

Taking strategic decisions in the face of “unknown unknowns”

“There are known knowns. These 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. These are things we do not know we don’t know.”

United States Secretary of Defence Donald Rumsfeld

An article written with the purpose of assisting individuals and organisations to take better strategic decisions and create more robust strategies in the face of great uncertainty.

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July 2010



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1. Introduction

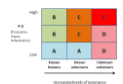
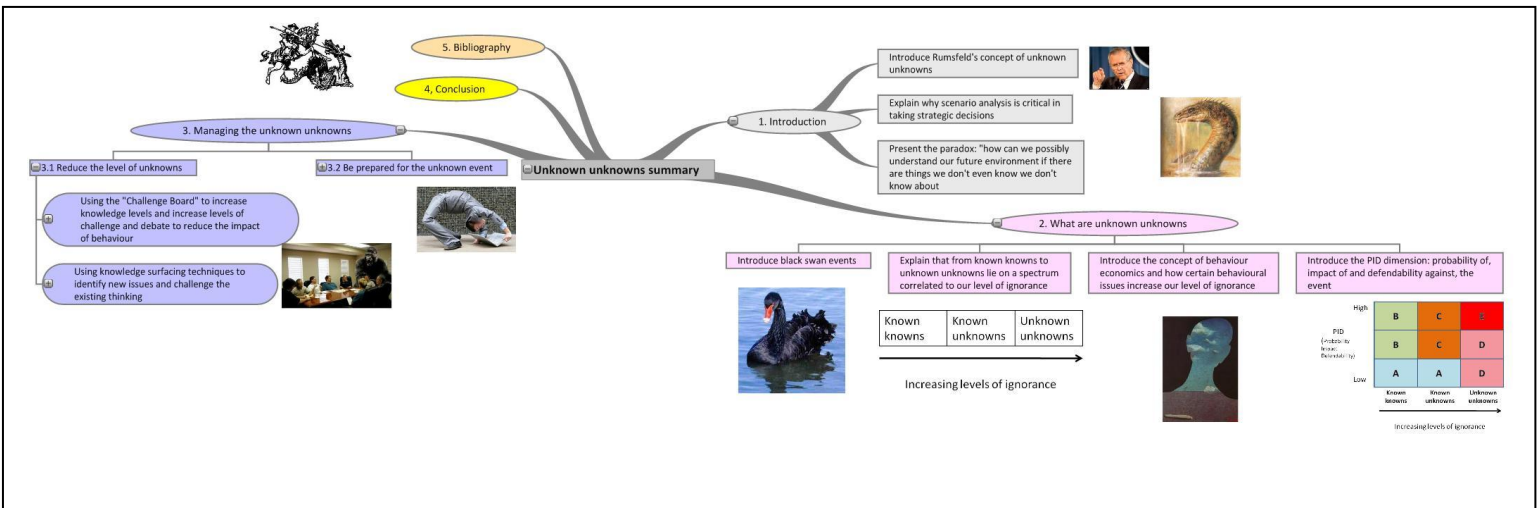
Here we introduce the challenge presented by ‘unknown unknowns’ when developing strategy or taking strategic decisions.
2. What are ‘unknown unknowns’

In this section we discuss what are ‘unknown unknowns’ and introduce the PID matrix as a construct to address the issue
3. Managing the ‘unknown unknowns’

In the third part we consider two complementary approaches to manage the issue:

 - a. Reducing the levels of the unknowns through the use of a **Challenge Board** and utilising **knowledge surfacing** techniques
 - b. Preparing for unknown events through increasing organisational flexibility
4. The conclusion summarises the article.
5. The bibliography lists sources and useful references for further reading.

I hope that the mind map below will assist you in following the theme of the article and may be retained as a useful summary reminder for the key findings.



Taking strategic decisions in the face of “unknown unknowns”

1. Introduction

“There are known knowns. These 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. These are things we do not know we don’t know.”

United States Secretary of Defence Donald Rumsfeld



Here, Rumsfeld was referring to combating the threat of terrorism; but the challenge posed by the phrase ‘unknown unknowns’ is equally appropriate when we are crafting business strategy.

There has been significant work around ‘unknown unknowns’ (refer the bibliography for details). Some of it takes a philosophical, psychological or mathematical perspective. Other work touches on the business and organisational aspects; but there has been limited commentary on how to deal with the issue in the real world. This article has been written to offer practical help to organisations taking strategic decisions and developing strategy in the face of this challenge.



Here be dragons is a phrase used to denote dangerous or unexplored territories

Strategic decisions: in this context, these are classified as decisions that:

- Could have a fundamental and significant impact on the organisation making that decision
- Are made in an environment of uncertainty, where the scenario within which the decision will be enacted is unclear or variable
- Are made where all the required facts of the situation are not available or at least are open to interpretation

Most critical decisions taken today are implemented in the medium to long term future – and so the environment in which the decision is implemented and played out, is usually quite different to the one in which the decision is made.

Since any strategic decision should be taken considering the possible nature of that future environment, there is an important need for some form of scenario analysis in the decision-making process.

This has long been recognised and many organisations undertake some form of scenario analysis in their strategic planning and decision-making activities. For example, Royal Dutch Shell, who spearheaded scenario planning for business, was able to predict the 1973 oil crisis.

When we add the need for predicting possible futures to the challenge of our ‘unknown unknowns’, we realise the paradox with which we are faced:

“How can we possibly understand our future environment if there are things we don’t even know we don’t know about?”

This article addresses this issue and offers practical advice for reducing the uncertainty of these ‘unknowns’; and ways to prepare for the inevitable unexpected events (both opportunities and threats) that will occur at some stage in the life of your organisation.

Scenario planning at Genesis

Genesis Management Consulting uses a classic scenario analysis approach, but enhanced through the use of software tools, creativity devices and assertive challenge to reduce the impact of behavioural issues and heuristics (rules-of-thumb).

The basic steps we use are:

1. Carefully frame the decision to be made.
2. Identify the driving forces that could impact the outcome
3. Establish what is known and can be pre-determined.
4. Identify the key uncertainties and the range of uncertainty
5. Introduce a Challenge Board (see body of article)
6. Prioritise the issues based on the level of uncertainty and potential impact
7. Develop alternatives for each option and map the broad range of possibilities
8. Select a finite number of scenarios (incorporating worst case and best case)
9. Using “adopt-a-world” techniques, develop narrated pictures of those possible future worlds
10. On an ongoing basis, review, refine and update the scenarios

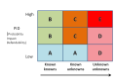
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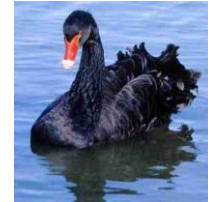
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2. What are the unknown unknowns

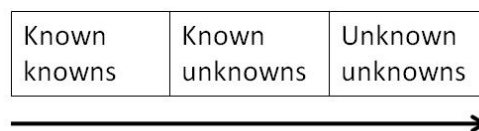
Let's unpack this phrase and consider why these 'unknowns' exist. Individuals, organisations and countries often face unexpected events such as the sub-prime crisis, the dot com bubble, digitalisation of the music industry, Icelandic volcanoes..... to name but a few. Taleb has used the term **black swan** to describe an unexpected occurrence which satisfies the following three criteria:

1. The event is an outlier and impossible to predict on the basis of historical trends
2. It has extreme impact
3. After the fact, the event is rationalised by hindsight, as if it had been expected.



What in fact are 'unknown unknowns'?

The suggestion is that in moving from 'known knowns' to 'unknown unknowns' may best be viewed as a spectrum that correlates to our level of ignorance (where we use the term ignorance to mean 'uninformed' rather than the colloquial and pejorative term 'stupid'.)

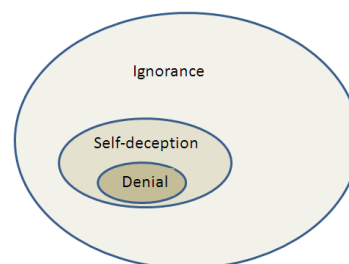


Increasing levels of ignorance

Another dimension of this 'ignorance' relates to the impact of our subconscious on our 'knowns' and 'unknowns'. In other words, there may be things that we know (or should realise) but for some reason we subconsciously decide 'not to know'.

An example: a poor decision may be made due to self-deception or denial – such as where a sales executive wishes to believe that a long-term declining sales trend has turned, based on having recently received (only) one good order.

David Dunning, the Professor of Psychology at Cornell University, illustrates this point in this conceptual diagram.



So, returning to the spectrum above, what is it that makes an 'unknown' unknown? There are three possibilities:

- We do not have the information that could make it a known and never will
- We do not have the information available that could make it a known, but could have if we sought it out.
- We have the information available but we choose to ignore it, as with the example of the sales executive; or simply decide not to apply it, for instance, by not undertaking any scenario analysis and assuming a future the same as the present.



The latter is more common than we would like to think. Although many companies scan the future when considering strategy, even the best do not always take cognisance of received information.

Behavioural characteristics play a role in this.

Behavioural economics expert Daniel Kahneman maintains that, although we tend to consider ourselves to be rational beings, there are a significant number of times where we are blind-sided by psychological forces and act irrationally. It becomes critical to understand both these forces and the heuristics that people tend to use when making decisions. (See related sidebar for examples of behavioural economics)



Examples of how **behavioural economics** can distort our thinking and convert 'knowns' to 'unknowns'.

In a group situation, we tend to spend more time talking about ideas in which we all commonly believe, rather than about issues where the majority of the group have limited knowledge, or where there are conflicting views.

Loss aversion and **commitment** can combine to keep us investing long after it makes financial sense to withdraw resources and cancel a project.

Diagnosis bias is also common, where we may become blind to evidence that contradicts our initial assessment of a situation - and seldom do we go searching for it!

Although the concept has already been moved a little beyond some of the theoretical work on the subject, before we consider how to address the issue, we must examine another dimension. That is, even if we are able to predict an “unknown unknown”, there are three other questions that must be asked:

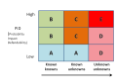
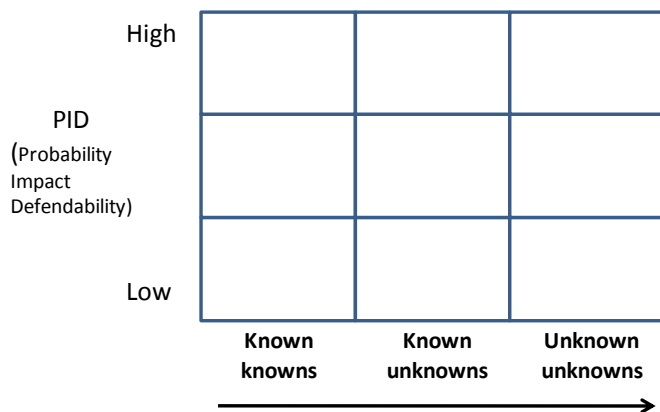
1. What is the probability of the event?
 - Should it be exceedingly small, how much resources should be expended to addressing it?
A trivial example would be the chance of a small meteorite destroying our head office.
2. What might be the impact on our business?
 - If the impact appears small, should we worry about it?
For instance, global warming and increasing water levels are serious and may be a threat to many organisations, but will it have a major impact on the decision of, say, Microsoft buying Cisco (a fictitious example!)?
3. Can we do anything about it?
 - It might be that something will have an impact on our business but we can do nothing about it. This is seldom the case as one can normally insure or buy some type of option to cover it – but there will be circumstances where it is decided to just “hope” it won’t happen. For instance, perhaps a giant leap in technology making our best product obsolete.

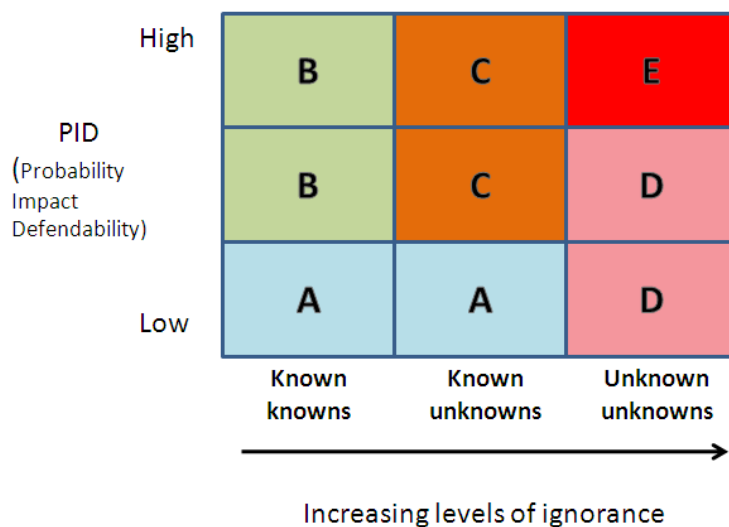
If we fuse these three dimensions, a new conceptual metric may be developed - PID axis (a function of probability, impact and defendability).

The greater is the value of the PID, the greater the probability/impact/defendability – and so the more attention we should give that factor.

By combining this PID axis with a ‘known – unknown’ axis, a conceptual matrix is produced that can serve as a structure for conscious consideration as to how to address the issue.

Although we may not know the precise contents of all the cells, we should start to realise the level of their significance in our planning process.





The two **blue** cells (A) indicate areas that of low concern. These are issues that have a low probability, low potential for serious impact, or are things which we are unable to do much about. Even if it is a 'known known', spending too much time discussing it may distract from more critical issues.

The two **green** cells (B) represent issues that we know about and are potentially important. These should already be part of our scenario analysis.

The adjacent **orange** cells (C) may house critical issues that are not yet being considered. In many instances, these are issues that may be being ignored due to some of the behavioural challenges mentioned above. They should certainly at least be under consideration for input to the scenarios. A little later it is discussed how this may be approached.

The **pink** cells (D) are potentially important, but given that we are largely ignorant of them and they have a lower PID score, our advice would be to 'ignore for now as, given limited resources, we are probably able to use our time more wisely concentrating on other areas.

The **red** cell (E) is where the **black swan** events lie. Although impossible, by definition, to predict, there will also be issues in this cell that potentially could be known by tapping into deeper intelligence pools.

3. Managing the unknowns

There are two broad approaches we can use to help us reduce the risk of being blindsided by these unknowns:

1. Reduce the level of unknowns (that is shifting issues to the left on the diagram).
2. Be prepared for unknown issues (that is generic preparation of your organisation to handle critical, but unforeseen events).

3.1 Reducing the level of unknowns

Within this approach, there are two broad thrusts to this:

1. Add a step to the scenario analysis process – the ‘Challenge Board’ and
2. Use ‘knowledge surfacing’ - one or more of a series of methods that can be used to surface unknowns.



We will discuss each in turn

3.1.1 Reducing the level of unknowns: the Challenge Board.

After initial identification of the drivers of our strategy, there remain two questions:

- What have we missed out that we know about and that is important (medium or high PID)?
- What are the ‘unknown unknowns’ that might impact on our achieving our objectives?

But if we missed the issues before, how, by simply asking those questions, do we identify them now?

The answer is through increasing our knowledge pool and introducing more challenge - what we call at Genesis a **Challenge Board**.

How this works is we introduce to our forum a new group of people who are able to provide this knowledge and increase the levels of debate.

Obviously, we do not wish to duplicate the skills and experience of those we already have in the team and so we should seek members with this in mind, from both inside and outside the organisation. (See suggestions below)

The recommended approach is:

1. Give the Challenge Board a brief context, and then encourage them to brainstorm drivers that could impact on the outcome of your decision or strategy. Have them also rate probability and potential impact.
2. Compare this list of drivers to the original list developed by your team and highlight differences.
3. This process should include challenging the original list and probing for underlying assumptions.
4. Almost certainly, the debate and the discussion will result in a refined and improved list of drivers.

Board Challenge: *inside* your organisation, seek out:

- People with 20 years or more experience in the industry/sector – there is a good chance they will have lived through a number of business cycles and challenges.
- People with less than 1 year in the sector – but preferably experience in other industries. They bring an outside perspective untainted by industry mental models.
- People from functions not represented within your existing team. For instance a quality controller or plant engineer may well bring an alternative viewpoint and look at a situation in a different from to your management team.
- Individuals who are always challenging the status quo within your company (and you will have them). They are often people who can identify weaknesses and are not afraid to put them forward.



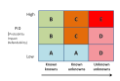
Board challenge: to find 'paradigm-shakers' *outside* the organisation, there are many possibilities:

- Industry experts (perhaps a consultant or University professor)
- Industry observers (such as an investment analyst or a newspaper columnist who writes about the industry)
- People from adjacent industries (upstream or downstream)
- Customers and distributors
- Wild cards - people outside the business discipline – for instance, a professional musician or a school teacher.



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3.1.2 Reducing the level of the unknowns: knowledge surfacing

Below are a list of tactics that have been proven in practice to enrich the process and surface issues, thoughts, perceptions and ideas.

Knowledge surfacing techniques:

Using a **“pre mortem”** (as described by cognitive scientist Gary Klein).

Make the statement:

“It is 2 years on (or whatever is appropriate time-frame) and the decision turned out to be spectacularly wrong.....”

Then ask individuals to write a short story completing the statement, being as radical as they like. After the exercise, debrief to see what new issues have been uncovered.

This is a great way to surface negatives, encourage positive criticism and allow team members to play the role of ‘devil’s advocate’ in a risk-free environment.

Knowledge surfacing techniques:

The advantages of using a **skilled facilitator:**

Will be able to re-raise comments that are made but ignored -perhaps the person making the comment is not sufficiently forceful or confident; or it may be issues the group is denying.

Will ensure that everybody contributes, and uses tools to capture and acknowledge all comments.

Will control unhealthy group dynamics such as anchoring, value attribution, group dominance by an individual and group conformity

Will allow all team members to actively participate in the debate and discussion, respecting different viewpoints

Knowledge surfacing techniques

Creativity and paradigm shifting

Use **metaphors** and **analogies** to seek out other situations which share some of the characteristics of yours. Explore those cases for any potential new areas of learning or issues handled well.

For instance, ask team members to complete the sentence: “This decision is a little like that of” then explore the answers and their contexts.

Use **creativity techniques** such as visualisation, drawing, acting and model building to move out of the standard conversations and debates.

As examples, the toy company, Lego, has a business division called Lego Serious Play which can be fun to use and insightful. And Dan Roam’s work on the use of simple drawings to address complex problems can also be incredibly powerful.





Knowledge surfacing techniques

Assumption challenge

Unpack the underlying **assumptions** of your drivers, challenge them and investigate alternatives. This process can often uncover potential events not considered previously.

Beware of financial models and their results.

Don't be taken in by the outputs of complex financial models with numbers that look really concrete in black and white supported by flashy charts. Often there are assumptions that underlie the numbers that are quickly forgotten as the model increases in dimensions and complexity. Where appropriate, use distributions as opposed to single numbers to model an input that has a degree of variability.

There are several spreadsheet applications - such as Xlsim - that are easy to use and can offer great insights.

Look out for shared assumptions about competitive activity (existing and new) that may not take account of their reaction to your actions.

The ideas above should go some way to reducing the level of ignorance and so convert certain 'unknowns' into 'knowns'.

Although unlikely that all the 'unknowns' will become 'knowns', an organisation needs to try and prepare itself for handling a crisis when a *black swan* appears. This is covered in the next section.

3.2 Be prepared for the unknown event

For decades, there have been debates about the *death of strategy*, because of increasing levels of uncertainty and the need to create an adaptable organisation.

At Genesis, we do not believe most organisations have (or ever will) reach the situation of not requiring some strategy. But we are in favour of working to make organisations more adaptable and flexible to handle crises and changing environments.

In highly changeable economies, organisations face what is known as the ‘inverse power law’ (borrowed from meteorological science) where the impact of an event is inversely related to its frequency. So for instance, most companies will face a stream of small opportunities, the occasionally larger one and infrequently a massive opportunity.

Given that the ability to capitalise on opportunities is as much about recognition and timing as the opportunity itself, an organisation must be agile enough to react when one appears.

Rosabeth Moss Kanter has a Harvard Business School blog; “Surprise: four strategies for coping with disruptions”. Genesis has formed its own set of ideas by incorporating some of these strategies with our own experience and knowledge. We recommend consideration be given to one the following seven suggestions as to how to make an organisation more flexible, responsive to potential opportunity and resistant to external shock.

1. Do not leave ‘environmental screening’ to an annual strategic planning processes.

The organisation must find ways of early-identification of potential threats or opportunities AND bringing them to the attention of the executive.

A sub-set of this activity is continual revision of developed scenarios.

Issue polling:

At times (of significant change or the lead up to a strategy planning session), we have assisted our client executive in better keeping a “finger on the pulse” of business and potential threats and opportunities by polling the views of management and other staff members on a monthly basis to assess their views of potential opportunities, threats or other critical issues.



2. Recessionary tactics tend to cut business to the bone but it is still important to try and maintain some level of flexibility and retain some 'slack' in the organisation

An extra analyst in the strategy or finance department may well be able to investigate issues as they arise, rather than having them ignored until a crisis develops. Cross-training is also often a useful tactic here.



3. Seek out areas where real options can be identified, for instance where by placing a small 'bet' now, you enable the capturing of huge opportunities should they arise.



For instance, GM, as are other automobile manufacturers, has been investing in fuel cell technology for a large number of years and supplying such to non-automobile markets. This has allowed it to develop electric car technology much earlier than would have been possible without taking this option – in keeping with the market demand after the gasoline crisis.

4. Communication flow is critical and many contemporary media play a role here, such as Twitter, social network sites and the like. The more your employees communicate with each other and discuss activities, trends, challenges, etc, the more adaptive will be your organisation. Learn to use these new technologies in your favour - rather than shutting employees off as a number of companies have.
5. The making of critical decisions is a combination of science, experience and some black art! Development of this skill at all levels of the organisation will assist in speeding up organisational reaction times and, more importantly, improving value creation through better decision outcomes.



6. A second part of the criticality of communication is in spreading the vision and strategy of the organisation as broadly as possible. Provision should be made for an understanding of the rationale behind the strategy to allow for adaptation 'on the fly'. Likewise, a common set of values and guiding principles must be created within the organisation. When decisions have to be made in a hurry, a clear understanding of these values will lead to higher consistency of action and adherence to company direction.



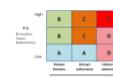
7. Break down dysfunctional barriers that reduce responsiveness and flexibility within organisations: for example, poor communication between sections; lack of employee movement between divisions, and elitist executives who are removed from distributors and customers.



These are some of the key actions that organisations should be implementing to increase responsiveness - beyond obvious enterprise risk management and the disaster recovery systems that most organisations have in place.

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4. Conclusion

In summary, a need for developing a view of potential futures when making a strategic decision has been identified, along with difficulties caused by certain future 'unknowns'. This complicates the task of organisational strategic decision-making.

What is really known versus what is unknown depends upon both our raw knowledge as well as certain behavioural characteristics. These sometimes block us from being conscious of an issue that should be a known.

There are processes and techniques that can be used to reduce the levels of 'unknown', through increasing the body of knowledge available and/or increasing the levels of challenge so as to dislodge some of the behavioural issues causing blockages.

Since it is recognised that we cannot remove all unknowns, organisations must do all they can to become more flexible and adaptable so as to deal more efficiently with potential opportunities and future shocks.

Genesis Management Consulting is a strategy consulting firm dedicated to assisting our clients in taking strategic decisions and solving complex problems in search of achieving our vision of ...

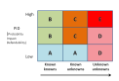
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If you wish to obtain more information about the ways we are able to help you and your organisation, please contact Simon Gifford at one of our contact points.



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