

The Thinking Organisation

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"We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers – people able to put together the right information at the right time, think critically about it, and make important choices wisely."

Edward O. Wilson

Abstract

Paper Type	Philosophical discussion
Keywords	Cognition, Thinking, Judgement, Decision making
Purpose	To provide a model of thinking for managers that is readily applicable in their situation and which will foster effective decision making
Design/methodology/approach	This paper examines some of the thinking challenges facing contemporary business leaders and provides a sound philosophical basis for a cognitional theory
Findings	This paper demonstrates that effective execution results from effective thinking, that a learning organisation is result of becoming a thinking organisation, which is collection of thinking people, and that people and organisations benefit from having a common cognitional method which can help overcome embedded mental models
What is original/value of paper	The paper introduces readers to the cognitional model of Bernard Lonergan, shows the application of that model to contemporary business challenges, and provides an easily learned model for thinking that will aid managers at every level and lead to better decisions

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1 Introduction

I have the privilege of working with key leaders in contemporary business and society, helping them resolve difficult problems, clarify meaning and purpose, think through complex strategic challenges, navigate tricky emotional situations. From this viewpoint I observe the workings of the CEO mind in the CEO environment, and note leaders who are constantly striving to understand, to make sense, to figure it out, to have a breakthrough, to be persuasive, creative and innovative. Facing the pressure to run a mental marathon every single day—at a sprinting pace—they usually lack effective thinking time and rarely have an effective thinking model that can be applied in any situation. Many of the business books which line the shelves range across strategy, management and leadership, although few address the question of what thinking is, and offer a simple model that can be readily practiced in the hectic pace at which leaders work. This paper seeks to redress this issue.

1.1 Thinking in organisations – the challenge

The ability to marshal and understand data and form correct judgements is a critical business skill, since these directly influence the decisions taken in the organisation. Many firms focus on action, execution, and getting things done, without paying sufficient attention to the underlying thinking processes. Thinking precedes doing, and excellent thinking contributes to excellent outcomes. On the other hand, poor thinking contributes to poor outcomes.

Some of the myriad examples that I have observed, which may be attributable to poor thinking, include:

- Inappropriate hires and promotions
- Erroneous, and sometimes, foolish investments and resource allocation
- Decisions driven by ego, with little contribution from key members of a team
- Acquisitions that fail to deliver the mooted benefits
- Creation of unintended consequences from ill informed decision making,
- Staff, customers, suppliers and the public treated badly, damaging engagement, productivity, share price and profit
- Destruction of brand equity, corporate profiles and personal reputations
- Money repeatedly wasted on doomed projects, which would have been saved by better planning, with a subsequent faster return on capital
- Sub optimal productivity
- Interpersonal conflict and failed relationships
- Failure to act in a timely manner
- Over reliance on data, leading to decision paralysis and diminished personal initiative

The quality of thinking in organisations sometimes lacks the reflection and rigour required for management in the contemporary environment. Initial impressions become corporate reality without further reflection. People develop fixed views and have little disposition to hearing counter arguments or alternative perspectives. Firms ask for ever more data and analysis, but find no one is able to take responsibility for making a decision. Rear looking data, such as benchmarking and case studies, is used to analyse a path to the future, with often disastrous results. Decisions are made with no real understanding of the underlying thinking. The crush of ambiguity and complexity leads to over-simplification and avoidance of the hard mental work that is required.

The use of a relatively narrow set of terms to talk about knowing—most often confused with sense perception or understanding—and a lack of coherent cognitive theory makes it difficult for leaders to engage with those who assume an air of expertise, or argue a case strongly. The framework proposed in this paper rectifies that need, providing a set of example questions that can be asked in any meeting, of

any advice or report, or of one's own thinking, to arrive at greater insight and better judgement which will facilitate better decisions and actions. It may also put into perspective and provide rationale for some of the logic and processes currently employed by managers.

Two leading contemporary writers—Howard Gardner and Roger Martin—are actively addressing the question of how leaders think in today's enterprise.

With a background in psychology, Gardner suggests we need "five minds" (2006) to succeed in the twenty first century. These include

1. a disciplined mind, which "has mastered at least one way of thinking – a distinctive mode of cognition ... (in order to) succeed at any demanding workplace" (Gardner, 2006);
2. a synthesising mind which "takes information from disparate sources, understands and evaluates that information objectively and puts it together in ways that make sense to the synthesizer and other persons" (Gardner, 2006);
3. a creating mind that "puts forth new ideas, poses unfamiliar questions, conjures up fresh ways of thinking, arrives at unexpected answers" (Gardner, 2006);
4. a respectful mind which "welcomes differences between human individuals and human groups ... and seeks to work effectively with them" (Gardner, 2006), and
5. an ethical mind to "ponder the nature of one's work and the needs and desires of the society in which one lives (Gardner, 2006).

This paper proposes an underlying model which is beneficial for each of these minds, and which will aid the effort to acquire them.

Martin on the other hand starts with leaders facing complex challenges and wanting to understand how they think. He bases his theory of "integrative thinking" (2007) on examples of, and conversations with, successful leaders who demonstrate this type of thinking. He is particularly interested in the mental processes employed by successful leaders, and says integrative thinkers have an ability to comfortably hold opposing ideas in their mind and arrive at new insights or approaches that either allow for both, or create an entirely new solution (2007). Barack Obama shows evidence of this integrative thinking capability in his 2010 State of the Union address when he says "Let's reject the false choice between protecting our people and upholding our values" (Obama, 2010). President Obama "consistently lays out the opposing models, not to set up an either/or choice, but to begin the thinking process toward an integrative solution" (Martin, 2010).

1.2 Thinking in business – a solution

This paper addresses the question of what goes on in the human mind when we are thinking, identifies ways we can improve our individual and organisational thinking, and hence foster a thinking organisation. It is based primarily on the work of Bernard Lonergan, a Canadian philosopher who has been called one of the most influential thinkers of the 20th century (Time Magazine, 1970). Lonergan starts with the thinking person and expounds a dynamic structure of knowing that is common to humanity, irrespective of culture, status, success, or other markers (Lonergan, 1957). Since learning of his work more than 20 years ago I have found his simple model readily applicable to any conversation or decision making process, and usually find it to be of great help to clients.

Lonergan's cognitional theory provides a method for thinking and knowing that can be used in any endeavour and in any discipline. His approach can incorporate Gardner's 5 minds into one thinking model, provide a philosophical foundation to Martin's work, and lay the foundation for becoming a thinking organisation. Whether discussing political, commercial or personal issues, economics, strategy or people, systems thinking or chaos theory, this approach can serve as an effective model for structuring one's thinking, and contribute to generating further insights.

The model explained here can become the grounds for a common approach to thinking at both the individual and organisational level. It offers a consistent way of managing the thinking challenges that confront us: creativity and innovation, clarity of thought for effective decision making, resolution of seemingly intractable problems, enabling of honesty and discovery of truth in leadership conversations, conflict resolution, Although the list is endless the common starting point is inside the human mind, and understanding the way we think. Recognising this, and having a familiar language to talk about thinking, increases the potential for listening and learning from one another, arriving at new solutions, and avoiding dead ends, blind alleys and unnecessary conflict.

Before talking about the model, we must first discuss the process of thinking and identify a common trap people fall into – confusing what one's senses perceive with knowing what actually is.

2 The cognitional myth

One attribute shared by thinking people is the drive to know – a deep seated desire to understand, to make sense of our world, and to find answers to the questions we face (Lonergan, 1957). Archimedes' cry of "Eureka" and subsequent headlong dash through the street when he solved the problem about measuring the gold content in the king's crown is a classic example of the power of this desire. Although we may be disinclined to run naked through the streets after solving a bothersome question, the sense of elation and relief we experience when we 'get it', and solve the problem at hand, may lead us to jump up and down, pump our fist in the air, or rush out to tell our colleagues.

By taking a moment to reflect on those times when we 'got the point', or found a solution to a problem, or worked out which way to proceed, we are able to observe that this understanding is accompanied by a shift in consciousness. This shift is from a state of puzzlement, of frustration, of not 'getting it', to a state of awe, of elation, and of understanding. This is an 'ah-ha' moment. Insight—coming to understand—brings about this shift in our mental and emotional states.

Most of us remember being a novice in a new field listening to an expert explain something. The expert describes, points, expounds about connections between this and that, while we struggle to keep up with what is being said. Two people—the novice and the expert—having quite different experiences, because one understands and the other does not.

Though the act of understanding is central in coming to know, it can easily be neglected. It is much easier to simply 'see what is in front of us', to go along with the current view, to rely only upon what we have been told is happening. A desire to leave things uncomplicated can fall into the confusion of assuming that what is obvious in knowing (ie, looking) is what knowing obviously is. This "cognitional myth" (Ogilvie, 2002) confuses looking with knowing, and is a danger for both thinkers and thinking organisations.

How the myth can operate and mislead is illustrated in the responses to a series of photos that emerged from Abu Ghraib prison in 2004. Most people would readily recall the graphic nature of the photographs, showing what appeared to be guards torturing, abusing and degrading prisoners. "The photographs tell it all" stated Seymour Hersh (Hersh, 2004).

The filmmaker Errol Morris started with a view that it is *not* obvious what the photos depict. Quoting Specialist Megan Ambuhl, one of the guards featured in the photos, Morris observed that photographs don't allow people to see "outside the frame" (Burrell, 2009). With a background as a private investigator, Morris "scrutinises data (and) unravels preconceptions." (Burrell, 2009).

The timelines reconstructed from the digital metadata by the prosecution in the case brought against the soldiers only provides further empirical data. It does not reveal what people were thinking, why they were acting in certain ways, why the photos were taken, what were the proximate events. Empirical data, although appearing to provide compelling visual proof, leaves many questions unanswered. Morris went to work to answer those questions, examining the contents of the photos in great detail, speaking to soldiers, prisoners and relevant policy makers. The outcome of this process is captured in Morris' film, *Standard Operating Procedure* (2008).

Data and fact are two entirely different aspects of knowing. The data contained in the photographs– soldiers, prisoners, prison cells and so forth – is what we observe. The question of fact, of *what* is occurring, arises when we try to organise the data into an intelligible whole, from which we can form an hypothesis, which we then test by asking further relevant questions. When the hypothesis has withstood persistent questioning, and no further questions arise, we have arrived at *fact* and can reasonably agree that “this is so.”

The cognitional myth confuses seeing with knowing. Other people can see the same photograph and arrive at different conclusions. But in the absence of more data we can only hypothesise about the contents, not draw conclusions. The visual alone is not proof.

3 A Cognitional Model

The solution to the cognitional myth is a cognitional model, a “procedure of the human mind ...that is, a basic pattern of operations employed in every cognitional enterprise” (Lonergan, 1972,). These operations “are contained in questions prior to answers ... move us from ignorance to knowledge ... (and) go beyond what we know to seek what we do not know” (Lonergan, 1972).

In order to understand the structure of knowing, we need to ask “what is it that I am doing when I am knowing?” The operations of the mind include “seeing hearing touching tasting smelling inquiring imagining understanding conceiving formulating reflecting marshalling the evidence judging deliberating evaluating deciding speaking writing” (Lonergan 1972). These operations occur on four levels of consciousness (Lonergan, 1972), three of which constitute knowing, and the fourth pertaining to the application of knowledge.

The first dimension of consciousness is that of experience and the empirical. The second dimension is the level of intellect, and the effort to understand experience. “A third dimension of rationality emerges when the content of our acts of understanding is regarded as, of itself, a mere bright idea and we endeavour to settle what really is so” (Lonergan, 1972). A fourth dimension of consciousness “comes to the fore when judgement on the facts is followed by deliberation on what we are to do about them” (Lonergan, 1972).

The following table captures the essence of the structure of knowing as depicted by Lonergan. It summarises the four levels of consciousness, the operations that occur on each level, and the description Lonergan used for the principal occurrence on that level.

	Level of consciousness	Operations	Principal occurrence
1.	empirical	Sense perception	Experiencing
2.	intellectual	Inquiry and understanding	Understanding
3.	rational	Reflection and judgement	Judging

4. responsible Application of knowledge Deciding

This is the cognitional model being presented in this paper, that knowing is not mere looking, but a compound of experiencing, understanding and judging. On this basis, to say one “knows” is to say that all the necessary data has been considered, relevant questions asked, and sound judgement passed on one’s understanding. In the absence of relevant data, or if more questions remain, one does not yet “know” but only supposes or hypothesises.

None of these operations alone constitutes knowing, but all are needed in order to know. The data of sense, or experience, provokes inquiry – not for more data, but in order to make sense, to organise, to understand. Understanding leads to judgement about the veracity of what is understood. Having then made a judgement about what one knows, we seek to apply that knowledge in the decisions that are made.

The type of question being asked helps one to distinguish the level of operation. On the first level one seeks a name or label in the answer. “The second level of questions seeks an explanation; the third level seeks a very short answer—yes or no. The fourth level seeks an answer to the question ‘will I?’” (Little, 2010) resulting in an action. This model is readily applicable to any situation which calls for sound judgement, or where we find ourselves challenged to make sense of disparate data.

3.1 Observing the cognitional model

As a young midshipman on a cargo ship I was assigned to examine the contents of the hold to ensure nothing had come adrift during a particularly fierce storm. The ship had recently left a port rife with rumours about waterfront wars and disappearing bodies. Descending a vertical shaft into inky blackness, surrounded by the groans and shudders of a large ship in a storm, can be an unnerving experience. Vehicles, industrial machinery and various pallets of goods covered the floor of the hold. I quickly checked the bolts and shackles by torchlight to ensure everything remained fast. Curiosity got the better of me as I focused the torch inside the rear of a small truck. Imagine my surprise and horror when I saw the limbs and torso of a body spreadeagled on the floor. The darkness of the hold was transformed into a tomb, as my heart raced and I fled the scene.

The Captain insisted I return with a colleague to confirm my macabre finding. Tentatively we approached the truck, each encouraging the other to go inside and look more closely. Marshalling our combined courage we opened the doors and approached the body. A full body diving wetsuit greeted us, to our great relief, and my chagrin.

In this frightening event, the darkness, limbs and torso compounded rapidly to form a concept in my mind with which I readily agreed: “there is a dead body in the hold.” Only by asking further questions—approaching the ‘body’ and examining it more closely—and modifying my original understanding could a correct judgement be made: “this is not a dead body.” The ‘proof’ was overwhelming at first pass, and my emotional state allowed irrelevant data (darkness and rumours from the last port) to inform my understanding.

We can recognise the cognitional model in this example. Sense experience provided raw material for the intellect, and as a result of active questioning one begins to understand, fulfilling the human drive to know. Insight provides the relationships between the data, enabling us to ‘join the dots’, creating an “intelligible unity” (Ogilvie, 2002). Having had an insight, we then form a concept, a general expression of that insight, setting aside the data which is irrelevant. For example, the fact that the ship’s hold is dark is irrelevant to the questions posed. Having a concept we test the veracity, since there may be still further relevant questions that need to be asked which would render our concept invalid. We endeavour to discover the accuracy of our

understanding. When we have asked all the relevant questions, and formed a correct insight or understanding, we are then able to assent to truth as there is only one answer to the question "Is it so?" and that answer is "yes."

Judgement also relies on insight, grasping the "sufficiency of evidence" (Ogilvie 2002). It is not one's perception of reality, but an assertion of reality. Failure to grasp all the evidence means that one is only guessing, or having grasped the evidence and refused to accept or deny, is demonstrating foolishness, blind-sightedness, or bias. "Ignorance, error, negligence, malice that blocks this dynamic structure is obscurantism in its most radical form" (Lonergan, 1972). If there is insufficient data to form an accurate understanding, then the wise person acknowledges that their judgement is limited, and remains prepared to modify their conclusion as more data comes to hand. The tendency to immediately accept our perception as being truly the case constitutes a failure to ask sufficient questions. And much of that arises because of the mental models we carry around.

4 Personal mental models

One of the biggest challenges for effective thinking is our existing mental models, which remain largely hidden and unarticulated. A mental model is "an ingrained way of thinking" (Senge, 1990), or "an intelligible interlocking set of terms and relations that (we use when) describing reality or forming hypotheses" (Lonergan, 1972). We are inclined to "assume that our models of reality are identical to reality itself" (Martin, 2007), making it difficult to understand and make sense of reality. Familiarity with the cognitional operations detailed in this paper can help identify and grasp mental models that influence our thinking, and provide a framework for sense making.

The presence of mental models creates a tendency to see what serves our purpose, or to interpret data in a way that confirms our prior understanding. Steven Johnson's account of the cholera epidemic in London in 1854, and the struggle between opposing mental models to understand the disease, is a vivid example of this tendency (2006). The accepted scientific explanation for the spread of cholera was known as the miasma theory, which held that cholera was an airborne disease. The observation that the disease appeared to spread rapidly among those living in packed squalid conditions seemed to confirm this view. As long as the miasma theory held, then any cure would focus on improving air quality and circulation.

John Snow, the main protagonist in the story, formed an hypothesis during an earlier outbreak that cholera was waterborne. During the 1854 epidemic he slowly and painstakingly assembled data – testing water from different pumps, discovering the habits of victims from interviews with surviving relatives, mapping the times and locations where people contracted the illness. This data supported his hypothesis, leading to his judgement that cholera was waterborne, and that this outbreak was emanating from one pump in particular. On this basis a decision was made to remove the tap handle and deny access to that pump. The number of cholera cases rapidly declined, but Snow realised this did not prove his theory, as the epidemic may have been near the end of its lifecycle. Johnson's work reads like a detective novel as Snow continued assembling the data required to confirm his hypothesis and the veracity of his judgement.

The authorities agreed that a case of someone in a remote location drinking water delivered from a suspect well would prove the role of water in spreading the disease. When Susannah Eley died in Hampstead, after drinking water brought to her from the Broad Street well some distance away, it seemed Snow had his conclusive proof. Existing mental models, however, blinded the Cholera Commission which used her death to prove their theory of an airborne disease, saying, "the atmosphere must be so poisoned that it has infected the water as well" (Johnson, 2006).

The tendency to become “conceptually mired in the prevailing model” (Johnson, 2006) is not limited to 19th century England, nor just to what serves our purpose. We are also blinded by our field of expertise. Johnson’s story demonstrates so clearly that our view of what is relevant is coloured by our mental models. In the face of Snow’s compelling evidence that cholera was waterborne the General Board of Health, and influential media commentators, refused to be swayed, so firmly were they wedded to the miasma theory. The event offers “a brilliant case study in how dominant intellectual paradigms can make it more difficult for the truth to be established” (Johnson, 2006). It shows the dangers of too readily accepting what is immediately presented and unquestioned as being the true state of affairs.

Operating from our field of expertise explains why the finance director tends to search for and give added weight to financial data, having less understanding of (say) production or supply chain data, while the director of human resources will focus on data relating to people, performance and culture. This also helps account for why specialisation can be an obstacle to being an effective CEO, and why functional or business silos can be an obstacle to organisational growth and performance. Both encourage lenses which unknowingly and unintentionally filter out relevant data. In this situation an authentic leader who is aware of their own mental models and comfortable with their limitations, can bring out the best from a team by inviting and welcoming diverse perspectives, working together to generate new insights. Such a process facilitates new understanding from wider data sets, promotes better judgement, and lays the foundation for a thinking organisation.

5 Thinking in the organisation

In order to generate better results corporations need to adopt and foster a culture of continuous organisational learning (Senge, 1990). But in order to be ‘learning organisations’ they first need to become effective *thinking organisations*. And in order to become a thinking organisation, they need to become an organisation of thinkers, since organisational thinking is a compound of individual thinking.

5.1 Organisational culture

The culture in which we find ourselves, whether a community a nation or a firm, has an equally profound impact on thinking as our mental models. If the environment welcomes open questions, delights in inquiry and fosters conversation, we are much more likely to observe innovation and creativity. An environment which stifles debate and shuts down inquiry will almost certainly make poor decisions and diminish stakeholder engagement. Leaders who persevere with data, encourage discussion and reward ideas will foster greater openness, lift organisational performance and enhance the potential for breakthrough thinking.

5.2 Inquiry as the driving force of innovation

Questions turn raw data into something of value – knowledge, insight and eventually wisdom. Inquiry, via questioning, is like a driveshaft powering our mind to constantly add value to data. We form an image from experiences, form a concept based on understanding, give assent to judgement, and then act on decisions that are made.

Questions provide power to our thinking. Better questions provide more efficient power. A repeated series of ever better questions can foster creativity and innovation, minimise the time for breakthrough thinking and maximise the opportunity to generate competitive advantage. Restricting the questioning process, whether in the laboratory or the management meeting, shuts down the power of the mind and limits insight and innovation.

Clarity about the level of consciousness being employed – empirical, intellectual, rational, responsible—and the relevant operation at that level—sense

perception, inquiry and understanding, reflection and judgement, application of knowledge—drives the process forward. Whether facing Newton's question of why objects fall to earth, or Ray Kroc's question of how to systemise and replicate a fast food restaurant, or an organisational question about creating blue ocean strategy, this simple model allows one to appreciate the relevant operation of our inquiry and the questions best suited to that level.

5.3 Speed of inquiry as competitive advantage

Recognising we will face a challenge in December and finding a solution the following January is only helpful for subsequent occurrences of the same problem. Competitive advantage is a function of being able to turn data into innovation faster than the competition. Solving the dilemma six months sooner both ameliorates the problem and creates advantage. The power of inquiry is only realised when the timeframe to innovation is less than the time required for resolution, and is amplified when it significantly shortens the cycle.

In order to survive—let alone excel or outperform—the speed with which we learn has to exceed the rate of change in our environment (Hames, 2007). Speed of learning refers to the “time taken to optimally engage in the process of transforming information into purposeful change” (Hames, 2007). Using the power of inquiry to push data along the data value chain accelerates learning, innovation, and time to market. Lonergan's model of knowing is a simple framework for driving this inquiry.

5.4 Reverse engineering a decision

Questions can help us to mine data, review decisions, clarify understanding, and test judgements. We can “reverse engineer” (Martin, 2007) a decision by working backwards to review, analyse, and establish what data must exist to support our understanding and subsequent judgement. Lonergan's cognitional model provides a robust approach for reviewing a decision prior to acting, as shown in the following example.

In one of our regular sessions a CEO mentioned the challenge he faced restructuring his Senior Leadership Team (SLT), and wanted to test his thinking prior to taking action. We reverse engineered the proposed decision to identify what assumptions were being made and what data needed to exist, identify any gaps in thinking, and perhaps modify the proposal.

Peter, the CEO, had decided to restructure the SLT by creating a new head of services role and promoting Bob and Ian to the Team.

As we talked through the proposed decision Peter explained the judgements he was making.

- Bob and Ian ran the two biggest divisions of the firm, and had been reporting via a COO who was retiring. Promoting them was the right thing to do since each managed major profit centres for the firm and already contributed at SLT level. Promotion would acknowledge this reality, give added authority to match their responsibilities, and foster better team work and resource allocation.
- Creating a new head of services would foster greater teamwork between divisions. They could liaise directly with Bob and Ian as peers on the SLT.
- Getting the structure set up for future growth was vital at this time.

These judgements were based on his understanding that if Bob and Ian were successful in their new roles it would minimise his own workload and enable him to focus on his key strategic challenges. It would also balance out some of the distorted work allocations. Expectations from head office meant he had to improve efficiencies in the local firm, to prepare for growth.

This understanding arose from a range of data or experiences.

- Peter was constantly distracted by the urgent rather than important

- Bob was overworked and Ian underutilised.
- There was often conflict, confusion, and at times outright competition for resources that existed between divisions.
- The global firm was looking to his division to contribute significantly to the group profit within 5 years and had allocated considerable funds for development of new operations to achieve this goal.

Having reverse engineered Peter's proposed decision it seemed reasonable in the circumstances. But because his focus had been on Bob and Ian, whose divisions would contribute the expected profit, he had failed to ask further relevant questions. One vital question concerned the aspirations and potential of his team and succession planning for his own role. He quickly explained that Bob and Ian were highly competent but had reservations about their potential to succeed him.

Mary had the single most important strategic role in the firm at that time, although was not part of the SLT. She was highly competent, got things done quickly and efficiently, demonstrated considerable potential, and was the leading internal candidate for the CEO role. Since she would play a major role in the success of the group investment Peter wanted Mary to stay focused on the task at hand. He did not remember, until questioned, that 18 months previously she had committed 2 years to the role and was quite clear that she would leave without further opportunity. It rapidly became clear to Peter that acting on his proposed decision would block any potential moves for Mary, in which case she would probably leave in 6 months, putting the entire project at risk, and that he would be without an internal successor.

As we continued to test each component – the data, the understanding, the judgement and subsequent decision – a resolution was achieved when Peter realised he could promote Mary to the SLT as head of services, playing to her aspirations, developing her capability, and positioning her for eventual succession. At the same time he could provide additional support to Mary in her current role, so she could develop her own successor over the next 6 months.

Although this solution may seem self evident to the reader when presented with the story in this way, this approach provided Peter with an innovative solution to his problem, and was a breakthrough in his thinking.

6 Implications for the organisation

The dominant organisational questions seem to revolve around action. Countless books have been written on execution, or getting things done, or doing what matters, arguing that the ability to execute is a source of competitive advantage (Bossidy and Charam, 2002). Execution links a firm's people, strategy and operations (Bossidy and Charam, 2002).

As presented in this paper, thinking precedes doing, and poor thinking contributes to poor outcomes. Hence the way we think at work is crucial to success. While many firms may focus on execution, few take the time to ask the better question—"How should we think?"—in order to link thinking to execution.

6.1 Learning to think

Discovering the 'facts' about an event is just as important, and just as difficult, in business as it is in photographs – and perhaps more so. It is hard for management to obtain objective information or solid data that has not been coloured by bias, or filtered by fear. Vested interest is a powerful determinant of action. Failure to speak out and give one's perspective – particularly when it deviates from the strongly held views of others – is endemic, to the detriment of productivity and profit (Kakabadse, 2009).

Lonergan's cognitional model provides a way to critique our thinking, and the thinking of others. When presented with a report, analysis, or decision, we can use this approach to ask questions like:

- Is this actually raw data, with no real analysis?
- Does the writer confuse looking with knowing?
- Is there sufficient data for reaching a proper understanding?
- Is the writer merely presenting data and implying that is truth?
- Has the writer presumed their understanding will be borne out by the data?
- Have they asked all the relevant questions and tested their understanding with the reflective question "Is it so?"
- Is their assent to the question expressed with confidence, or do they demonstrate lingering doubt, implying yet more questions exist?

The reader will do well to examine the language used. Does the writer distinguish the different operations of experience, understanding, judging and deciding, and recognise that all are required for knowing?

6.2 Learning from thinking

Critical incidents reveal much about our thinking patterns (Martin, 2007). As global citizens we witness history unfolding in the consequences of significant decisions – the bailout of banks during the financial crisis, military action in Iraq, Copenhagen climate action, ... Corporate leaders are party to decisions about mergers and acquisitions, redundancies, offshoring and outsourcing, environmental and social impact, growth and profit targets, and people policies.

With the passage of time we are able to see the outcomes of those decisions with greater clarity. But in order to both understand the decisions that were made, and to make better quality decisions in the future, we need to unpack the original thinking process, not just review the outcomes. In order to learn from our past decisions we must document not only the decision but the underlying judgement, understanding and data, including specific expectations regarding outcomes.

- What is the key question we are asking?
- What is our aim in this inquiry?
- What is the data upon which we base our understanding?
- What data did we discard, or were unable to obtain?
- Was any data excluded, either through ignorance, prejudice, bias, malice?
- Did we acknowledge shortcomings in the data and seek to address those limitations, either at the time, or in the future to modify our decisions?
- Did we take sufficient time—as the circumstances allowed—to examine and understand the data?
- Did we allow those with different views and perspectives to challenge our understanding?
- Did we listen to all points of view, not just those which buttressed our position?
- What is the understanding we have arrived at?
- What is the concept we have formed?
- Based on the judgement we have made (about the correctness of our concept) what decision/s did we take?
- What specific outcomes, and in what timeframes, do we expect from the decision/s?
- What outcomes actually occurred, and in what timeframe?
- How does this contribute further data and hence modify our understanding?

The human tendency, having arrived at an outcome, is to revise—whether knowingly or unknowingly—one's original thinking and justify the outcome. This happens because we have not written down, at the time of taking the decision, the outcome we expected. Only by carefully documenting our thought process can we

learn from experience, recognise our blind spots and biases, our haste or our caution. This is a crucial practice for individuals, teams, and enterprises.

7 Conclusion

As human beings we ask many questions and derive great satisfaction from discovering the answers. We are united by the questions we ask, but divided by the answers—and usually because we have not fully understood the other person or people. The climate change debate is a classic example of this problem. We are united by the questions, and the desire to find answers. This paper suggests we are divided by the answers because we have failed to identify a common cognitional approach. Would a more robust approach to the data about weapons of mass destruction, interpreting and understanding that data, and judging the accuracy of understanding after ensuring all relevant questions were asked, have avoided the ensuing conflict, destabilisation, and human suffering?

Complexity shows no sign of abating. Ambiguity and paradox are on the increase. Poor decisions are amplified quickly through global systems. Society and our planet have little tolerance for getting it wrong. If ever there was a time to improve our thinking then this is it.

The influence of the cognitional myth—that to know anything one only needs to look at it—cannot be underestimated. Few people or organisations take the time in this fast paced world to ask sufficient questions of the data, to come to an insight about that data, and then to question that insight for verification.

Although time always seems in short supply, taking the time to ask all the relevant questions, and documenting our decision making processes, can only prove beneficial in the long run. And actively reviewing those processes is a key to learning about thinking, improving our thinking, and becoming a thinking organisation.

In order to be effective learning organisations, we need to firstly become thinking organisations. We become thinking organisations by becoming an organisation of thinkers. We become thinkers by understanding the operations of the human mind, and applying a rigorous thinking process to all that we do. Better thinking can only lead to better outcomes as we wade through the challenges confronting our organisations and our world.

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