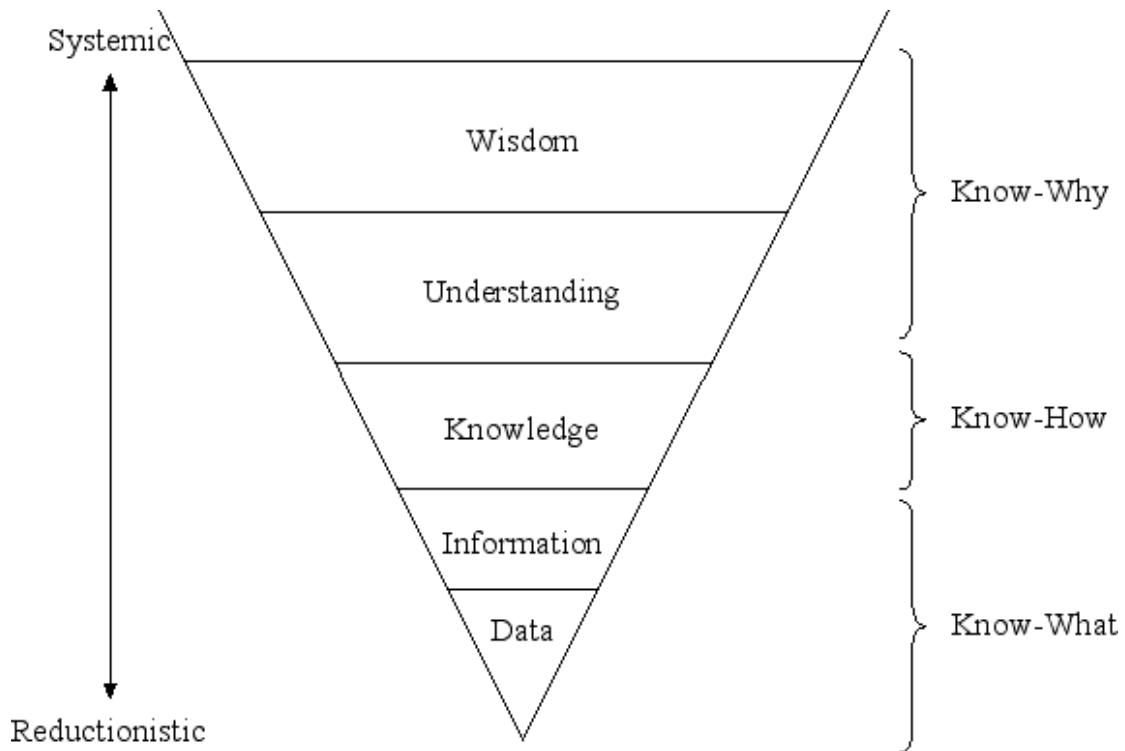


Figure 2. The pyramid of meaning

(adapted from Laszlo, 2002).

The difference between knowledge, understanding and wisdom has deep implications for the design of educational systems. Research on learning, cognitive psychology, educational technologies, and so forth, are pointing out to the need to engage learners in an active construction of meaning. Andragogical and learner-centered approaches are some of the sorts of responses that support the use of knowledge for the creation of understanding.

The lower portion of the pyramid refers to forms of knowing that are more specific but also more limited. It feels more comfortable and more certain to answer the “what” questions, especially when we isolate the object of study from its context. In this sense, the lower portion is concerned with reductionistic approaches which assume that adding together an understanding of pieces will result in an understanding of the whole. “How” questions are more challenging to deal with; there are many possible paths to the desired outcome, as described in the examples given above. But “why” questions are more significant since issues of appropriateness and goodness of fit must also be considered. Understanding integrates reason and values, intellect and intuition. “Why” questions consider the impact and ethical implications of a decision

according to the situation and its context. In this sense, understanding is more systemic, more holistic. The answers at the level of wisdom also deal with “why” questions, but now they engage your emotions, as well. Simply put, wisdom, in addition to understanding, involves love. With this framework in mind, knowledge management makes sense only as an enabler to reach levels of understanding and wisdom that will permit a positive impact on the development of societies and on the evolution of human civilization as an integral part of this living planet.

The distinction between reductionistic and systemic is correlated with the evolution of scientific knowledge that we mentioned earlier when describing the progression of business knowledge of the first, second, and third kinds. Science, as an inquiring and learning system (Checkland, 1981, p. 50), is evolving. The quest for knowledge and understanding is a human enterprise that moves continually toward higher levels of complexity, less clear-cut answers, and more evolutionary possibilities. Inquiry in the social and human sciences is moving away from quantitative research and advancing toward qualitative, dialogue-based, and action-oriented forms of investigation. That is the case, for example, of the participatory inquiry paradigm which seeks “to change the world... participation implies engagement which implies responsibility.... Participatory research is thus essentially transformative” (Heron & Reason, 1997, p. 287-288). The world view that supports collaborative forms of inquiry is fundamentally participative, systemic, pluralistic, and egalitarian. It is based on emancipatory education, spirituality and ecology, and supported by systems thinking and the new sciences of complexity. “This world view sees human beings as cocreating their reality through participation: through their experience, their imagination and intuition, their thinking and their action” (Reason, 1994, p. 324).

Knowledge is a product of human experience and reflection. Given that it is context dependent, knowledge is a resource that can be embodied in an individual or a collective, or embedded in a routine or a process. Since knowledge can be either explicit or tacit, it can be incorporated in language, stories, rules, tools, resulting in an increased capacity for decision taking and action to achieve some purpose (Wong & Radcliffe, 2000). Explicit knowledge can be clearly articulated, communicated in formal and systematic languages or codes, and set down in written documents (Nonaka, 1994). Tacit knowledge is demonstrated through actions, embodied in personal experiences, and is difficult to transfer (Polanyi, 1966). De Long and Fahey (2000) distinguish between human knowledge, social knowledge, and structured

knowledge. Human knowledge is both explicit and tacit — it is what individuals know (cognitively) or know how to do (procedurally and kinesthetically). Social knowledge exists in relations among individuals and groups. It comprises synergetic knowledge, is largely tacit, and is the result of working and learning together. Lastly, structured knowledge is embedded in the processes and infrastructure of a social system. Knowledge in this form is explicit and rule-based; it exists independently of human knowers and represents an organizational resource. These knowledge taxonomies are represented in the epistemology of the participatory inquiry paradigm (Heron & Reason, 1997), described below, since it not only includes these different types of knowledge but integrates them in a coherent framework that shows the relations and interdependencies among different forms of knowing.

The participatory systemic paradigm is an integration of the different levels of the pyramid of meaning geared to disciplined and rigorous inquiry that enables new forms of social organization. Heron and Reason (1997) elegantly describe the epistemology of the participatory paradigm which includes four interdependent ways of knowing: experiential, presentational, propositional, and practical. *Experiential* knowing involves direct encounter with another being, that is, participative and empathic interaction so that one feels both together with, and distinct from, the other. *Presentational* knowing is the symbolization (in graphic, musical, verbal, or any other metaphorical form) of the intuitive grasp of the meaning generated through the interaction with the world (i.e., experiential knowing). *Propositional* knowing involves rational conceptualization, as through theories and logical statements, derived from the metaphors of the presentational knowing and ultimately grounded in our experiential articulation of the world. *Practical* knowing is manifest in competencies that generate value through actions that fulfill and apply the other three forms of knowing. It is knowing through acting in, and changing, the world. A truly participatory and systemic inquiry will use all these forms of knowing through emotional and personal experiences, creative and aesthetic expressions, intellectual and theoretical articulation, and contextualized and transformative practice. In this form of inquiry, critical subjectivity — the awareness of the interrelations between these different ways of knowing — is complemented with critical intersubjectivity — the validation of knowledge through “shared experience, dialogue, feedback, and exchange with others” (Heron & Reason, 1997, p. 283).

The epistemology for participatory forms of inquiry suggests that by engaging in processes of meaning creation, people can understand the implicit assumptions and embodied values of a social system. Understanding a situation is a precondition for proposing alternatives. That is the transformative and emancipatory power of participatory systems research which provides the platform for purposefully evolving structured knowledge, and hence, society.

This epistemology and the integration of forms of knowing that move meaning generation toward understanding and wisdom represents, in a way, an initial proposal for the democratization of learning and knowledge management processes. We need to develop “research methods that can deal with the kinds of ‘data’ that emerge out of the everyday world of human conversations and activities” (Salner, 1996, p. 6) in order to unleash the collective intelligence and creativity needed to design appropriate responses to the practical challenges of socio-ecological survival “where no reliable guides exist” (p. 8).

Evolutionary Learning Community

When a person becomes part of a social system, much of the knowledge required to carry out his/her functions has to be picked up and learned progressively in day-to-day interactions, as well through educational processes devised to transmit cultural values and practices. However, history shows that is there neither sufficient learning from past experiences, nor efficient preservation of vital knowledge from the present, for societies to evolve purposefully. This implies new challenges for both societal learning and knowledge management.

Learning, inquiry, and dialogue are processes necessary for meaning creation. These knowledge processes call for human beings capable of engaging in self-directed and collaborative learning. But learning what? And how?

Although necessary, it is not sufficient to learn exclusively from the past. We must invent the future into existence also through our dreams of what should be. Banathy (1996, p. 318-319) differentiates between maintenance and evolutionary learning. The first is adaptive. It involves the acquisition of fixed viewpoints, methods, and rules for dealing with known and recurring events. It maintains the status quo, and is appropriate during periods of socio-cultural stability. Maintenance learning is more concerned with information and knowledge of “what is” and “what works.” In contrast, evolutionary learning is innovative. It enables the learner’s ability to cope with uncertainty and change, renew perspectives and creatively design co-

evolutionary human systems. It represents a more appropriate learning strategy during periods of socio-cultural instability or macroshifts where there are no clear guides to the future.

By and large, contemporary educational systems are focused primarily on maintenance learning and the creation of ‘knowers’ — that is, people who know a lot about an existing field or area of specialization. But new realities and global challenges call for evolutionary learning and the empowerment of ‘learners’ — that is, people capable of generating new knowledge and processes as appropriate responses to changing socio-cultural and bio-physical environments (Laszlo & Castro, 1995). Evidently, knowledge is an essential by-product of learning, but the true focus of evolutionary learning is the transformation of social realities to produce increased personal, social and environmental well-being.

Kathia C. Laszlo (2000, 2001) has outlined the basic conditions for the design of Evolutionary Learning Community. This form of community provides learning environments where people can learn together about the interconnected nature of our world, the ecological impact of our individual and collective choices, and the joy of finding a meaningful way to contribute to the emergence of sustainable and evolutionary futures. Einstein and Russell (1957) considered that “we have to learn to think in a new way” in order to apply our knowledge ethically and to provide creative solutions to the challenges that confront us. To learn to think in a new way — that is, to go beyond reductionism into a systemic mode knowledge management — may depend on our ability to *learn how to learn* in new ways since the dominant educational system is still grounded in reductionistic worldviews and continues to propagate outdated myths and values. Indeed, educational processes have been perpetuating the Grand Narrative of Progress (Feinstein & Krippner, 1988) that maintains or exacerbates the global crises, rather than creating alternatives and solutions.

In the last few decades, many scientists, futurists, philosophers, and practitioners have been exploring visions and means of alternative positive futures (e.g., Banathy, 2000; Bohm, 1980; Chaisson, 1987; Eisler, 1987; Elgin, 1993; Goerner, 1994; Harman, 1988; Janstch, 1975; A. Laszlo, 2002; Leonard, 1968; Macy, 1991; Milbrath, 1989; Montuori, 1989; Natrass & Altomare, 1999; Pearce, 1971; Theobald, 1997). The gap between this accumulated knowledge and the current negative realities around the world indicate the absence of channels to communicate and operationalize the growing body of knowledge. This gap represents the challenge of developing appropriate processes and environments where people can learn,

understand, and create meaning that will empower them to live in ways that foster lifelong learning, community, and sustainability.

By using the methodology Evolutionary Systems Design (ESD) (A. Laszlo, 1999; Laszlo & Laszlo, 2000; K.C. Laszlo, 2001; A. Laszlo, 2002), the co-creation of ELC takes the form of participatory conversation, learning, design and action. An ideal image of the future and of the desired outcomes agreed upon by those engaging in the inquiry, guide the collaborative exploration that moves from an informed vision of “what should be” to a concrete reality of “what can be.” The process and results of this learning and design journey foster in the participants attributes such as lifelong learning, systems thinking, environmental stewardship, planetary citizenship, authenticity, empathy, creativity, pragmatism, optimism, and a passion for affirming life (K.C. Laszlo, 2001, p. 387-388). The ELC seeks to serve as an embodiment of a balanced partnership between humans and nature, a place/space for future thinking, for ongoing learning, for enjoying work and play, and for producing a wholesome and syntonious (i.e., evolutionarily consonant) quality of life.

Third Generation Knowledge Management

Several authors have characterized the evolution of the field of KM through the description of “generations” (e.g., McElroy, 2000; Carrillo, 2001; Skyrme, 2000). This descriptions are exactly that — descriptive of the historical development of the field of KM from different perspectives. We have made reference to McElroy’s (2000) distinction between first generation KM and second generation KM. Following his line of thought, first generation KM describes “what is” and, by capturing collective intelligence through intellectual capital technologies, promotes best practices. Second generation KM departs from existing knowledge bases in order to suggest “what could be” through processes of learning and innovation.

Our suggestion for a third generation of KM is not descriptive but prospective. That is, it is an exploration of “what should be” presented as a provocative invitation to engage in the purposeful and conscious evolution of the field of knowledge management. This prospective and somewhat prescriptive suggestion responds to the need for ethical social innovation and for explicit commitments to contribute to evolutionary development (see figure 3).

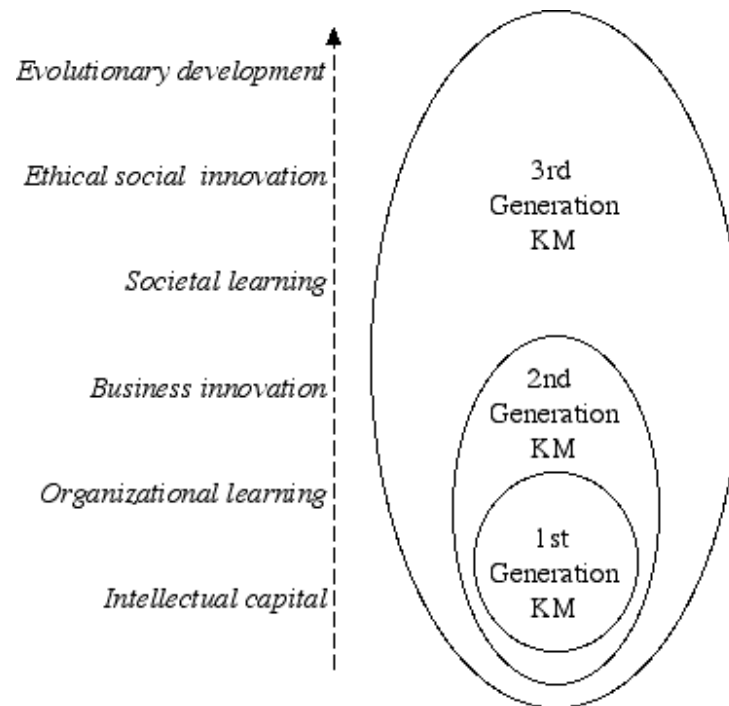


Figure 3. Evolving KM

Third generation KM is relevant beyond business applications. And yet, it is correlated with the need for business knowledge of the third kind to support the evolution of business and the emergence of strong corporate citizenship (K.C. Laszlo, 2002). Global business operations are changing the world. That change should be for the good.

Just like learning organizations can be seen as the vehicles for facilitating second generation KM, evolutionary learning communities – within corporations, families, nonprofit organizations, schools, neighborhoods – are the vehicles for enabling evolutionary learning processes that empower individuals and groups to participate in the co-creation of sustainable and evolutionary futures, that is, for third generation KM.

Third generation KM is about the democratization of knowledge, about citizen involvement, and the expansion of the boundaries of what traditionally has been considered education in order to design an authentic learning society. It is not so much about knowledge and know-how anymore but more about meaning and know-why. It is based on a new way of thinking informed by a planetary ethic and a different way of living from what it is now favored by mass media commercialization. KM has both the potential and the responsibility to contribute to the emergence of a sustainable global civilization.

A New Look at Development

Most of the well intentioned development efforts that account for much of the “progress” achieved in the past, both in developed and developing countries, are responsible for major environmental damage and the widening of the gap between rich and poor on a global scale. To look at development from an evolutionary perspective involves making explicit and embracing the values, perspectives, assumptions, and knowledge required to move human societal systems to an ethical social innovation phase. How can we make development locally relevant and globally attuned? How can development promote higher quality of life? How can our species learn to live simply, meaningfully, and yet productively? These are the true, as yet unaddressed, challenges of development, and they are the ones to which the inquiry on evolutionary development is dedicated.

Most traditional definitions of development are related to the concept of welfare and have direct linkages to economic dynamics. For instance, the meaning of development is often biased to “economic development” (Meier, 1970) and equated with industrialization. Authors such as Mathur (1999) correlate economic development with change in employment and self-sustained capital income, which implies growth in per capita income as well as in wealth and population movements. The Economic Development Council (UN, 1987) defines the term as the process of creating wealth through the use of all kinds of resources, and in the emerging global economy, knowledge is the newest form of capital. Yet, these are limiting definitions of development because they restrict its causes to quantifiable variables such as capital accumulation .

To answer the question of why the distance between developed and less developed countries persists, theoretical approaches have been formulated using empirical instruments such as annual rate of growth and per capita income. Used as yardsticks, these approaches tended to reduce human well-being to numerical measures.

In recent years a growing interest has been developing around the implications of the human factor as a central issue in economic development. Starting with Backer’s work (Meier, 1970), human capital has become another investment element on the road to economic development. Through his model of the US economy, Schultz (1961) considers that, to a certain extent, the successful growth of America until 1960 can be explained by the high productivity of labor. Later, Lucas (Todaro, 1992) uses the interaction between the productivity of human

capital and other resources to explain the growth rate in regions with human capital accumulation. From here, the concept of the learning regions has gained popularity, reinforced by the success of areas such as Silicon Valley in California and Route 128 outside of Boston. Learning regions theory (LRT) is concerned with those intangible factors of intellectual capital that make a region economically dynamic and competitive. It focuses on concepts such as the nature of business innovation and the conditions that enhance it. These regions are characterized by the presence of educated, creative, and entrepreneurial people as well as universities. According to LRT, the main cause of development is the social interaction among the agents that promote innovation and technological change. Economic development depends on the capability of the system to learn and to generate knowledge, know how, and skills. Second generation KM is an appropriate tool for such development objectives.

Notions such as dynamic change were integrated with so called evolutionary economic theory based to some extent on a consideration of evolutionary biological analogies. In this theory, economic development is based on a notion of continuous change where different forces combine to build a dynamic network of interactions. Economic agents are seen to behave in a systemic field such that every member of a society has a roll to play. The theory surfaces the processes by which energy sources maintain the functional and operational viability of the system through the generation and transmission of knowledge.

In recent years, it has become imperative to gain a better understanding of the developmental pathways that take into consideration the whole of human experience in its socio-cultural and bio-physical environment. It implies nothing less than a re-vision of Schumacher's (1973) core idea of "economics as if people mattered." The design of strategies that promote evolutionary development, as any other human activity, is the result of particular Weltanschauungen. Consequently, in order to obtain a clearer image of the possibilities of evolutionary development, it is essential to adopt a new set of assumptions:

The new concept of development takes account not only of economic growth but also of all those parameters that reflect the quality of life, full enjoyment of creative capacity and observance of human rights, which the principal decision-makers should take into account so that development is not owned and dispensed by a few but is a common undertaking on an international, multilateral scale, with the human being as its centre, its sole agent and its beneficiary. *All that is needed is a new look at the world, and different premises.* [emphasis added.] (Mayor, 1990)

New research indicates the importance of expanding the traditional concept of development as to include issues of social and environmental sustainability through the creation of human and social capital (Laszlo & Laszlo, et. al., 2001; OECD, 2001). “Human capital represents the knowledge, skills and health embodied in individuals... [while] social capital refers to the norms and networks facilitating co-operation either within or between groups” (OECD, 2001, p. 12). These new forms of capital represent the foundation of the true democracy (i.e., a participatory democracy) necessary to enable purposeful and ethical socio-cultural evolution (Banathy, 2000). Knowledge management at the societal level seems to be a key component for the emergence of authentic democracy. Participatory democracy is an ideal form of governance in which all citizens are involved and share responsibility for making appropriate decisions and choices that will enable the well-being of society. However, third generation KM brings into play a future-creating orientation that calls for anticipatory democracy which is both participatory and future enhancing. Yet unless knowledge is distributed efficiently among the population, even participatory democracy will remain a myth. In other words, unless individuals and groups (i.e., average citizens and local communities) have access to knowledge and learning opportunities, have the social context for collaboration and resourcefulness, have the competencies to shape their present conditions and to influence their future, and have the moral sensitivity to make informed and life-affirming choices, we cannot expect any development initiative to be successful enough – evolutionary enough — for the transcendence of global problems and the emergence of a new social order. The trend is to shift from increasing the standard of living (measured in quantitative economic terms) toward more qualitative *and* quantitative metrics of the quality of life, closely linked to subjective issues of happiness, meaning in life, and socio-ecological well-being.

Sustainability is a rich source of innovation. Doing more with less, promoting living simply and meaningfully, and creating a sustainable economy where present and future human needs can be met without compromising the natural environment — these are some of the concrete objectives that any society interested in moving toward an evolutionary stage can begin moving toward. Third generation KM and the research agenda derived from its intrinsic challenges and opportunities can bring to light and set in motion the elements of an evolutionary guidance system for the ongoing self-organization of human societies in syntony with the life support systems upon which they depend.

Implications for Further Research

The present inquiry on evolutionary development and third generation KM departs from the well established foundations of evolutionary understanding based on the sciences of complexity, from the emancipatory and participatory traditions of systems thinking, from the wealth of resources in the growing field of KM, and from the expanding evidence that points to the interrelated set of global problems that currently challenge humanity. Evolutionary development is a call for integration, for applying what we already know, for innovating with the future of the planet in mind, for reinventing what it means to be human. The following is a list of research objectives that start to explore the “big moving picture” of our socio-cultural evolution and the integration of the knowledge and insights already available for a different approach to development initiatives. Suggested objectives for a comprehensive KM research agenda for evolutionary development include, but are not limited to, initiatives that seek to:

- 1) Facilitate the transformation of business-as-usual corporations into evolutionary corporations in order to launch the socio-ecological transformation of our global civilization (Hawken, Lovins & Lovins, 1999; Natrass and Altomare, 1999; Senge, et.al., 2001).
- 2) Explore the relation between anticipatory democracy and knowledge-based evolutionary development.
- 3) Contribute to the deeper understanding of the role of human and social capital in evolutionary development.
- 4) Design approaches and programs for broad participation of the global population in knowledge management processes of the first, second, and third generations.
- 5) Develop “an integrated body of knowledge that provides empirical principles for the generation and distribution of wealth in a knowledge economy” (Carrillo, 1999, p. 9) in order to influence policy for the reduction of the concentration of wealth at both global and local levels.
- 6) Contribute to the emergence of an authentic global learning society by emphasizing the importance of evolutionary learning and by creating the conditions for the integration of learning strategies in the core processes of business, mass media, the arts, health, governance, and community activities.
- 7) Design methodologies for regional evolutionary development planing.

- 8) Conduct action-research on the design of ELCs in diverse cultural contexts in order to increase the practical knowledge of how to interpret and adapt the vision of a sustainable and evolutionary future to their specific realities. To do so in ways that incorporate the design of appropriate learning agendas and action plans.

Evolutionary development is not a “leaders-only” form of strategic thinking. In fact, it is an approach for both policy formulation and citizen empowerment, for global thinking and local acting, for top-down decisions and bottom-up initiatives. Knowledge was the motor of change during the societal transition from medieval to modern society. It is meta-knowledge, or knowledge about the way knowledge influences the kind of societies that we create and about the way knowledge and society evolves, that offers the opportunity to come up with bold proposals for change. As Margaret Mead pointed out: “This is the first time in history that man [*sic.*] has been able to label what was happening to him while it was happening, and this is profoundly important” (in Montuori, 1991, p. 5). It is the first time that we have the challenge – and the opportunity – to be conscious participants in our socio-cultural evolution. Once we take on this responsibility, we will then have to learn what it means to become evolutionarily response-able. This is the challenge of KM practitioners of today, for tomorrow.

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