

Cognitive Bias Test

MEASURING HIDDEN THINKING

Report for James Smith, of Example Co Ltd

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Introduction to the Cognitive Bias Test[®]

We all have cognitive biases. They are persistent and systematic corruptions in our thinking – and there are around 150 of them. To make things more complicated, if we are used to working in a team, we typically have two sets of biases – those that drive behaviour when working alone, and another set of biases that manifest themselves when working with the group. These two sets of biases can be very different.

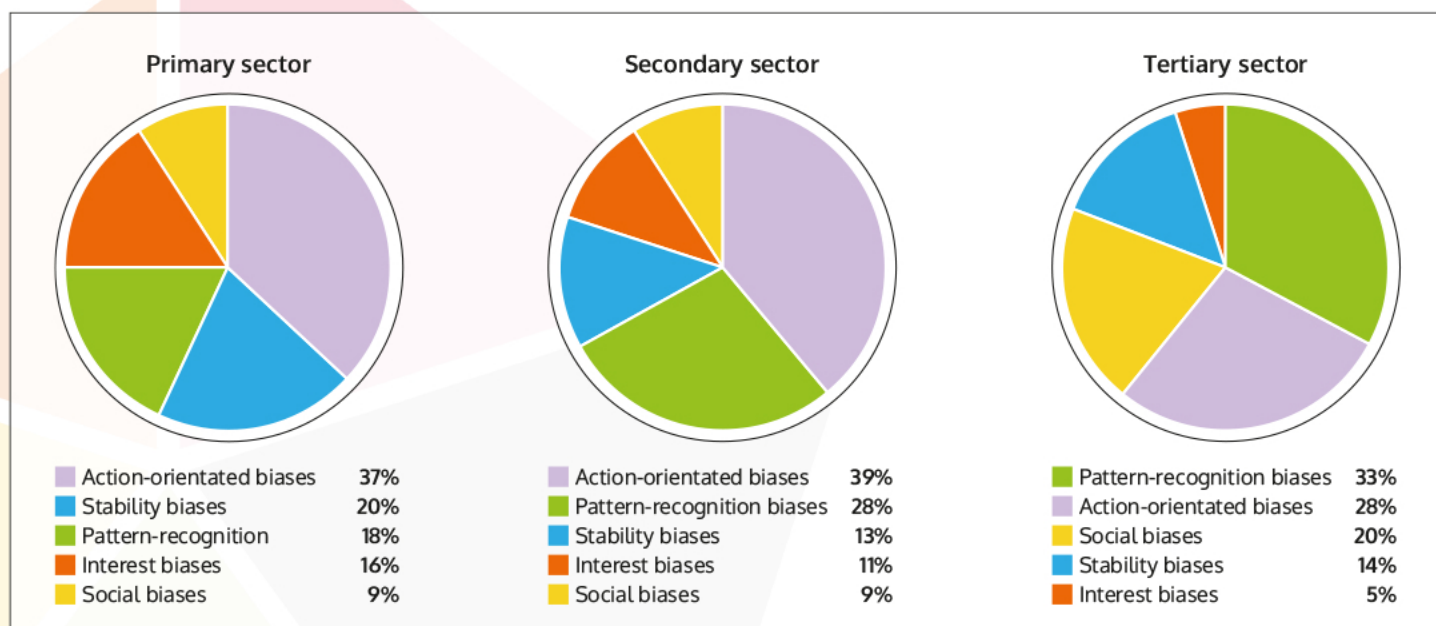
The Cognitive Bias Test (CBT) which you have taken draws on decades of experience in helping bomb-disposal operators to deal with the effects of cognitive biases on their decision-making. This work led to methods of identifying which cognitive biases a team and the leader may have; it also influenced the strategies used when helping senior executives to deal with bias in the business context.

Research by Lovallo and Sibony¹ showed that there were five main areas of cognitive bias with the most impact on business decisions. The Cognitive Bias Test has 60 questions which test for cognitive biases in each of these five business-related areas. One set of these questions tests for your own, internal, cognitive biases. Another set of questions tests your view of the biases of your colleagues on the team – or the external cognitive biases. The latter results are then aggregated with the views of the other team members to produce results for the whole group.

The questions are designed on a true/false basis – intended to force an answer which indicates the likelihood of the bias existing. The questions allow for strong agreement and disagreement to be recorded – and these responses are given additional weighting when the bias is calculated.

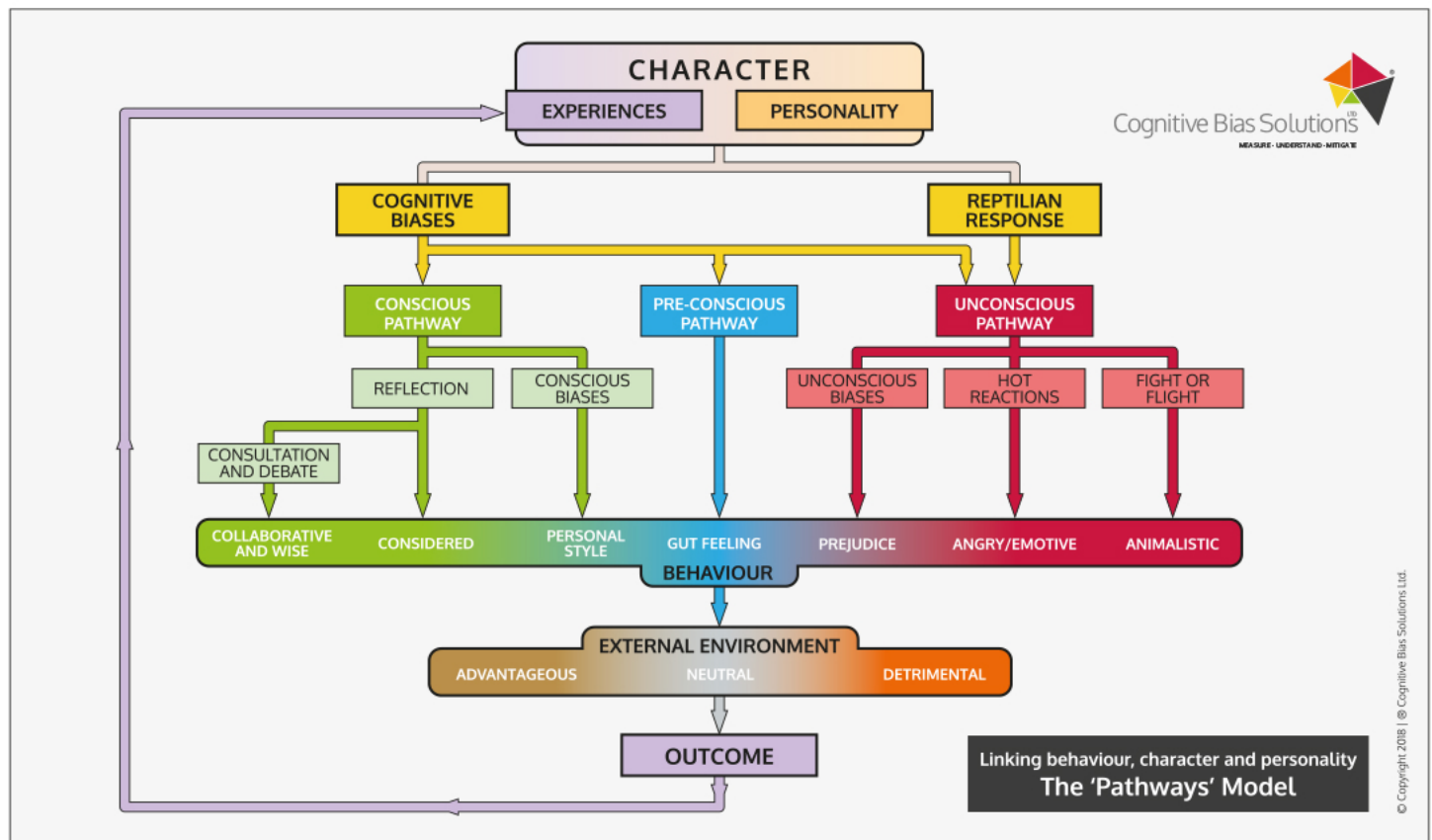
The cognitive biases of the group are calculated as an average of all external bias responses. These data are also used to measure the biases inherent in some individual responses. Your view of each of the group's biases is compared with the average view, with any significant difference between the two indicating an oversensitivity (or undersensitivity) to questions on that particular type of bias. If the discrepancy is statistically significant (i.e. outside of the SD1 range), a weighting is then applied to your individual bias result in that area. In short, the average group result is also used to test for, and reduce the effects of your biases – when answering questions.

Senior leaders in a wide variety of organisations have taken the Cognitive Bias Test. The bulk of these (>90%) has been from large commercial companies, with the remainder from government service. All senior leaders have at least one highest-scoring category of biases, known as their primary biases. These are not distributed evenly among the five categories of bias, and vary according to industry sector. These sectors are the primary sector (acquiring raw materials), the secondary sector (manufacturing and assembly) and the tertiary sector (providing commercial services). Primary biases are distributed among the leaders surveyed as follows:



Further information on cognitive biases and their measurement can be found at: www.CognitiveBiasSolutions.com

Cognitive biases are distinct from unconscious biases. Both are subconscious, but unconscious biases start from quick judgements of people – which can lead to stereotypes being formed. These, in turn, give rise to prejudice. Cognitive biases are persistent corruptions in our thinking which affect almost all of the pathways between personality and behaviour. The pathways model can help to put this into context. Further details of the pathways model can be found at: www.CognitiveBiasSolutions.com/understanding-cognitive-biases



Cognitive biases drive the tendency to acquire and process information through our likes, dislikes and experiences. They are the product of mental shortcuts, or simple rules of thumb, helping us to deal with complexity and ambiguity in a way that is good enough to get us through. As such, they are usually beneficial in 'tactical' leadership situations.

However, they can be a severe hindrance to strategic leadership. Strategic leaders create the conditions for success. They set the direction by changing the organisation's internal culture and systems so that they match the external environment – now and in the future. Strategic leaders then make sense of what is emerging and steer the response. The key competencies of strategic leaders can be found at the back of this report.

Cognitive biases disrupt the three stages of strategic leadership because:

1. they cloud our judgment of both the external environment and the internal culture and systems of the organisation.
2. when making sense of what is emerging, they filter our perceptions, so that some facts can be downplayed or even ignored, while assumptions may be mistaken for facts.
3. when responding to what is emerging, they restrict the range of options considered.

Finally, one warning before you look at the results (overleaf) of your CBT: the test measures cognitive biases, not behaviours. As such, an absence of action-orientated cognitive biases, for example, does not mean that you cannot take action. It means that the data indicate that corruptions in your thinking do not appear in that area – whether you have this bias or not, you will be equally capable of taking action. To take another example, an absence of social biases does not mean that you can or cannot get on with your colleagues – it means that the data indicate that you do not have corruptions in your thinking in that area of cognitive biases.

Cognitive Bias Maps™ for James Smith

All participants took the Cognitive Bias Test. The results are shown in the three colour-coded **Cognitive Bias Maps**, with black representing an exceptionally strong cognitive bias – then red, amber, yellow and green showing reducing levels of cognitive bias.

Level of bias	
Black	81 – 100%
Red	61 – 80%
Amber	41 – 60%
Yellow	21 – 40%
Green	0 – 20%

Although the maps indicate the precise data from your responses, the patterns in the data are more important than the absolute numbers. In particular, you need to understand your own primary

cognitive biases and how your view of the group's cognitive biases compares with the team's view.

James – the data indicate that your primary cognitive biases are action-orientated biases, coupled with strong pattern-recognition biases and moderately strong stability and interest biases. The drawbacks of social biases would be much less of a challenge for you.

Your view of the cognitive biases of the team, as a whole, is shown in the middle bias map. This is a reasonably close fit with the results from your colleagues (the bottom bias map), apart from action-orientated biases – these appear to form a blind spot.

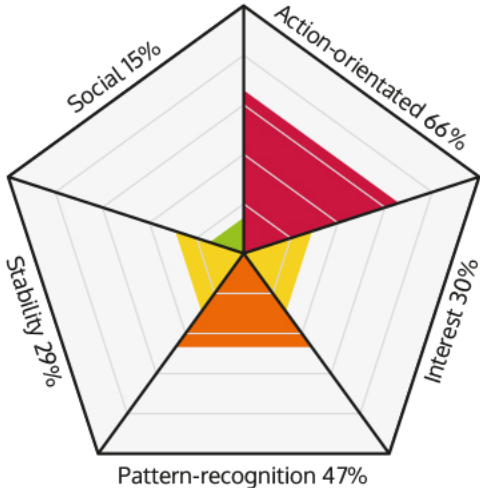
While you do underreport stability biases, the data otherwise indicate that you understand the culture of the team reasonably well – in four of the five areas of cognitive bias.

The data also show that you are an outlier on social biases for this team. This indicates that you will be more willing to be controversial during debates where your own biases are not triggered and will challenge the group to think differently.

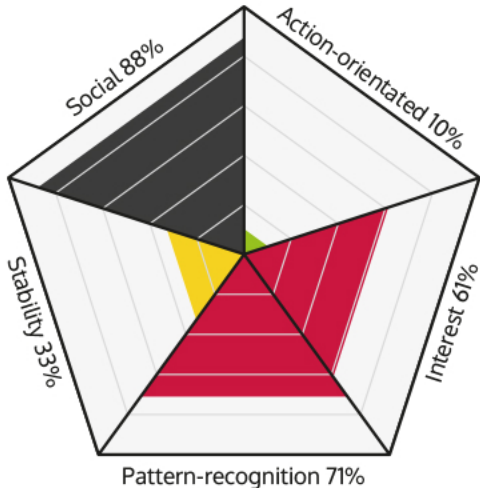
In the workshop, we will be concentrating on techniques to mitigate the negative effects of cognitive biases. Some of the techniques we will develop together will be useful for the whole leadership team, while others will be useful individually.

In preparation for our workshop, please review page 5 of your report. This discusses two general bias mitigation techniques which can be used to mitigate all 5 areas of cognitive biases. Please review these techniques and, whenever possible, practice using them in the run up to the workshop. As well as starting to mitigate your biases, this is excellent preparation for understanding and applying the specific techniques that we will be discussing.

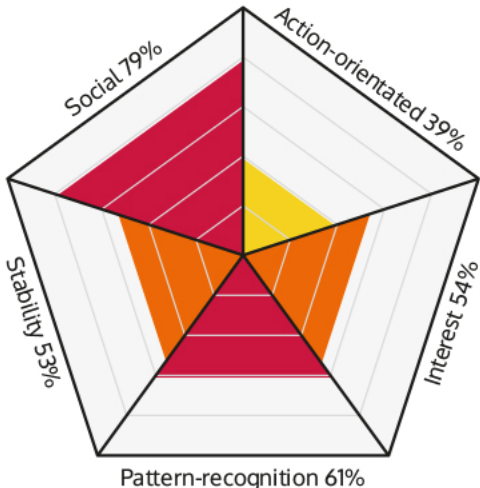
In addition, please review the benefits and drawbacks of the biases identified by the survey (see pages 6 to 10 of your report), and give some thought to specific techniques that could be used to overcome the drawbacks that the data indicate. We will explore this further in the workshop.



Your individual cognitive biases



Your view of the group's cognitive biases



The team's view of the group's cognitive biases

The first stage of dealing with cognitive biases is to acknowledge them. This could involve starting a discussion by stating 'My bias is...'. Having given your 'gut feel' solution in this way, if you follow this up with a story that explains how the bias probably formed in your mind, you will help yourself and others involved in the discussion to understand where your biases on the subject under discussion come from. This helps ease the search for a less biased view.

Mitigating cognitive biases also involves understanding how you think. One robust model for thinking about your thinking (also known as metacognition) is the **Ways and Means Model**. This shows two ways of thinking: convergent and divergent, each can be approached through conscious and non-conscious means.

- **Divergent ways** involve exploring ideas and expanding them.
- **Convergent ways** involve selecting and simplifying ideas to reach a conclusion.
- **Conscious means** involve a deliberate and effortful use of analysis and reason.
- **Non-conscious means** rely on intuition, instinct and experience.

This results in four equally important thinking styles. Using all four when reflecting on an issue is an essential step to good thinking. Understanding which you do not use well and developing it, is a good initial step in mitigating your cognitive biases.

Reflection techniques help the mind move systematically through each quadrant, and **'U' type thinking** is a particularly useful technique to reduce the effects of bias. This is where each quadrant of the Ways and Means Model is visited in turn, with the systematic exploration quadrant being revisited in the process. A five stage reflection process is shown in the next box. You can develop this by using prompts to aid reflection, and a sample set of these prompts can be found at the annex to this document.

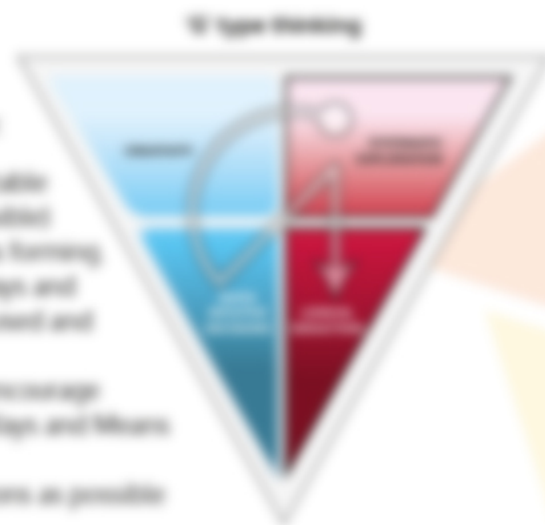
http://cognitivedisolutions.com/download/CBS_handout.pdf



Accordingly, the general mitigation techniques which apply to all biases are:

- Acknowledge your bias. Put it on the table early on in the discussion, and if possible identify the events that led to this bias forming.
- Understand your thinking. Use the Ways and Means Model to map thinking styles used and neglected.
- Use a five stage reflection process to encourage thinking in all four quadrants of the Ways and Means Model. Aim for 'U' type thinking.
- Do this for as wide a variety of situations as possible – not just at work.

During the workshop we will be looking at specific bias mitigation techniques for the biases that you have. These will support the general mitigation techniques above.



Action-orientated biases



Benefits of action-orientated biases	Drawbacks of action-orientated biases
<ul style="list-style-type: none">It has towards action and optimism is an attractive leadership trait.It is equally attractive in subordination (leading to a reinforcing cycle of bias between leader and subordinate).Things get done quickly.Can be useful in a crisis, disaster or business continuity scenario.Can encourage creativity and free thinking, particularly if combined with a 'permission to fail' culture.	<ul style="list-style-type: none">On a strategic level, thinking is clouded, driving us to take action less thoughtfully than we should. This is caused by over-confidence.On a tactical level, the bias drives us to take credit for events, when this is not strictly justified.It also drives us to neglect the role of chance.It tends to reduce team cohesion and effectiveness.It can lead to team burn out.There is often a lack of future focus in the team.Training and development tend to suffer.The bias drives the need to do something, even when doing nothing would be best.

Individual bias mitigation measures					Team bias mitigation measures				
Priority				Actions	Priority				Actions
1	2	3	4	Practice careful, 8 stage consideration	1	2	3	4	Separate out decision meetings and implementation meetings
1	2	3	4	Ask techniques and identify and recognise the role of luck	1	2	3	4	Pre-mortem techniques
1	2	3	4	Trust other techniques	1	2	3	4	Rolls
1	2	3	4	Reflection techniques	1	2	3	4	Debate techniques
1	2	3	4	Active listening	1	2	3	4	Measure and reward those who prevent errors
1	2	3	4	Never make a decision unless you have explored an opposing alternative view	1	2	3	4	Kick off failing projects and announce you have done so
1	2	3	4	Separate productivity and activity	1	2	3	4	Announce project completion and celebrate
1	2	3	4	Institute a cooling off period of 24 hours between plan and implementation	1	2	3	4	Use a, one self rule for new projects
1	2	3	4	Study failures	1	2	3	4	Encourage outside perspectives – guest speakers, etc.
1	2	3	4		1	2	3	4	
1	2	3	4		1	2	3	4	
1	2	3	4		1	2	3	4	



- They can be helpful in independent teams in multinational corporations. Actions that make sense locally, but may not be completely aligned with the corporate aims, will be taken.
- They can drive innovative discussion about corporate goals.
- They can drive brand loyalty in the team.
- They can attract strong talent, as the bonus culture is often strong.

- They can lead to teams pursuing objectives that are not in the organization's interest.
- They often drive inappropriate attachments to legacy products or brands.
- They can drive silo mentality across the team.
- They tend to encourage a short-term approach to the business.
- They can indicate inappropriate emotional attachments in the team.

[illegible][illegible]



Benefits of pattern-recognition biases

- Pattern-recognition is driven by experience. Experienced executives can see problems in the patterns of a situation, where others will miss them.
- The ability to spot patterns also drives good coaching and mentoring.
- They can also see opportunities.
- Decisions tend to happen faster.
- It can be empowering for team members, particularly if coupled with secure leaders.

Drawbacks of pattern-recognition biases

- These biases lead us to ignore conflicting evidence.
- They cause us to be overly convinced by a glib, yet coherent, narrative.
- They drive us to judge people's merits on past actions, rather than a sober analysis of their likely ability to deal with the current situation.
- There tends to be a lack of contingency plans.
- They lead to false analogies.
- They can be particularly dangerous when using 'big data', where patterns can often be found to justify almost any course of action.

Individual bias mitigation measures				
Priority			Actions	
1	2	3	Ruthlessly separate facts from assumptions.	
1	2	3	Seek alternative opinions and external viewpoints before acting.	
1	2	3	Define a range of future and contingency plans.	
1	2	3	Use 360° techniques in performance reviews.	
1	2	3	360° evaluation techniques.	
1	2	3	Use 3-stage reflection techniques.	
1	2	3	360° techniques.	
1	2	3	Check there are contingency plans.	
1	2	3	Estimate the outcome and the likelihood that the estimated outcome is wrong.	
1	2	3	Recognise that there are always unknown unknowns.	
1	2	3		
1	2	3		
1	2	3		

Team bias mitigation measures				
Priority			Actions	
1	2	3	Recruit and encourage a diverse team.	
1	2	3	Require alternative viewpoints before a decision is taken.	
1	2	3	360° evaluation.	
1	2	3	Deliberate techniques.	
1	2	3	360° techniques in small groups.	
1	2	3	360° analysis.	
1	2	3	Following, and role reversal in meeting roles. Thinking hats techniques.	
1	2	3	Bring in outside experts.	
1	2	3	Don't let your head be too big a variable.	
1	2	3	Use pre-mortem techniques.	
1	2	3		
1	2	3		
1	2	3		



Benefits of stability biases	Drawbacks of stability biases
<ul style="list-style-type: none"> • They stop us from 'looking the book' or upsetting people for no reason. • They stop us from dealing with those things such as systems, which are not broken. • They allow us to choose to do nothing, when this is the best course of action. • They can give a strong, simple sense of purpose, so that the organisation does not become 'blown off course'. • They encourage a reliance on history and tradition within the team, which can have benefits for team spirit and improve retention of talent. 	<ul style="list-style-type: none"> • They can cause us to stick to an initial position and discount contradictory evidence. This leads to insufficient adjustments of subsequent estimates. The organisation gets left behind the competition. • They can cause us to be overly risk averse. • They can cause a sentimental attachment to historical costs which clouds judgment of future courses of action. • They tend to hamper innovation, causing the status quo to appear more attractive than it really is. • Particularly at lower levels, they tend to retain more mediocre talent, rather than top talent. • When change is eventually forced on the organisation, it tends to be costly and painful.

Individual bias mitigation measures				
Priority				Actions
1	2	3		Use 'Team needs most likely' scenario technique
1	2	3		Use 'Trust no one' technique
1	2	3		Use 'No if' technique
1	2	3		Write everything down
1	2	3		90% evaluation
1	2	3		Use 'What if' techniques to plan new ideas
1	2	3		Set stretch targets
1	2	3		1 stage reflection techniques
1	2	3		
1	2	3		
1	2	3		
1	2	3		

Team bias mitigation measures				
Priority				Actions
1	2	3		Check that you are not measuring A while hoping for B
1	2	3		Two group 1/2 techniques
1	2	3		Deliberate techniques
1	2	3		Include reports to give alternative views
1	2	3		90% evaluation
1	2	3		Innovation team concept to identify initiatives
1	2	3		Run business simulation exercises with an external provider
1	2	3		Use a structured approach to change management
1	2	3		Prepare for multiple scenarios with a plan for each
1	2	3		
1	2	3		
1	2	3		

Social biases



- They strive as to seek consensus, when decision-making
- They excel in building and maintaining harmonious teams.
- It is easy to cancel decisions and initiatives.
- The team will have a reduced tendency to risk-taking
- They can significantly reduce stress in individual team members.
- Implementation of decisions tends to be fast.
- They tend to boost loyalty and cohesion within the team.

- They breed groupthink. Consensus is sought at the cost of a realistic appraisal of alternative courses of action.
- Innovative ideas tend to be suppressed.
- Effort can be wasted in guessing the intention of the leader, rather than taking independent action and reporting on what is going on.
- There tends to be a lack of team accountability.
- Succession of the leader is frequently an issue, unless very carefully managed.
- While implementation can be fast, decision-making can be slow.
- There is a risk of the team becoming satisfied with mediocrity.

[illegible]

Team decision intelligence measures			
Priority			Actions
1	2	3	Recruit and encourage a diverse team
1	2	3	Require alternative viewpoints before a decision is taken
1	2	3	90% rule/consent
1	2	3	Debate techniques, with leaders chair approach from leader
1	2	3	1:1 techniques, same question in small groups
1	2	3	Use the 4 questions approach to encourage a clear understanding of the corporate strategy
1	2	3	Build systems to allow for the easy correction of errors
1	2	3	Delegate authority sufficiently, retain accountability
1	2	3	Consider practices with 1:1 and 1:all techniques
1	2	3	Consider steps out for discussions
1	2	3	
1	2	3	

	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Comments
I understand and can mitigate my cognitive biases and those of the senior leadership team.					
I can map my cognitive biases in the 5 main areas					
I understand the cognitive biases of my colleagues/peers on the senior leadership team					
I know how to mitigate the effects of these cognitive biases					
I understand my strategic role, i.e. to create the conditions for success by changing the internal culture and systems to meet the external environment, now and in the future.					
I spend about 30% of my time understanding the people and culture in my organisation					
I quantify senior challenges and opportunities in the external environment					
I can articulate how conflict and opportunity can be addressed by clarifying what must be kept, lost and created					
I can see the connections that matter, in both the internal workings of the organisation and in the external environment.					
I have a clear concept of the whole, rather than an in-depth knowledge of one of the parts					
I constantly test and refine the models I create of the organisation and the external world					
I can synthesise and simplify, i.e. create clarity out of complex and seemingly disconnected details					
I provide a sense of direction through a coherent view of the future.					
I search for the unusual or something different					
I understand assumptions, use them wisely and constantly test them					
I can resist distraction and see things through, yet I do not let one decision unnecessarily dictate future decisions					
I seize opportunities as they emerge.					
I can feel the seeds of change, often through insights from my own diverse interests					
I intentionally look at things from a different perspective					
I make contact with staff and customers – discussions often reveal opportunities					
I am comfortable with uncertainty and experimentation.					
I generate a hypothesis, test it, make sense of what is emerging and share the response					
I understand that data are for analysis rather than creativity					
I understand basic probability and apply it to the data when I analyse					

KEY: ☒ Exemplary ☐ Yes ☐ Yes, but... ☐ No means No

My commitments

To become a better strategic leader, I will:

To help the team make better strategic decisions, I will:

1: _____

1: _____

2: _____

2: _____

3: _____

3: _____



Cognitive Bias Solutions^{LTD}

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