Breaking down Uncertainty

Every organisation exists to achieve predetermined objectives. Some objectives can be achieved simply by having effective systems, good people, processes and procedures. However for many organisations, 'business as usual' is not an option. Some organisations must change to survive, they must deal with uncertainty and they must take risks. Tony Harb and Mitchell Morley from InConsult look at the dynamics of uncertainty and how leaders can better understand uncertainty to make better decisions and better manage risk.

What is uncertainty?

Everyone remembers the famous quote by former United States Secretary of Defence Donald Rumsfeld when asked about terrorism and weapons of mass destruction "There are things we know that we know. There are known unknowns. That is to say there are things that we now know we don't know. But there are also unknown unknowns. There are things we do not know we don't know", said Rumsfeld.

Essentially, Rumsfeld was describing the various degrees of uncertainty and linking uncertainty to the level of information or intelligence he had at the time.

The body of knowledge around uncertainty is still developing…a work in progress. There are a number of matrices that have been developed to assess and analyse the level of uncertainty.

We believe that the two key elements driving uncertainty are (1) the confidence of knowledge and (2) the predictability of future events.

Attempting to simplify concepts that are inherently complex is fraught with danger. However, anything organisations can use to better understand and manage uncertainty will be a valuable tool in helping to achieve objectives!

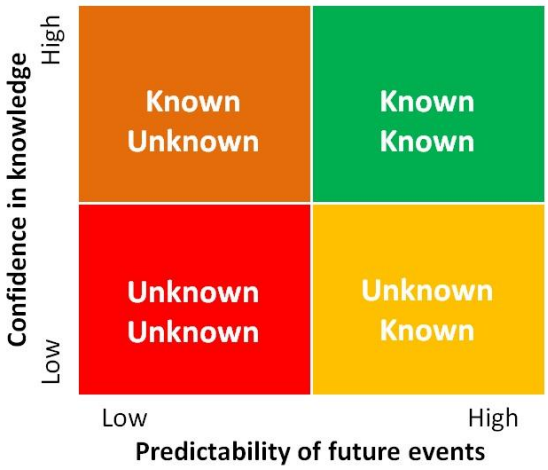

Figure 1: Uncertainty Matrix

Let's look at the 2 elements in the Uncertainty Matrix a little closer.

Confidence in Knowledge

The first element of the Uncertainty Matrix relates to knowledge. At this point it is critical to distinguish between information and knowledge.

Within every organisation, there are literally thousands of bits and pieces of information. Information consists of facts and data organized to describe a particular situation or condition. Information is "raw", i.e. data that is not utilised or acted upon.

Knowledge builds on information, it is information acted upon cognitively. It is information that has been transformed, analysed and can be applied. It includes facts, truths, beliefs, perspectives, concepts, judgments, expectations, methodologies and know-how. Knowledge is gathered and

integrated and held over time to handle specific situations and challenges.

Knowledge can be used to improve customer experience, refine products and services, enhance service delivery, improve financial performance, improve business processes, develop strategy, etc. Basically, knowledge is applied to interpret information about the situation or problem or opportunity and to decide how to handle it.

Our confidence in knowledge is driven by many factors.

- Quality, accuracy, relevance and timeliness of data or information you have;
- Quality of the analysis you can undertake;
- Quality of the people involved in gathering and analysing the situation;
- Level of expert consensus and aggregated beliefs;
- Quality of decision rules;
- Prior experiences that help you understand the situation.

Knowledge and a little wisdom are critical to managing risk and dealing with uncertainty.

Predictability of Future Events

It is impossible to predict the future with 100% certainty.

As humans, we all like to be as much as possible, 'in control' of our destiny e.g. our career, our personal life, our finances etc.

So, some future events we can predict with a degree of certainty whilst others we cannot.

In business, our organisations and departments set goals. Along the way, the organisation will hit barriers, obstacles and face challenges. Some of these obstacles can be foreseen and we can prepare for them, others are either unpredictable or uncontrollable.

The predictability of a future event is driven by many factors.

- The specific nature of the organisation's objectives and the future event;
- Level of complexity;
- Scale of activities and tasks involved;
- The number and type of resources deployed;
- Rate of change in the external environment;
- Level of controllability of the future event;
- Time factors and time constraints.

Bringing it together

Now that we understand the two dimensions of the Uncertainty Matrix, let's look at the four groups in the matrix and how can we apply them to risk management?

Known Known – This is as about as close to certainty as you can get. In this area, we can be fairly certain about an event or achieving an opportunity/objective because we have a lot of knowledge and confidence in our knowledge, and our ability to predict is high. We can usually anticipate and control these types of events through standard operating procedures and protocols.

We know that summers are hot and sunny in most parts of Australia. We know that prolonged exposure to the sun can cause skin cancer. We also know that skin cancer can be fatal. Thus, for outdoor workers, the risk of skin cancer is a "known known". It is an inherent and potentially extreme operational risk for people working outdoors. We also know it can be controlled effectively through preventative and corrective measures like hats, protective clothing, sun screen, regular check-ups etc.

Known Unknown – Here we have a lot of good quality information and knowledge, but our ability to control or influence the event is low. No amount of analysis or knowledge gained can help so in this case, we may have to rethink our objectives or build in a high degree of monitoring and flexibility to enable us to respond appropriately if and when such events occur.

If we work in a building that is located in a flood plain, we know that there is a risk of flooding. However, we can't be sure when flooding will occur nor how severe it will be. The risk of flooding is more of a "known unknown". We know it could happen but not when and how bad it will be. It could be argued that flooding risk is increasingly becoming more of a "known known" as more and more data and sophisticated modelling becomes available. In many cases we now have sufficient knowledge to predict the frequency of floods and their levels of severity.

Unknown Known – In this area, we have a limited amount of knowledge about the causes or reasons for an event occurring but we can predict with some degree of certainty that it will happen and we know what the impact is likely to be. An example is when we know there is a regulatory change in progress that will affect our operations or strategy, but lack sufficient information about the details and potential impact. It will take time and resourcefulness to obtain knowledge.

Unknown Unknown – Here we have little knowledge and our ability to predict the future is low. We are limited in our ability to control or influence the event outcome and limited in our ability to analyse any data as information is limited or non-existent. For example Rumsfeld claimed he had no or little intelligence re terrorism and weapons of mass destruction (even with all the brainstorming, visioning, war games, scenario modelling etc), he claimed the real situation was worse than the facts showed even after many years of intelligence gathering. Rumsfeld effectively acknowledged the lack of predictability of terrorists.

If we think about climate change and global warming generally, the risks posed by these phenomenon have to date been largely "unknown unknowns". Until recently here hasn't been any conclusive and universally accepted data to prove that climate change is occurring and that it will result in long term impacts on the environment which will pose significant risks to organisations (some would argue there is still no such evidence!). Even with currently available data there is still a high level of uncertainty about the causes and likely impacts of climate change. As our knowledge in this area grows and as we continue to observe the effects over time, the level of uncertainty will reduce and climate change risks will most likely become "known unknowns" and perhaps ultimately "known knowns".

What does all of this mean for people and organisations? In our view it highlights the importance of thinking about risk and uncertainty at various levels. We need to think about the routine operational risks or the "known knowns" and make sure we have appropriate controls in place to minimise their likelihood and/or impact. But we also need to think about and consider those risks about which we may not have high levels of knowledge nor be able to predict with any degree of certainty. Whilst we may not be able to control these risks we can, and should, monitor them and make allowances for them in our planning and thinking. Thinking and acting now will make us better prepared for the future. Isn't this what risk management, or managing uncertainty, is all about? Of course the challenge is to ensure that our actions are proportional to realistic estimates of the

level of risk – remember the hysteria and over reaction around Y2K. But get the balance right, and our organisations will be more flexible, better prepared and more resilient for whatever uncertainty the future has in store.

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