

# KNOWLEDGE MANAGEMENT: A PRACTICAL GUIDE

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## ABSTRACT

Knowledge is increasingly regarded as the only sustainable source for continuous innovation and competitive advantage of persons, organisations and nations in the 21<sup>st</sup> century where economies and human-ecology well-being are said to be knowledge-based, and knowledge management as an indispensable means for survival, growth and betterment. Adopting a pragmatist and holistic perspective, this article introduces readers to the theories and practices of knowledge-oriented management in organisations, which covers purposeful coping of three differentiated yet related areas: knowledge assets, knowing processes and knower relations. It suggests that a systems approach that promotes synergy between efficiency, creativity and legitimacy will increase opportunities for organisations in the search for competitive advantage and sustainable prosperity.

**Keywords:** knowledge, knowing, knower, knowledge management, pragmatism

## TOWARDS KNOWLEDGE-BASED MANAGEMENT

Knowledge management is not new. For thousands of years, parents in the countryside shared experience with their children forecasting the weather, owners of family businesses passed commercial wisdom to next generations, master craftsmen destroyed temples and rebuilt them so that construction skills would live on, and workers exchanged know-how on the job. But it wasn't until the 1990s that corporate executives, university professors, national leaders and even the World Bank started talking about knowledge management. What is new is that knowledge management has become a consciously promoted and organised practice attached with strategic significance for organisations to pursue innovation, gain competitive advantage and improve performance.

Why does this change happen? Apart from the efforts of influential management thinkers such as Peter Drucker and Ikujiro Nonaka, several developments occurred that pushed knowledge management to the forefront of business strategy and management. First, it is increasingly recognised that the creation and maintenance of competitive advantage is not just about scale, scope and speed, it also demands continuous innovation. And innovation is not just about R&D – enterprises compete on innovations in technology, product, service, market, production process, organisational structure, corporate partnership, business model, and so on. Hence, the management of technical and business knowledge is regarded critical to success in the marketplace. Second, as globalisation rapidly spreads and deepens, firms are compelled to outsource activities for optimising their value chain globally, acquire and establish businesses offshore, serve and create markets around the world. As a result, sources of new knowledge are

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becoming geographically dispersed, which demands effective coordination. Finally, the development of high speed and low cost computer, communication and other information technologies makes it possible for organisations to collect, store, analyse and transmit widely distributed information at affordable prices. This enables firms to transform business processes and opens up knowledge transfer needs and opportunities. In this changed, and still changing, competition landscape, knowledge is thus increasingly taken as the strategic source of continuous innovation, and knowledge management the critical means for sustainable competitive advantage (Teece, 2008).

But what is knowledge, is knowledge manageable? These are highly philosophical questions; yet they have direct relevance and implications for business practice. If we do not know what knowledge is, then what are we to manage? And, if knowledge turns up unmanageable, what is the point of 'knowledge management'?

The bad news is: despite continuous debates on these fundamental questions since Aristotle and Confucius's time, which have consumed our best minds, there appear no consensual answers. Indeed, knowledge is such a complicated and controversial subject that we humble human beings currently know very, very little about how it is created and whether it can be managed at all. This is also true to knowledge-related constructs, e.g., (organisational) capabilities or competence. We all take that these 'things' are valuable for improving organisation performance (however performance is defined), but they are just difficult to pin down and arrested – what is, and is not, knowledge or capability, and how to 'manage' it? (Foss, 2009)

Of course, there is no lack of conceptual schemes for classifying data, information and knowledge (scholars like this, some even extend their schemes to include 'wisdom' on the top of knowledge, as if the more complicated the scheme the better); there is also the hype-jump from data-mining to 'knowledge-discovery' models and techniques (which is loved by software companies and 'knowledge engineers'). But when put into practice, it quickly becomes clear on the shop floor and in the laboratory that scholarly schemes often confuse more than they intend to clarify (I pass to you via the Internet a report of a successful project – am I sharing with you data, information, knowledge or wisdom?), and 'knowledge-mining' is usually a sexier label of data-mining models looking for new buyers.

Albeit all these confusions, however, given the increasing competition, deepened globalisation and rapid technology change, we cannot leave knowledge, which is fundamental to the life and death of organisations, to chance. Organisations face a dilemma: we do not know what knowledge is but we must 'manage' it, now.

The good news is that there is a way forward and the way forward is a pragmatic approach, this article would posit. We may not, and we do not need to, have a universal, once and forever definition of knowledge, but we can act upon a working understanding of it for practical purpose – an understanding not capturing 'the truth', but useful, that allows us to accomplish what we want to achieve in specific situations; we may not be able to predict or control knowledge in the way we use to manage land, machine and the finance balance sheet, we can nevertheless design organisation structures, processes and policies in order to influence the behaviour of managers and workers so that they would likely create, share and utilise knowledge willingly; we may not

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have one-size-fits-all knowledge management models or programs, we can at least supply some lessons and insights based on which reflective managers can learn their own ways to benefit from the knowledge embedded in the assets, processes and relationships within and beyond their organisations. It is for these reasons we appreciate Nonaka and his colleagues' (2008) recent promotion of 'knowledge-based management'.

In this article, a pragmatic approach is taken to knowledge-based management that gears managerial efforts and organisation resources to:

- get the knowledge vision right,
- focus on organisational manageable,
- make it work in particular contexts.

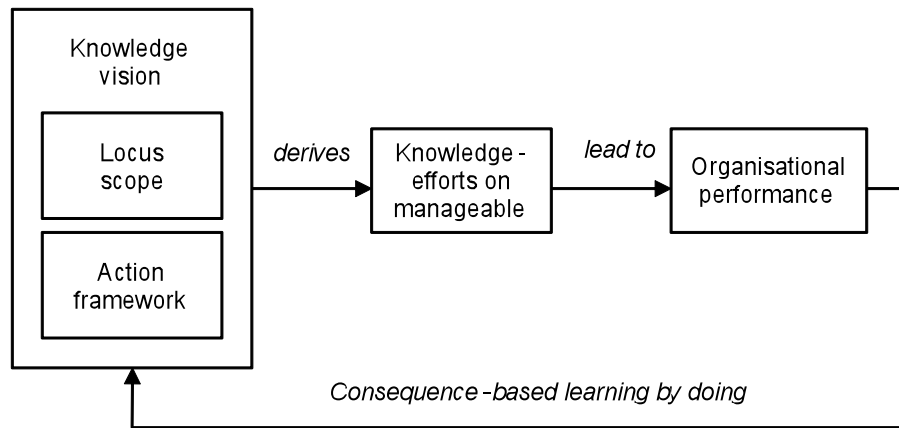
In the following pages, we shall explore the three components of knowledge-based management in some details. It is not meant to be final-landing conclusions to follow, but spring-board hypotheses to work out.

### **GETTING THE KNOWLEDGE VISION RIGHT**

A knowledge vision denotes our understanding of what are relevant, important, useful and operable in knowledge management for improving organisational performance. It shapes the purposes, problems, methods and solutions of knowledge-related programs, and is therefore chiefly determining the effectiveness, success or failure of organisation's knowledge-promoting efforts. Organisations all have knowledge visions, articulated or otherwise, in the way that we, as persons or as groups, all have views of the world. We may not recognise this, but our knowledge visions (and worldviews) underlie our knowledge-related initiatives and investments all the time. It is hence the job of leaders, policy makers and managers to surface, challenge, share and transform the knowledge visions of organisations when initiating and investing in knowledge management efforts. As any single person's vision is limited, managers need to do this job together with relevant stakeholders: other managers, workers, customers, business partners, local community, and so on. This is for two further reasons. For one, since knowledge programs produce impacts on the well-being of stakeholders, from a moral perspective they should have their say. For another, it is the stakeholders' personal as well as collective efforts that make knowledge programs work (or fail), it is therefore important that stakeholders share the knowledge vision and this will happen only when they participate in the on-going processes of challenging, maintaining and transforming those visions.

It is useful to examine an organisation's knowledge vision via two conceptual devices: a locus scope and an action framework (see Figure 1). Let us begin with knowledge locus scope.

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**Figure 1.** From knowledge vision to organisational performance

### Content scope

A knowledge scope concerns a pragmatic question: ‘What do we need to know for solving problems at hand?’. Let’s take a marketing executive’s position. For one thing, the company needs to deliver products/services to the marketplace in technically efficient ways, for which her staff act on operational research and engineering knowledge. For another, market researchers must understand customer preferences that are not always ‘rational’, for which they seek humanity and cultural knowledge. Further, as public relations and social changes shape consumers’ conceptions of the company’s activities, which ultimately determines the company’s competitiveness and survival, the marketing executive turns to knowledge in business ethics, sociology and political economics. Useful knowledge hence comes to us in many forms, from various disciplines, e.g., knowledge from natural sciences and engineering for investigating the material world, knowledge from psycho-cognitive studies for understanding our mental world, and knowledge from socio-political inquiries for coordinating our social world. This applies to public policy-making, too: sound decisions upon whether, and how, to build the Three Gorge Dam on China’s Yangzi River, to reform Japan’s postal system, to transform the UK pension provision, to tackle WTO disputes between nations, and so on, all demand proper data gathering, rigorous model building, informed public debate and legitimate political action, for which wide ranges of heterogeneous sources and different forms of knowledge are indispensable. Our scope about knowledge locus matters.

Our survey reveals that research and practice on knowledge scope commonly cover three analytically differentiated yet empirically interconnected dimensions: knowledge assets, knowing processes and knower relations (Zhu, 2008).

*Knowledge asset.* Along this dimension, knowledge is seen as embodied in tools, equipments, electronic document systems, and so on. In managing knowledge assets, the emphasis is on capturing, stocking and transmitting what people know by the means of scientific logic, engineering principles, programmable methodologies and information-communication technologies. While we should be cautious against the idea that knowledge management is all about building huge web-based protocols, complicated ‘knowledge bases’ or agent-based simulation, we must take effort to enable knowledge sharing with available and affordable

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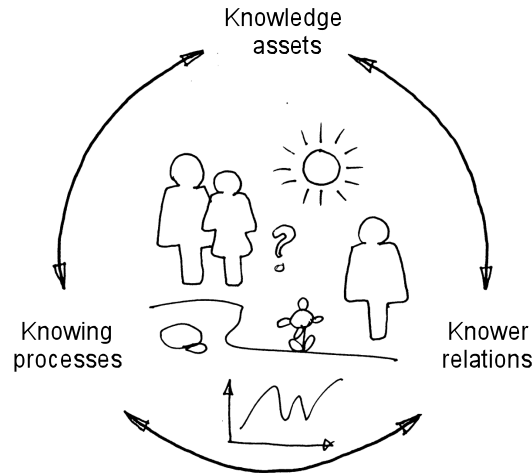
technologies. Technology is a bad master, but can be a good servant, to knowledge-based management. One small story demonstrates this (BBC 2008). A British doctor in Democratic Republic of Congo conducted a forequarter amputation on a local boy – the boy was badly infected due to losing most of his arm in the crossfire between government and rebel forces. The doctor, never performed such operation before, proceeded by receiving instructions from an experienced doctor in London via texting messages forth and back during the operation. The operation was successful and the boy survives. Without knowledge sharing via the mobile phone between ‘knowledge workers’, he would certainly have died. Other successful examples include British Petroleum’s worldwide Virtual Teamwork Stations, Hewlett-Packard’s Lotus Notes customer service database, and so on.

*Knowing process.* This dimension focuses attention on how people know and how their knowing can be enhanced for achieving organisational success. Nonaka’s ‘knowledge creation’ process model is perhaps the most influential in this regard (Nonaka and Takeuchi, 1995). The model conceptualises knowledge creation as a series of epistemological conversions between tacit and explicit knowledge: socialisation, externalisation, combination and internalisation (SECI), which work along an ontological spiral that moves up and down between individual, group, organisation and inter-organisation levels. Significantly, the SECI conversion model brings culture in, stresses the context-specific, practical, social and spiritual aspects of knowledge creation. It is about both ideas and ideals, skills and emotion. Knowledge is created while organisations solve problems; but people don’t just solve problems, they create and define them according to their vision, value and the searching of common goodness. The model posits that knowing processes as such cannot be managed by the predict-and-control convention or scientific principles. Rather, the spiral conversions are facilitated by *ba*, care, love and teamwork, and the means to achieve these are proper organisational structure, culture, incentive, metaphors and distributed leadership (for further theoretical elaboration and practical business cases such as Seven-Eleven Japan, Eisai, YKK and Muji see, for example, Nonaka *et al.*, 2008).

*Knower relations.* This dimension is concerned with diverse interests, power configurations between ‘knowledge workers’, indeed all employees and stakeholders, and the consequences in the market economy. If knowledge has value and is scarce, why should we give it out freely? Particularly, if you are to be laid-off tomorrow – even in Japan this is becoming more often, are you to contribute more to the organisation ‘knowledge base’ today? Organisations, industries and countries may have built ‘knowledge super highways’, but would anyone drive on them without knowing what has to be paid for it? After all, why are there patents, copyrights, legal contracts and intellectual-property lawsuits? Who will benefit from knowledge management: stockholders, executives, or workers? Let us face it: we have created more knowledge, and perhaps managed it more efficiently, but the gap is getting wider between the rich and the poor, the haves and have-nots, and our Home Earth is in an unprecedented alarming state. Don’t forget, just recently, it was the ‘new knowledge’ created in the banking sector, some of them programmed into ‘automatic stock-trading knowledge system’, which brought the world economy into a deep recession (*Financial Times*, 2010). No wonder surveys and case studies repeatedly confirm that the knower issue is regarded by managers as most decisive and challenging in knowledge management (Johnson *et al.*, 2002; Ruggles, 1998).

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To put it metaphorically, managing knowledge assets emphasizes on ‘high tech’, enhancing knowing processes amounts to ‘high touch’, and caring knower relations is about handling ‘high fences’. This we call a holistic scope. It emphasizes the complementary and reciprocal interconnectedness between knowledge assets, knowing processes and knower relations in the creation and maintenance of superior organisational advantage.



**Figure 2.** A holistic knowledge scope

The problem is, according to research findings, too often, the knowledge scopes underlying many knowledge efforts are too narrow to accommodate the complexity and complementarities between knowledge assets, knowing processes and knower relations. Knowledge-promoting programs are usually designed to manage merely assets, processes or knowers respectively. Knowledge management means different things to different people, lacks a ‘bigger picture’ wherein various knowledge-related efforts can interact with each other, as if changes in one will not introduce or demand any change to/from the other (Assudani, 2005; Powell and Swart, 2005; Roberts, 2004) – organisations claim they value their human ‘resources’ while at the same time lay-off workers and middle managers ruthlessly in the names of ‘efficiency’ and ‘productivity’, for instance (Mintzberg, 2007; Reich, 2010). While diversity, including that in knowledge management, has great value, it is not an unqualified virtue. When coupled with a reductionist mindset, it induces dissipation not synergy, it destroys rather than improves organisational performance. Hence, we need to consider high-tech, high-touch and high-fence efforts as parts of the knowledge management whole, to ensure that the whole is bigger, not smaller, than the sum of its parts. It is imperative to remind ourselves that

The performance of a system obviously depends on the performance of its parts, but an important, if not the most important, aspect of a part’s performance is how it interacts with other parts to affect the performance of the whole. Therefore, effective systems management must focus on the interactions of its parts rather than on their actions taken separately (Ackoff, 1994, p. 180).

It is in this regard that a holistic scope has much to offer. Surfacing, questioning and transforming our knowledge scopes nurtures an inclusive approach since it encourages managers

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and workers to talk to each other, to construct a bigger picture – never complete but always changing though – that connects focal knowledge initiatives to organisation-wide purpose, strategy and practice.

### Action framework

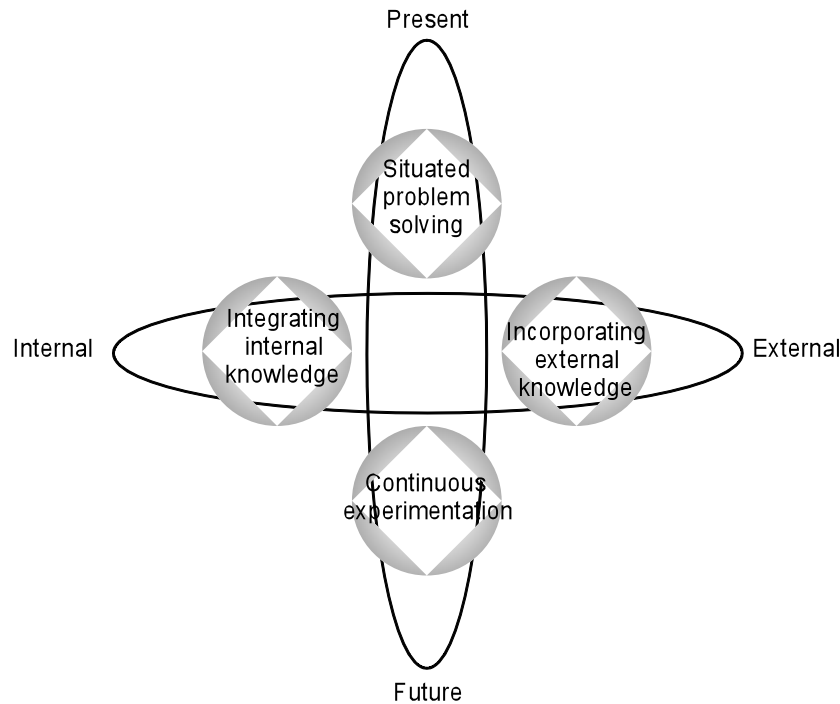
Action framework can be seen as a bridge that translates an organisation's knowledge scope into actionable initiatives. The premise is that, even with a holistic scope, effective activities do not occur spontaneously but need to be promoted, supported and coordinated. This is so because, as indicated earlier, knowledge-oriented efforts, if effective, cannot be left to chance but demand constant managerial attention. If locus scopes explore 'What is important?', then action frameworks figure out 'What to do?' in knowledge-based management.

While every organisation has its knowledge scope, holistic or narrow-minded, articulated or otherwise, this is not so to action frameworks. Action frameworks are usually intentionally created or adopted by managers for the purpose of mobilising organisational commitment, resources and energy toward collective actions, in contrast with *ad hoc*, let-what-happens-happen behaviour. Action frameworks can be formal or informal, driven from intuitive gut-feeling or deliberate plan. Given that knowledge efforts should ideally permeate organisation's every level and division, owned by every workers, managers and wider stakeholders, a well-thought and articulated action framework has the advantage of being communicated and shared effectively. Of course, well-thought action frameworks need not necessarily be in a formal, structured format. It all depends on organisational contexts. Sometimes, metaphors, analogues and story-telling will do a good job, at other times, clear statements and formal deliberations are needed.

We take Leonard-Barton's (1992) four-action-area framework as an exemplar. The rationale of our choice is not because 'four' is the magic number. Managers may choose three, five, or other four action areas as their own 'what to do' according to their organisation's circumstances. We introduce Leonard-Barton's action framework (with our interpretation and reconstruction though) as the starting point because it is well-informed by holistic thinking – Leonard-Barton calls it 'an organic system view', and is highly compatible with our embracing knowledge-knowing-knower scope.

The Leonard-Barton framework focuses managerial attention on four knowledge-oriented action areas along two dimensions. Along the present-future dimension are situated problem-solving and continuous experimentation, whilst along the internal-external dimension are integrating internal knowledge and incorporating external knowledge activities. Let us have a brief look at them one by one.

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**Figure 3.** A holistic action framework (based on Leonard-Barton, 1992, p. 25)

The ‘situated problem solving’ action area manifests a pragmatic orientation: solving real problems in here-and-now life experience is the starting point and destination of human actions. Knowledge creation is not about finding time-and-context-free truths, but about improving our capacity to act, i.e., to define and solve problems, in specific situations. Knowledge-based management should therefore benefit organizations by solving pressing problems in current operations. Knowledge management is not therefore to burn money, but for creating and capturing value. Without this down-to-earth, pragmatic orientation and convincing cost-effective evidence, no knowledge program or initiative can be viable.

The ‘continuous experimentation’ area releases knowledge efforts from short-term traps, enables organizations to pursue long-term competitive advantage. Innovation, the engine of organizational excellence, is by definition doing something unconventional, something new, there is always risk. No risk, no gain. When experimentation stops, innovation dies. Promoting continuous experimentation demands, and nurtures, a positive attitude toward risk, which allows organizations to learn from mistakes as well as successes. Without continuous experimentations guided by a future orientation that balances short-term performance and long-term success, there can be no sustainable competitive advantage.

The ‘integrating internal knowledge’ area encourages sharing and cooperation across functions and projects in an organisation. Because of increasing division of intellectual labour, knowledge in modern organizations is widely dispersed. Successful companies combine distributed, heterogeneous internal technology and business knowledge, design it into innovative products and services that lead the market. Knowledge creation happens when people interact with each



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other. It is everyone's job, ideally takes place along the whole internal value chain or 'market chain', in all organizational processes, across organizational divisions, in a well-coordinated manner.

The 'incorporating external knowledge' area promotes an open business model for knowledge-based management. In the face of rapid technology change and fast moving marketplace, as products and services become increasingly complex and interconnected, organizations' ability to tap a larger variety of knowledge sources through a rich portfolio of business partnerships is crucial. Organization members' competence to absorb and utilize knowledge from outside is as important as create knowledge internally. For this, successful companies even cooperate with competitors, seek knowledge complementarities at many fronts: production design, marketing and distribution. The 'Not invented here' mentality is a recipe for killing knowledge creation, innovation and competitive advantage.

This broadly structured framework draws managers' attention onto the core activities that are vital to knowledge-based management. Ideally, the four action areas should be taken as a 'corporate ecosystem' (Leonard-Barton, 1992). Focusing on one single area while ignore or downplay others will not work. Focusing on immediate problem-solving alone would compromise the company's ability to imagine and realize a valued future, whereas frenetic experimentations isolated from solving company's pressing problems are unlikely sustainable, and combining distributed knowledge both inside and outside organizations for continuous innovation has increasingly become a commonsense. A knowledge-creating company, or a learning organization, cannot be constructed piecemeal. Knowledge-based management success depends on the intense interconnectedness and complementarities between efforts in all the action areas. It is the constant managerial attention on, and skilful coordination of, all the activities, not just doing one or two activities well, which enables companies to achieve excellence. This is why successful companies do not mind opening themselves up to visitors, even to rivals – the whole knowledge-based management ecosystem is difficult to imitate. Visitors may take away this or that component but that will not work for them. This happened in TQM then, it is also true to knowledge management now. The up-shot of all this is that, for effective knowledge-based management, managers need to construct a holistic action framework for promoting and coordinating their knowledge-promoting efforts. For this purpose the action framework we present here is a good starting point.

A content scope and an action framework together constitute an organisation's knowledge vision about what are important and what to do in knowledge-based management. Based on research findings upon business practice, this chapter suggests that a holistic knowledge scope that embraces knowledge assets, knowing processes and knower relations, and an 'organic' action framework that nurtures a corporate 'action ecosystem', are useful for originations to build their sustainable competitive advantage upon continuous innovation fueled by knowledge creation.

### **FOCUSING ON ORGANISATIONAL MANAGEABLE**

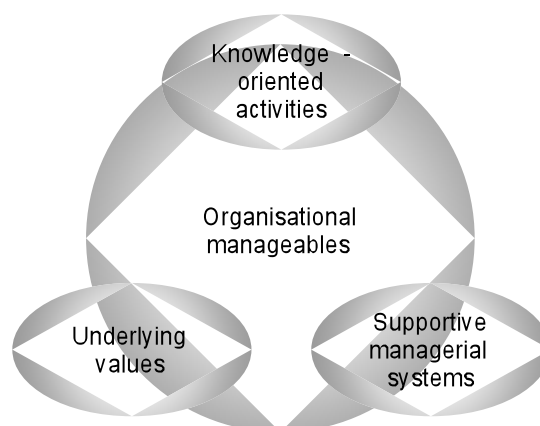
While knowledge visions shape our understanding of what are important and what to do, in this section we move on to explore 'How to do it?'. Since, as we explained earlier, we still lack agreement on what knowledge is and know very little about the exact process through which

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knowledge is created, it is fertile trying to manage the unmanageable, i.e., to manage knowledge or to intervene in the knowledge creation process directly. We have no choice but to focus on managing the manageable.

What are the manageable for promoting knowledge, then? It is useful to consider and structure the manageable based on the knowledge vision introduced in Section 3.2. In each of the four action areas, managers, together with stakeholders, can propose concrete activities. Such activities, intended to promote knowledge creation and innovation, may be suggested based on an organisation's own experiences, brainstorming exercises, benchmarking other organizations, surveying business media and relevant literatures, consulting business leaders and management thinkers, and so on.

Furthermore, it is important to consider, in each of the action areas, what values underlie and promote the intended activities. People do things based on, and motivated by, the meaning they attach to them. They commit only to those activities they valued. And values are not things to hold on, pass around, manufacture or control. Values need to be continuously (re)negotiated, (re)created and shared. All these, for facilitating effective knowledge management, need to be directed and supported by managerial systems such as organizational structure, promotion policies, compensation mechanisms, motivation incentives and resource allocation. Together, knowledge-oriented activities, underlying values and supportive managerial systems constitute a 'triad' of organizational manageable (Figure 4).



**Figure 4.** Triad of organizational manageable (based on Leonard-Barton, 1992)

Combining a holistic knowledge vision and the triad of organizational manageable into a managerial platform, like a balanced scorecard (Kaplan and Norton, 2005), would enable stakeholders to, in a systemic and informed manner, propose, discuss, justify, promote, evaluate and coordinate knowledge management efforts, which should not be a one-shot exercise of box-filling, but need to be continuously tested, reflected upon and reworked (Table 1).

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**Table 1.** Combining knowledge vision with manageable triad into knowledge-promoting managerial platform

<i>Manageable triad</i> Knowledge vision	<i>Knowledge-oriented activities</i>	<i>Underlying values</i>	<i>Supportive managerial systems</i>
Situated problem-solving			
Continuous experimentation			
Integrating internal knowledge			
Incorporating external knowledge			

The following illustrates some reported practices in the business media and research literature which are said to be useful for effective knowledge management. This should be taken as merely a very brief indication showing possible directions for managers to start their learning-by-doing processes, not meant to be exhaustive or conclusive, let alone ‘must do’ principles.

### ***Situated problem-solving***

*Activities:* Establishing problem ownership, job design for on-the-spot problem-solving, on-the-spot R&D

*Values:* Respect for each person, egalitarianism, ‘It is good to make-do.’

*Systems:* Performance rewards, dissolving R&D boundaries, internal market-chain

### ***Continuous experimentation***

*Activities:* Challenging conventional wisdom, ‘asking *why* five times’, *kaizen* programs, ‘even if it isn’t broken, fix it’, ‘eliminating 20% current product offering every year’

*Values:* Disciplined risk taking, tolerance to failure, ‘It is shame not to innovate.’

*Systems:* ‘Fast mistakes’ award, ‘devil’s advocates’, dedicated time and resource for personal ‘pet projects’, hiring enthusiast employees, clear path for career advancement

### ***Integrating internal knowledge***

*Activities:* Open offices, enabling people see each other frequently, encouraging accidental meetings, away-days, knowledge conferences, knowledge surveys, IT infrastructures connecting people together

*Values:* Knowledge sharing, ‘It is wise learning from others.’

*Systems:* Job rotation, cross-function teams, mentoring schemes, formal apprenticeship, corporate education, on-the-job training

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### *Incorporating external knowledge*

- Activities:* Cooperative joint projects, frequent visit to business partners and customers, attending industry wide conferences/workshops, benchmarking competitors
- Values:* Openness, 'Not reinvented here.'
- Systems:* Formal partnerships, 'boundary elements', corporate intelligence and travel budgets

### MAKING IT WORK IN PARTICULAR CONTEXTS

Knowledge scopes, action platforms and manageable triads, even holistic ones, are not ready, one-best-recipes for organization success. Organizations differ. In the real world, no two companies are the same. Homogenous firms as 'production units' in neo-classical economics are merely fictitious creatures for theoretical convenience. Just look at General Motors and Ford, Sony and Fujitsu: even in the same industry and the same country, they vary greatly. Firms have different histories and organizational DNAs, pursue different strategies, possess different knowledge assets, develop different knowing routines, and consist of people with enormously diverse expectations, preferences and relationships. Hence there can be no one-size-fits-all knowledge programs or must-do lists that guarantee good results for all. To complicate matters, environments continuously change and organisations constantly regenerate themselves, for better or worse. Successful formulas even for the same organization quickly become obsolete. Given all this, how can organizations proceed for effective knowledge-based management, and what are knowledge vision and manageable triad good for?

We posit that knowledge-based management is, broadly understood, an inquiry process and that all human inquiries can be seen as underlay by a generic logic. In *How We Think* (1910), the American pragmatist thinker, education reformer and social activist John Dewey presented the generic logic as encompassing five related activities:

1. Making sense of felt difficulties or problematic situations,
2. Defining issues and problems,
3. Hypothesizing (dis)solutions,
4. Developing and justifying the bearings of the suggested solutions,
5. Acting up hypothesized solutions, learning from consequences – and the enquiry continues.

We call this a generic logic because it appears generally applicable to human inquires, or problem-solving, in all organisations in various sectors, industries and situations. In our life experience, we all proceed along this logic, just more or less consciously, reflectively, skillfully. And knowledge visions and manageable triads can be used to inform our judgment, imagination, justification and action along the five logical 'steps' in knowledge management.

In Step 1, for example, managers and workers may find their organisation leaking knowledge to competitors, left behind market demands, facing increased customer complains, witnessing high employee turn-over, and so on. It is useful to make sense of these concerns through the conceptual lenses of a holistic *knowledge scope*: are the difficulties likely associated with the

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organisation's (mis)handling of knowledge assets, ignoring knowing process, and/or deteriorating knower relations? In Step 2, stakeholders use an *action framework* to define issues and problems, mapping them to, and/or derive them from, the four differentiated yet interrelated action areas: solving immediate problems, experimenting for long term success, sharing knowledge throughout the organisation, and incorporating knowledge from beyond organizational boundaries. In Step 3, participants, informed by *manageable triads*, propose and deliberate on possible programs, projects and policies for solving/dissolving the defined issues and problems. As indicated earlier, all these 'steps' can be supported by a wide range of skills, tools and techniques: reflection on organisation's past experiences, benchmarking good performers, using metaphors and analogues, surveying literature and media, brainstorming, etc. In Step 4, the focus is implementation matters: resources and constraints, costs and effects, timing and structure, likely impacts on stakeholders, contingent alternatives, and so on. The following step is to put all the 'talking' into 'walking', constantly observe the process and effects, reflect on experiences, learn from successes and failures, and change programs and policies if necessary for doing better.

During this knowledge-based management process, which is broadly underlay by the generic inquiry logic as depicted by John Dewey, it is imperative to note the following.

Firstly, it should be a pragmatic, flexible, spiral process. Participants may spend longer time and more energy in some 'steps' while shorter and less in others; the 'boundaries' between 'steps' are subjective and naturally fuzzy; participants may move contingently between 'steps' of the process or toward the next round of the experimental spiral; the 'steps' may be taken as fairly formal, or very informal – we are engaging in process full of uncertainty, not following fixed procedures regardless; we act upon the logic for achieving valued outcomes, not for performing the steps *per se*. What works, just do it. The 'correct' way(s) we act upon the generic inquiry logic all depends on circumstances, on situated particulars. One-best-way of doing things, including doing knowledge management, is illusive forever. Our judgment, justification, skill and creativity make the differences. Always look at the real process, happenings and outcomes; embrace surprises and exploit accidents; learn, improve and change accordingly, quickly.

Second, creativity and innovation is the key for effective knowledge-based management. Me-too strategy or seeking universal, context-free programs is a dead end. With imitating 'best practice' alone, the best we can achieve is catching-up. Following others, however excellent they are, will never make you a winner. It is hopeless and self-contradictory trying to copy 'best practice' for knowledge creation and innovation. You cannot promote innovation without your own innovative means; knowledge creation can be enhanced only through creative managerial undertakings. Benchmarking is not for 'becoming the same', but for differentiation, for doing different things and doing things differently. This is why in promoting knowledge management, in presenting John Dewey's generic inquiry logic, we insistently avoid the temptation of supplying readers with ready, prescriptive, detailed must-do lists. Rather, we post a fundamental challenge to managers: while there is great value in understanding and appreciating others' successes, in the end you must learn your own way for workable and beneficial knowledge-based management - workable and beneficial for *your* organisation. There is no better way than experimental learning by doing.

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And finally, knowledge-based management, if effective, is a collective enterprise with collective purposes, collective intelligence and collective efforts. We already, throughout this chapter, presented the moral, instrumental and operational cases for interactive participation. Knowledge, in view of action in the world, is our capacity to define and solve problems in specific situations. Technologies and machines may help, but it is fundamentally human-centered, a human thing. Knowledge is not merely about minds, let alone just brains; it is also about hearts. As Nonaka puts it, ‘knowledge needs value judgment to be knowledge’ (Nonaka *et al.* 2008, p. 8). Accordingly, to know is to enlarge our capacity to solve situated problems, to take timely actions, to make valued differences, to make our ideal real. We do not need knowledge with which humans harm each other or exploit Mother Earth efficiently; we want knowledge to envision and realize common goodness, properly, effectively, joyfully. We do not need casino ‘financial innovations’; we want a net-book in every child’s hands, a successful football World Cup in Africa and a greener environment for all. Knowledge management should be a positive, inspiring, enabling, consequential project of enlarging humankind’s potential, as persons as well as communities, in companies, industries, regions and society. Knowledge-based management is a communal undertaking. It cannot be achieved by a chief-knowledge-officer or the chief-executive-officer alone. If it can, we do not need all the managers and workers, organisations can be conveniently downsized to with only the CKO and CEO left. This may sound a straightforward commonsense, the point is to make it work, to translate it into real knowledge management process, in specific organizations, in particular contexts.

### CONCLUSION

This article introduces readers to knowledge-based management. Although we take business organization and corporate strategy as the focal domain for presentation convenience, we consider the ideas in the chapter equally applicable in other sectors, e.g., government bodies, public agencies, research institutes and universities. Leaders, managers and employees in all these various sectors do need to think very hard about how to coordinate their knowledge assets, learning routines and motivation issues, how to promote activities in immediate problem-solving, experimentation for the future, and integrating knowledge both inside and outside their organisations.

The premise of the article is that we do not know for certainty what knowledge is or how to management it directly but we cannot leave the creation and utilization of knowledge to chances given the increasing competition, deepened globalization and fast technology change. To continuously create knowledge and capture value from it for collective purpose, what we can do is approaching ‘knowledge management’ pragmatically, i.e., focusing on handling organizational manageable with underlying values and supporting managerial systems, instead of modeling knowledge (we still have difficulty in agreeing on what knowledge is) or modeling the processes of creating it (we, humbly, know just so little about such processes). In a pragmatist spirit, we introduce a knowledge scope that promotes managing knowledge-embodied assets, enhancing employees’ knowing process and caring for knower relations. To translate knowledge scope into action, managers can organize their knowledge-promoting effort based on the fabric of four interrelated broad action areas: immediate problem-solving, experimenting for the future, integrating internal knowledge and incorporating useful knowledge form outside an organization. In each of the action areas, each organization, a manufacture company or a university laboratory,

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should decide which detailed activities are useful and workable in their particular contexts. A five-step generic inquiry logic revealed by John Dewey is useful for facilitating the whole process of proposing, justifying and acting upon these organization-specific activities. Knowledge-based management is about getting the vision right, focusing on manageable and making it work in specific contexts. It is matters of intelligent making-do, fallible inquiry and consequence-based learning, purposefully, experimentally, creatively, collectively.

‘*Tao* is made on the walking of it’, the Taoist *Zhuangzi* famously said. We wish you make your own way in managing knowledge creatively, effectively, beneficially.

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