Innovation and Transformation Through Knowledge Management

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KM coming of age: A kaleidoscope of innovation opportunity

By Debra M. Amidon

ORGANISATIONS HAVE undergone unprecedented change. Some adjustments have been by design; the remainder have naturally evolved. Some adjustments – however carefully constructed – have not produced anticipated results. In many instances, the reverse effects may have occurred. Then, there are those times when the unexpected just happens and you cannot seem to trace the roots of a successful venture. Who would have predicted the success of Google, eBay, iPhone, Facebook or the orb-like Tata Nano – even a few years ago? These are breakthroughs of sorts; the effect of a multiplicity of factors which, coming together, produce a certain result.

Breakthroughs can come in the form of a research discovery which so catapults the application possibilities that even current R&D seems obsolete. It can be in the form of a market acceptance which demands more of the technology than product engineers ever imagined. It can come in the form of a managerial set of experiences during which the collective insights of a team produce something far beyond what any combination of individuals might otherwise have designed. These developments are also the result of excellent knowledge management (KM) practices and programs which have developed over the last two decades and have been employed from the strategic technology investments to the shop floor.

It is now widely accepted that management practices must be knowledge-based. Systems must be collaborative, not competitive or even cooperative, and the focus upon the entire innovation system must include suppliers, distributors, and other stakeholders of the innovation ecosystem including customers and even competitors. Such strategic business innovation systems operate amidst kaleidoscopic change, the dynamics of which will accelerate over time.
Business performance is measured in terms of intellectual assets and the ability to create and apply new ideas in a volatile marketplace. Symbiotic learning networks, both electronic and human, are as essential to day-to-day operations as they are to business strategy formulation.

All participants in the innovation system are self-motivating and responsible for creating new knowledge as a way of contributing value to the corporation and customers.

To survive in the new era of knowledge innovation, managers need to learn to monitor the ‘flow of knowledge’ with the same dedication as they previously managed the flow of capital, parts, and materials. Information technology, with sophisticated computer and communications systems, will embody knowledge processing capabilities which learn and feed forward intelligence to all participants throughout the enterprise. Knowledge is the asset to be managed and a new focus upon customer success provides a progressive way to together innovate a future.

In 25 short years, an agenda that was in the minds and hearts of a few has become the dominant theme of deliberations for the new millennium. Knowledge – often defined in terms of intellectual capital – is clearly the source of new economic wealth. Innovation is the process by which that wealth is converted into action, i.e. products, services, or initiatives.

Knowledge is valuable; but knowledge operationalised is more valuable. Innovation is the heartbeat of knowledge flow. Innovation is the process whereby value is created from the creation and application of new and reused ideas. Innovation is where inspiration and action meet to create value. There are three definitions that provide a grounding of understanding:

- **Knowledge-based economy** – An economy where organisations and people innovate knowledge (existing and new) more effectively to enhance economic growth and collaboration.

- **Knowledge innovation** – The creation, evolution, exchange, and application of new ideas into marketable goods and services for the success of an enterprise, the vitality of a nation’s economy, and the advancement of society.

- **Knowledge innovation zone** – A geographic region, product/service/industry segment, or community of practice (CoP) in which knowledge
flows from the point of origin to the point of need or opportunity to improve economic performance and socio-political well-being. A zone of innovation can be any type of enterprise, profit or non-profit. It can be defined as a company, a sector, a geographic region or virtual community and can include stakeholders – depending upon the intended scope of reach.

Terms such as prediction markets, serious gaming, crowd funding, and notions of singularity were hardly in the management nomenclature five years ago – never mind on the cover of *BusinessWeek* and the focus of workshops in all corners of the globe, such as Qatar, which hosts the World Innovation Summit for Education (WISE) and Boston, Massachusetts, which hosted the World Summit for Innovation and Entrepreneurship (WSIE) in 2012. The World Economic Forum has multiple initiatives to coalesce insight on the evolution of global innovation networks and their implications in a truly global networked world. Companies that adhere to their successful business models of the past are likely to lose the window of opportunity afforded by the compounding effects of digital technology and social networking.

How does one manage in such an environment subject to so many interdependent variables – known and unknown? In some respects, effective leaders seem to revel in the wonder of it all, control what they are able, and leave the rest to human and Mother Nature. This is the essence of a dynamic global economy in constant motion, shaping and being reshaped by daily and strategic decision-making at every economic level. As described by Margaret Wheatley: amidst the apparent chaos, there is a natural order of things. Patterns emerge from which we can discern the next steps forward. She speaks of ‘the constant weaving of relationships... energies that merge and change... a ballet of chaos and order, of change and stability, as two complementary aspects in the process of growth.’

**Innovation agenda (finally) on the radar**
We have all become actors in the exploration of the new innovation frontier. It is about innovation. It has always been about innovation; but it has taken some time for the KM community (infant as it is) to acknowledge the importance of the innovation system rather than merely accounting...
for intangible variables or cultivating knowledge-sharing networks and communities. Knowledge-sharing to what end? How does one chart the interdependence of performance, behaviour, and technology? This is the question. It is not the knowledge that gets created as much as how it is put into action – shared or applied in ways that generate value, however that might be defined. Now, chief knowledge officers (CKOs) have morphed into chief innovation officers – the new CIOs.

Our top leadership has evolved from a past in which command-and-control was the managerial order of the day. Many are trying to manage organisations in dynamic business environments with 50-year-old management technology. These concepts may be quite foreign and very difficult to justify. How does one create a rationale and business plan for an unserved market and unarticulated needs? The fundamental market changes of uncertainty have changed the core role of executive leadership into one of trust, learning, and inspired vision.

Historically, good managers were able to create a high quality product or family of products, identify the potential market, develop a strategy, and leverage off results. The current kaleidoscopic environment prohibits such simple, linear successes. Amidst such dramatic change, organisations must create ways to ‘manage stability and change’ simultaneously according to the management philosopher Henry Mintzberg.

**Migrating from business planning to innovation strategy**

A strategy is a deliberate plan of action and the leadership capability to see the plan through to execution. An innovation strategy is similar to a road map in that it outlines where an enterprise is to go, and organises the resources to get there. However, there may be no perfect map; and the measuring devices may not be as accurate. A competitor may change the whole landscape even before goals are reached.

Key to developing an innovation strategy is looking at knowledge – especially new knowledge – as a resource. Knowledge management and innovation are the key players in the path of progress. An innovation strategy is also distinct from business planning. For instance, business planning is an analytic routine based on the tacit assumption of continuation of the current situation (status quo). Innovation strategy, on the other hand, is a synthetic
practice based on innovation and uncertainty – something which capitalises upon the effects of a kaleidoscopic economy.

The first step for an effective innovation strategy is to make the process explicit. It is that simple and that complex at the same time. If the process is not managed systematically, it is left to serendipity. Most organisations expect innovation from R&D, the function where new ideas are funded. With a global and interdependent perspective of the enterprise, ideas can and must come from every function and external stakeholders.

Shortly after the astronauts of Apollo 17 reached the moon, the world awakened to a new perspective of bringing a vision into reality. It required more collaboration and faith than anyone previously dared to dream. Results were wondrous and beyond expectations. Similarly, executives today are caught in a quandary. They can continue to utilise the tried-and-true methodologies (unsuited for today’s economic environment) or they can experiment with the unknown and venture forth with management initiatives that project innovation, creativity, and responsible risk. New assumptions have formed:

- Knowledge is the primary driver of innovation – not technology;
- The value of human potential can and should be linked to economic results;
- It is a systems dynamic – not a cause-effect value chain – that is operating;
- A prosperous future is based increasingly on interdependence, interaction, and collaboration; and
- It is the flow of knowledge that must be visualised, monitored and incentivised.

Integration of knowledge as an interdependent variable into conventional business methodologies creates a dynamic that is no less dramatic than the shifting from a flat earth view of the world to a global view. Initially, the world was seen as 2-dimensional – similar to how many business managers perceive their business environment today. Design a market matrix, create a balance sheet, and manage the process in a simple methodical linear mode. Build the better mousetrap and the market will beat a path to your door.
Similarly, business planning is the current representation of the process and plans are necessary to position a particular enterprise with competitive advantage in a particular industry or region of the world. It provides a methodology to define business plans usually based upon a product/market portfolio.

In contrast, a 3-dimensional global view capitalises upon the dynamics of the multiple effects of what we describe as a kaleidoscopic economy. It is not the speed of change of a variable, or the speed of change of multiple variables. It is the compounding effect of the speed of change of multiple variables creating a business environment that is difficult to understand, much less manage. The challenge is not to make existing businesses bigger; it is to create new businesses. It is not to evolve existing technologies as much as it is to envision products and services, which meet the unarticulated needs of customers or an unserved market and to do so ahead of the competition. Today, the market operates with a system dynamic we do not yet understand.

The new value proposition – Value capital drivers
The heart of any innovation system is performance – however that might be measured. To date, however, we measure what can be measured rather than what counts. Now, we have cover stories in the business press admitting: ‘In a knowledge-based world, the traditional measures don’t tell the story. Intangibles like R&D are tracked poorly, if at all. Factor them in and everything changes.’

Figure 1: Migration to innovation strategy
United Nations major reports on knowledge societies admit that transformation is far more a function of the human element than the technology – previously considered ‘manageable’ in spite of the productivity paradox.

In a Knowledge Innovation Zone (KIZ) Initiative, we examined the plethora of new systems under development and in various stages of application. With the KIZ Inventory of Performance Measures, we’ve examined programs across the World Economic Forum, the UN, The World Bank, Milken Institute, Robert Huggins Associations, Booz Allen Hamilton, Regional Indexes, City Annual Reports, EUROSTAT, WIPO, and The Economist, to mention a few.

Together with the Kaieteur Institute of Knowledge Management (Canada), we have now developed the Triple Knowledge Lens (i.e. BEYOND Triple Bottom Line reporting) and the 15 value capital drivers – complete with the variables that influence the drivers in a fully functioning knowledge innovation system.

From this we were able to glean how each tracked element related to the knowledge-based economy (human capital), knowledge-based society (relationship capital) and knowledge-based infrastructure (structural capital).

Figure 2: 15 IC Driver Framework
Imagine 25 years ago, intellectual capital (IC) was just a concept. Now, we have 150 variables that might impact intangible value.

The benefits of KM will come through when the perspectives of information management, human learning and innovation processes, and supporting technologies are fully integrated. Now that we have a better understanding of the Knowledge Value Proposition, we must also add that the performance measurement of intellectual capital can (and should) be added to the enterprise system architecture.

These cross-organisation processes should ensure streamlined practices that provide efficient and effective planning, review, and monitoring of investment strategies. Activities will cross the boundaries of functions, businesses, industries, and geographies. Knowledge capability/accountability is valued more than hierarchical authority; and the system enables real-time innovation and global resource optimisation.

What was once only a concept has now the potential of becoming a fully-functioning global innovation system. These factors can be calibrated by an individual (see Figure 5 at the end of this article), a team, an enterprise, a sector, a region, or a nation.

Knowledge innovation – In action
Given the negative results of downsizing, stock market paranoia, and global economic instability, we need to manage the innovation environment more than ever. However, it is more a function of creating the conditions within which innovation can occur – where ideas flow into and within the system and are converted into viable products and services that create value. Create the playground, determine the players, cultivate interaction, and mine the results.

The $P^7$ KIZ Assessment is a social systems design methodology to manage programs from concept through full-scale implementation. Knowledge, as the asset of abundance to be managed, has a magnifying effect as represented in the $P^7$ (i.e., $P$ to the $7^{th}$ power). $P^7$ targets the flow of knowledge with a new mindset and systematic assessment process based upon inspiration, insight, and interaction. Value is created when knowledge is in motion. $P^7$ is an enquiry and application system – an iterative process – building upon the interdependence of three major phases: design, development, and deployment – each with pre-work and instructional materials.
With USAID Funds, the ENTOVATION methodology was used across the Ministries of Egypt via the administration of the Regional Information Technology and Software Engineering Center (RITSEC) and virtually facilitated through Eurofocus International Consultants based in Germany. Results produced a proof-of-concept and included how 120 high potentials in eight cohorts generated: 32 group Knowledge Innovation® projects; 160 innovative and viable ideas; and 320 small projects. Fifteen Knowledge Innovation® trained high potentials developed: Five viable Knowledge Innovation® Strategy funding proposals and are moving them into incubation. Examples include:

- National Knowledge Innovation Network;
- Empowerment of youth through employment;
- National Cooperation Centre;
- Public Private Partnership;
- SMART Centres for Youth;
- Investors’ Guide;
- Enhancing SME competitiveness;
- Commercialising The Unit of Feasibility Studies;
- Empowerment of Women;
- The National Council for Egyptian Expatriates (NCEE);
Leaders of the Future;
- Leading EGAS to the Knowledge Innovation Era;
- Tourist Data Integration System; and
- Narrowing the gap between NRC and the business sector.

Early stages of the innovation process are fundamental to successful implementation. The selection of the innovation management team includes stakeholders, including sponsors and champions. Time is taken to clarify overall purpose and mission, envisioning the project/programme, training the team, and setting guidelines for interaction. The goals are: to create a strong strategy for success with selected and invited members; set criteria for working together; state open or objective outcomes; and get a grounding of purpose to work together.

The P7 Blueprint operates more as a value system of activity than a chain of activities or events. For our purpose, the P7 diagram illustrates some of the connections: purpose, principles, process, performance, policies, practice, and prosperity through stakeholder innovation.

Figure 4: Knowledge innovation zone (KIZ) blueprint
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Each P segment includes a guidebook with specific objectives, reference material, case examples, tools for analysis, and in some cases instructional tools. Together, they represent a system for high-performance and sustainable innovation in the knowledge economy.

P¹ Smart Innovators have a sense of purpose
The intent is to have a shared understanding of the trends of a triple knowledge lens (TKL) – the triangulation of the knowledge-based economy (markets, business, and commerce), knowledge-based society (networks, communities, and culture), and knowledge-based infrastructure (organisation, environment, and technology).

■ Explore a fundamentally new mindset of how best to approach the kaleidoscopic change of a knowledge economy.
■ It is not the speed of change as much as it is the compounding effects creating a dramatically new landscape for innovation.
■ The Triple Knowledge Lens (TKL) provides that mindset beyond Triple Bottom Line (TBL) Reporting.
■ You need a timely understanding of emerging trends ranging from the war for talent, effect of networks, new business models for commerce and delivery, virtualisation of markets, globalisation, the value of visualisation, and zones of innovation.
■ Such a mindset must be holistic, integrated, and complete.

P² Smart Innovators guide with a set of principles
The intent is to examine the principles, architectural considerations, and options for action-based strategies suitable for enterprise planning. Principles – carefully researched with intelligence analytics – can be used as guideposts into the future, from economic abundance to knowledge fusion and the knowledge technology grid.

■ Root your strategic direction with a core value system, shared vision, and standards of operational excellence. Appreciate the interdependence among variables: performance, structure, people, process, and technology.
Be savvy about new organising principles – how they are different from industrial management – and the implications for your own action-based planning.

There are new forms of wealth-creation, new constellations of networks and social media, and an evolving knowledge innovation grid or mesh supporting real-time innovation dynamics.

There are new rules of the game. The old ones do not apply; and the new ones have yet to be innovated. So, become a part of the action. Ground your plans amidst the uncertainty and do not be afraid to iterate new solutions.

The knowledge environment is one that demands constant adaptation.

**P³ Smart Innovators understand the full process of innovation**

The intent is to perform a systematic gap analysis of the relative strengths and weaknesses of the enterprise and create an integrated knowledge strategy and projects to effect high-performance. An Knowledge Innovation® Assessment (KIA) leads to plans for the innovation ecosystem with impact – not output or outcome – in mind.

- Appreciate how innovation usually takes many players – several even outside the walls of the organisation – to bring an idea to market.
- The impetus for change (incremental and breakthrough) begins with the individual – every individual. Value is realised when joint insights are crystallised into actionable projects and services.
- Innovation is idea creation through full application. It is theory in practice. It involves creation, conversion, and commercialisation.
- It includes monitoring the competition, but not where they have been… where they are headed. In other words, how are the competitors innovating?
- You need to help develop the interface of strategic alliances, customer/stakeholder image and interface, and leadership visibility, and leverage technology and communications.

**P⁴ Smart Innovators gauge financial and non-financial performance**

The intent is to gain an understanding of which drivers and influencing variables are most germane and – if established – would yield expected
standards of results, and to put the plan in motion. Intellectual Capital – in the form of Human, Relational, and Structural Capital – can be assessed with 15 value capital drivers of a Knowledge Economy.

■ Building upon the TKL [P\(^1\) above], identify those relevant parameters of what would constitute success – however that might be defined.
■ Enterprises are increasingly dependent upon value contributed to the bottom-line by intangible or intellectual – human, relational, and structural – variables.
■ To realise results from ambitious plans – whether company, country, or cluster-based – requires significantly improved indicators to ensure economic growth and/or regulate and streamline performance delivery.
■ Take action to create the conditions and incentives to optimise your success and inspire the imagination of sponsors for financing.
■ As difficult as it may initially be, define those intangible variables with as much precision as possible. We know what can be measured gets managed. Perhaps what gets innovated gets measured too.

P\(^5\) Smart Innovators want governing policies – ethical and transparent
The intent is to revisit existing policies to stimulate more effective knowledge-based economic and financial policies to foster human and technical communications across boundaries and result in more efficient and effective innovation practices.

■ Consider the relationship between governing policies and behaviour. Perhaps this dimension of innovation is the least understood in today’s knowledge economy. Trust relationships appear to be the primary cultural norm in this new era of knowledge-sharing and collaboration.
■ The flow of knowledge and intangible assets, not the flow of technology per se, needs to be incentivised and monitored.
■ To enable a culture of innovation and entrepreneurship – whether company or industry-based – requires new methods of governance.
■ Given emerging market dynamics, new guidelines are required to cultivate community networks, high levels of trust and transparency, responsible risk-taking, and enterprise brand integrity.
These are not the command-and-control systems of the past, but develop leadership vertically, horizontally, and diagonally… and, for the most part, need to be considered in a local, regional, and global context.

**P6 Smart Innovators use ‘bench-learning’ to monitor practices**
The intent is for bench-learning, (i.e. learn from the best as they innovate) to transfer those insights into the leadership and to be able to map and visualise the knowledge innovation gained.

Around the world, organisations are experimenting with new models of management innovation, from communities of practice to electronic (and even mobile) conferencing.

This new knowledge leadership requires an understanding of the new roles and responsibilities at all levels of the organisation, and a deeper understanding of how best to guide behaviour with improved metrics and incentives to put into place sustainable actions.

There is consensus that this innovation competence is more about changing behaviour – individual and group – than just developing new ideas and skills.

Benchmarking is outdated; so seek an organisational partner that takes a much more dynamic and interactive approach of bench-learning.

**P7 Smart Innovators know prosperity depends upon stakeholder innovation.**
The intent is to create viable mechanisms to ensure constant iteration of new products and services to meet constituent needs and to do so while maintaining an innovative competitive positioning.

You have not innovated until your stakeholders place more demands on your work.

However you define your constituency, you are dependent upon their success, not their satisfaction.
Stakeholder interaction is more about a continuous Möbius strip relationship of creating mutual value.

Once designed and developed, initiatives need constant feedback and monitoring so that progress is inevitable and sustainable.

Promotion takes many forms, such as verbal, print, and multi-media, and should almost always be considered bi-directional.

Treat customers – and stakeholders and competitors, for that matter – as sources of knowledge, rather than points for end delivery. They are partners in your future.

Conclusion
Moving beyond traditional business planning practices will not be easy; but the rewards will be great. Today we measure what we can measure, rather than measuring what is important. Now we underestimate the true potential of information technology, knowledge processing, and worldwide communications.

This kaleidoscopic Knowledge-based Economy requires a new mindset and classification schema, the scaling and measurements systems, and the compass to chart new directions. Because something hasn’t been done before is no reason not to innovate. We must learn to create the business plans for emerging markets. Only then will we unleash the bountiful opportunities afforded – managing knowledge as the resource of abundance, not scarcity. We will do so systematically and with renewed purpose.

Simply stated, we have reached the law of diminishing returns on competitive strategy. There is a new game in town – the art of ‘collaborative advantage’. This does not mean that we do not compete; we do. But now, we need to collaborate to compete. Innovation provides the common language across functions, industries, sectors, nations, and even virtual communities.

Although much has been written on knowledge management and the knowledge economy, the reality is we know very little about the real implications of this inevitable transformation. One thing is certain – the journey into the next frontier will bring forth new value for knowledge and the innovation processes in ways today unimagined.
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<thead>
<tr>
<th>Triple Knowledge Lens</th>
<th>Capital driver</th>
<th>Inventory query</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human capital</td>
<td>Knowledge Capital</td>
<td>How well respected are you for the power, depth, and breadth of the knowledge assets in your personal portfolio including specialised know-how, experience, and knowledge mastery?</td>
</tr>
<tr>
<td></td>
<td>Leadership Capital</td>
<td>Do others generally recognise you as having outstanding leadership qualities, skills, and capabilities?</td>
</tr>
<tr>
<td></td>
<td>Innovation Capital</td>
<td>Do you have proven and consistent capabilities regarding the incubation, development, production, and marketing of innovative designs, processes, and systems?</td>
</tr>
<tr>
<td></td>
<td>Entrepreneurship Capital</td>
<td>How recognised are you for exhibiting entrepreneurial instinct, passion, zeal, drive, and success?</td>
</tr>
<tr>
<td></td>
<td>Reputation Capital</td>
<td>To what extent do you work to build a positive image and standing in your field and how are you perceived by others?</td>
</tr>
<tr>
<td>Relational capital</td>
<td>Diversity Capital</td>
<td>To what extent do you proactively maintain, cultivate, and respect diversity in your relationships, networks, and community connections?</td>
</tr>
<tr>
<td></td>
<td>Brand Capital</td>
<td>To what extent does the brand encompassing You.Inc have visibility, presence, and positive mindshare in the marketplace?</td>
</tr>
<tr>
<td></td>
<td>Network Capital</td>
<td>Would others consider you to have deep, dense, far reaching network connections and influence within those networks?</td>
</tr>
<tr>
<td></td>
<td>Cultural Capital</td>
<td>To what extent do others respect and trust your unique constellation of values and the ethos reflected in your mindset, way of thinking, spirit, learning desire, imagination, and creativity?</td>
</tr>
<tr>
<td></td>
<td>Social &amp; Community Capital</td>
<td>Are you recognised within the communities you inhabit to be an active high involvement contributor, participant, and representative of all that’s good within those social ecologies?</td>
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</thead>
<tbody>
<tr>
<td>Structural capital</td>
<td>Strategic Capital</td>
<td>Do you have formulated business plans, business designs, and business models in place that provide you with a superior and strategic business advantage?</td>
</tr>
<tr>
<td></td>
<td>Organisational Capital</td>
<td>Do you have organisational structures and capabilities in place that provide you with a collaborative advantage?</td>
</tr>
<tr>
<td></td>
<td>Intellectual Property Capital</td>
<td>To what extent are you in explicit control of valuable intellectual property assets?</td>
</tr>
<tr>
<td></td>
<td>Technological Capital</td>
<td>How do you think an independent outsider would rate your technological sophistication and prowess?</td>
</tr>
<tr>
<td></td>
<td>Environmental Capital</td>
<td>How do you think others would assess the extent to which you have internalised socially responsible, sustainable, and green values into your current practice?</td>
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Figure 5: Intellectual capital driver self-inventory

**References**

2. Knowledge Innovation® is a registered trademark of ENTOVATION International Ltd.