Decision Making

Making decisions is a central part of any management role, a core element in problem solving, and important in a range of other social and business activities. There are three elements to any decision, alternatives, preferences and information.

- If there are no **alternatives**, there is no decision to make; you have an issue[1] that requires managing! Where there are alternatives, there has to be a degree of uncertainty as to which alternative is best for a decision to be required.

- If a decision is required, **personal preferences and values** play a significant part in the decision making process and our preferences are affected by innate personal bias[2] and the social context we are deciding within.

  Research suggests that social rules play a significant determinant in how we make decisions. Regardless of our own preferences, we internalize our environment, the roles that we play within that environment and what expected behaviour looks like within those roles. Sometimes the rules we respond to are formally articulated. In many cases, they are informally established and simply reflect the operating culture *'the way we do things around here'*.

  All too frequently, there are a number of different roles, and rules, that could potentially be relevant in a given decision making situation. Understanding that there are rules, how they are developed, how they are shaped and how they evolve is a critical factor for any decision maker, or any observer of organizational decisions.

- For every uncertainty there is **information** that has the potential to reduce or remove it! Without information you make a decision and find out what happens, with information you find out what will happen then decide what to do!

However, we rarely if ever have enough information; as Carl von Clausewitz wrote more than 100 years ago, *"War is the realm of uncertainty; three quarters of the factors on which action in war is based are wrapped*

[1] For more on ***issue management*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1089_Issues_Management.pdf

[2] For more on ***innate bias*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1069_Bias.pdf

in a fog of greater or lesser uncertainty. . . . The commander must work in a medium which his eyes cannot see; which his best deductive powers cannot always fathom; and with which, because of constant changes, he can rarely become familiar." Substitute 'project' for war and the sentiment remains true today!

And, information has no value at all, unless it has the potential to change the decision! The critical thing is not the amount of information available; but having the key elements of information available when needed in a useful form, which improves your awareness of the situation and ability to act. Once the best possible (but typically inadequate) information has been assembled, decisions need to be made; usually no decision is the least beneficial outcome.

The final factor to consider is the **quality** of the information being accessed / provided / used; no information is complete or perfect. Before making use of any information, the decision maker has to evaluate the reliability and accuracy of the information and look for any vested interests or bias on the part of the people developing the information. Everyone is biased and almost everyone involved in information gathering / development has an interest in the information they have helped assemble so the question has to be what effect these influences may have.

These three elements are combined within a 'frame' – the way you see the problem that requires the decision. This 'frame' creates the basis within which you will decide and in many situations is itself open to different interpretations depending on how you describe the problem[3].

Practical Decision Making

Decision making always involves a level of ethics and a degree of risk. Ethics frame and help differentiate, right from wrong, good from bad, desirable from undesirable, and just and fair from unjust and unfair; but there are very few situations where the best option is absolutely 'clear cut'[4].

Accepting all decisions are 'risky' is often more challenging. The simple fact is if there is no uncertainty, there is no need for a decision; the answer is obvious! Where a decision is needed there are competing alternatives creating an uncertainty that matters - ***a risk***[5]. Where a risk exists, there is a probability the right decision will be made and a probability the wrong decision will be made. Whilst it is reasonable to expect the decision taker to act with appropriate care and diligence, this is not the same as expecting him or her to always get the decision correct.

In law this is called the 'statutory business judgement rule'; the decision taker is protected by this 'rule' provided he or she has applied appropriate care and diligence and balanced the foreseeable risk of harm against the potential benefits that can be expected to flow from the decision they have made. Business judgements (decisions) of necessity involve uncertainty and risk taking and this should be encouraged to an appropriate extent. Hindsight is useful for retrospective reflection and learning but does not define the framework within which the decision was being made. All that can reasonably be asked of a decision maker is for them to act in 'good faith' and apply applied appropriate care and diligence in the circumstances of the decision making process.

In this respect is time urgency is a critical consideration. How much time do you have to go through a problem solving or information gathering process to inform your decision making? Delay may be beneficial if the value of the expected additional inputs achievable in the time outweigh the costs of delaying but these gains need to be real. Procrastination helps no-one and once time has been lost it cannot ever be recovered; whereas a less than optimum decision can frequently be adjusted in the light of better information. The 'window of opportunity' associated with any decision is only open for a limited period of time.

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[3] For more on ***defining the problem*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1013_Problem_Solving.pdf

[4] For more on ***ethics*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1001_Ethics.pdf

[5] For more on ***managing risk*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1047_Risk_Management.pdf

Then there is the question of trust and acceptance. Are you trusted to make the decision or are you merely an advisor to the decision maker (alternatively do you trust the person delegated to make the decision) and when the decision is made, will it be accepted by the affected stakeholders? Trust[6] is a precursor to acceptance and the degree of trust present, combined with the power and influence of the decision maker[7], will influence the best approach to decision making - where trust is not present, time is needed to negotiate and reach consensus.

There is also an interesting phenomenon that occurs when decisions need to be made. Usually there is less input to large, complicated decisions than there is for decisions that are routine and simple. This occurs because most people aren't familiar with the subject and background surrounding the large, complicated decisions but they are familiar with the context of the smaller and more routine decisions. Which causes everyone to want to be involved in the discussion about the smaller decisions; care is needed to make sure only the 'right people' are involved in each decision and they understand the parameters of the decision to be taken.

Depending on the circumstances different types of decision are needed that have quite different characteristics, understanding these differences will help you reach the best decision.

Wicked Problems

Wicked problems were defined by Rittel and Webber in the 1970s as being a problem that is difficult or impossible to solve because of incomplete, contradictory, and/or changing requirements that are often difficult to recognise. These are at the extreme end of 'dilemmas'; the characteristics that define a 'wicked problem' are:

- There is no definitive statement of the problem and each solution reveals new aspects of the problem.
- Since there is no definitive problem there is no definitive answer therefore you cannot tell if you have answered the problem!
- Some solutions are better (good) than others (bad) but there is never a true/false or right/wrong solution. Every solution has its consequences!
- The uniqueness of each problem means it is hard to test or simulate solutions ahead of time. The 'problem' is usually a symptom of many other interlocking problems and the cause can be explained in numerous different ways.
- There are many stakeholders with different perspectives on the problem and how to solve it. Extensive consultation, negotiation[8] and conflict management[9] skills are essential.
- Clarity and understanding emerge slowly and iterative approaches to solving the problem may be necessary. Including learning from earlier failures.

Wicked problems in modern business involving competitors, customers and markets are sometimes referred to as X-Problems. Wicked problems are closely associated with complexity, emergent properties and nonlinear outcomes are normal[10]. Soft systems thinking can be usefully applied to these problems[11]. However, as with dilemmas, the worst outcome is usually achieved by not making a decision; the difference

[6] For more on the ***value of trust*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1030_The_Value_of_Trust.pdf

[7] For more on ***power and authority*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1095_Understanding_Power_Authority.pdf

[8] For more on ***negotiation*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1032_Win-Win_Negotiating.pdf

[9] For more on ***conflict management*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1041_Managing_Conflict.pdf

[10] For more on ***complexity*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1058_Complexity_Theory.pdf

[11] For more on ***soft Systems*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1044_Systems_Thinking.pdf

is wicked problems are best dealt with incrementally, adjusting each step of the solution based on observed outcomes from the previous steps.

Dilemmas

Dilemmas have no 'right' answers. They are not described in the 'rules' and there is no way to calculate a solution. Dilemmas exist at all levels:

- In a family situation, it is when you discover your daughter's school play which she has been rehearsing and practicing for months is on the same evening as your son's football final; you cannot be in two places at once…..
- In a work situation two people simply cannot work together and the friction is damaging team moral and productivity. You cannot keep both people on the team, they are both key contributors in their own right and to transition both people out of the team would have a major impact on delivery. Who should go and who should stay???
- Your organisation can support project 'A' or project 'B' but not both. Both projects score equally on your selection criteria and both have passionate advocates who have spent months working on the feasibility of the ideas…..

Most dilemmas involve ethics[12], and your decision will unfairly disadvantage at least one group of stakeholders. But not making a decision is worse than making a decision, if you do not decide everybody is worse off[13]. Dilemmas are common in areas of organisational governance[14] and are not infrequent at the project management level.

To resolve a dilemma, the first issue is to recognise there is no right answer and stop wasting time searching for one. Then based on your ethical framework make the best decision possible and live with the consequences (PMI have developed a framework to help with this type of decision[15]).

Conundrums

A conundrum is an intricate and difficult question that only has a conjectural answer.

Many riddles are conundrums; the answer can be derived from the riddle but is not obvious; traditionally, the answer to a conundrum involved a pun: "*What's the difference between a jeweller and a jailer?*"- "*One sells watches and the other watches cells.*"

In modern business the meaning has shifted to mean a complex or perplexing problem that has no clear solution and is difficult or impossible to resolve based on your current knowledge. Many conundrums have easy answers when you know what the answer is (but you have to be clever to find it), others are mysteries, and others may be dilemmas. The challenge is to determine what sort of decision you are being asked to make[16].

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[12] For more on ***ethics*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1001_Ethics.pdf

[13] See, ***Problem Solving***: http://www.mosaicprojects.com.au/WhitePapers/WP1013_Problem_Solving.pdf

[14] For more on ***Governance*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1033_Governance.pdf

[15] Download a copy of the ***PMI Ethical Decision-Making Framework*** from: http://www.mosaicprojects.com.au/PDF/PMI_Ethical_Decision_Making_Framework.pdf

[16] The concept of complex problem solving touches Conundrums, Mysteries and Puzzles. All three may involve a large number of diverse, dynamic and interdepended elements in a novel situation where it is difficult or impossible to get good quantitative data. The art and effect of complex problem solving is discussed in the CSIRO paper ***Behavioural Economics and Complex Decision-Making*** (basically we don't do a good job dealing with complex problem solving): http://www.mosaicprojects.com.au/PDF/Complex_Decision_Making.pdf, an interactive model to assist this process and improve outcomes can be viewed at: http://www.idiagram.com/CP/cpprocess.html (see also Annex 1)

Paradox

A paradox is a ***seemingly*** true statement or group of statements that lead to a contradiction or a situation which seems to defy logic or intuition. A well known project management paradox is Cobb's Paradox.

Martin Cobb worked for the Secretariat of the Treasury Board of Canada. In 1995 he attended The Standish Group's CHAOS University and created his now famous paradox (Cobb, 1995): ***"We know why projects fail; we know how to prevent their failure - so why do they still fail?"***

The apparently true statement is that we know how to prevent project failure, but do we really know how to make projects successful? And if we do, the illogical element is, why do we let them fail??[17] A different example of a paradox is ***This statement is false***, if it is it is not, and if it isn't it is……. ☹

Mysteries

Malcolm Gladwell's book – ***What the Dog Saw*** made the following (now outdated) distinction between a puzzle and a mystery:

> *Osama bin Laden's whereabouts are a puzzle. We can't find him because we don't have enough information. The key to the puzzle will probably come from someone close to bin Laden, and until we can find that source bin Laden will remain at large – the puzzle was solved in 2012.*
>
> *The problem of what would happen in Iraq after the toppling of Saddam Hussein was, by contrast, a mystery. It wasn't a question that had a simple, factual answer. Mysteries require judgments and the assessment of uncertainty.*

When confronted with a 'mystery' the solution is closely aligned with risk management[18]. You do not have enough information to make an 'informed decision' and you do not know when (if ever) better information will become available. You need to determine options, assess probabilities and be prepared for outcomes you were not expecting. As with dilemmas, there is no correct decision only the best decision based on the assessed probabilities 'at this time'.

Puzzles

Puzzles have one right answer that may be resolved in one correct way or which may be achieved through several different routes. To most people solving a Rubik's Cube is a puzzle; we lack adequate information to easily solve the puzzle. We either don't know the optimum processes, or we don't have the necessary information, to reach a solution. Competitors that take part in Rubik's Cube competitions know the processes needed to reach the 'one right solution' and can apply them in a few seconds.

The way to solve a puzzle is to get the skills and information you need[19]. If you don't know, find someone who does. Once you have the information and knowhow, the puzzle is reduced to a problem and making a correct decision is straightforward.

Problems

Solving problems simply require hard work. There is one right answer and usually one optimum way to solve the problem. Any high school maths test contains a series of problems. Calculating the loads on the catenary cables supporting a suspension bridge is a complicated problem but once solved, determining the correct size for the cable is straightforward.

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[17] For more on ***Cobb's Paradox*** see: http://mosaicprojects.wordpress.com/2011/03/18/cobbs-paradox/

[18] For more on ***Risk Management*** see: http://www.mosaicprojects.com.au/PMP_Sup/PMP_Mod11_Risk.html

[19] For more on ***data gathering and brainstorming*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1068_Data_Gathering.pdf

Problems come in different sizes; big problems are a problem that is in fact solvable but will take a great deal of time and effort and has a significant impact on a project, program or business. Many of these can be directly linked to failures such as unrealistic stakeholder expectations and poor or incomplete requirements definition; the challenge is to make sure the problem is resolved before it causes project failure!

The way to solve a problem is to gather the information needed, apply the correct rules and processes[20] and determine the answer. Once the answer is known, the correct decision is obvious. Various approaches to problem solving are discussed in depth in WP1013 – ***Problem Solving***[21].

Establish an effective decision making framework

Decisions are usually needed from various members of the project team, to avoid ambiguity and procrastination, establish a decision-making framework by answering the following questions:

1 **Who?** Prior to the beginning of any project, determining who has decision-making power is critical. On most projects there will be several decision makers with different responsibilities.

2 **What?** Different members of the team will probably have different decision-making responsibilities based upon their role. Identifying the scope of everyone's responsibility regarding the type of decisions they can and can't make avoids confusion and makes it possible to streamline the process. The project manager should not be expected to make every decision and degree of autonomy is a powerful motivator[22].

4 **When?** Decision fatigue refers to the deteriorating quality of decisions made by an individual, after a long session of decision making; for instance, judges in court have been shown to make poorer decisions later in the day. The effects of decision fatigue include:

- A Reduced ability to make trade-offs leading to irrational trade-offs in decision making.
- Decision avoidance, either not making a decision or taking the 'easy-way-out' rather than the best option and/or impulsive quick decisions.

This effect is closely aligned with the loss of self-control caused by sleep deprivation[23] and suggests important decisions should never be made after lunch!

3 **How?** Identifying how decisions are made and how they are shared with project team members is almost as important as the decision itself. There are a number of alternatives for effective decision making that can be used for everyone involved in the decision/meeting or just some core decision making team or body[24]. What is important is everyone understands the process. Some of the options include:

- The PM or responsible manager can decide on their own (*command / dictate*).
- The PM or responsible manager can decide after listening to the various points of view (*consultation*).
- Consensus where all of the parties agree (*unanimity*).
- Consensus where most agree and there is no sustained objection (*ISO use this model*).

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[20] ***Decision support tools*** are discussed in: www.mosaicprojects.com.au/WhitePapers/WP1062_Ranking-Requirements.pdf

[21] For more on ***problem solving*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1013_Problem_Solving.pdf

[22] For more on ***motivation*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1048_Motivation.pdf

[23] For more on the ***effects of tiredness*** see: http://mosaicprojects.wordpress.com/2014/01/24/tired-workers-lose-their-ethics/

[24] ***Group decision making options*** are also discussed in: www.mosaicprojects.com.au/WhitePapers/WP1062_Ranking-Requirements.pdf

- Substantial majority vote (*eg, 75% approval*)
- Simple majority vote.
- Plurality where the largest block decides even if this is not a majority (*typically used where multiple options are open for decision*)
- A random selection (*coin flip*)

The decision framework should focus on supporting the primary outcomes of the project or program (eg, delivering business results); encompass the two aspects of a decision, making the decision and implementing the decision; and be designed to provide the flexibility necessary to enable an adaptive management process that allows for changes as new information becomes available, and at the same time, provide anchors to align stakeholders on the critical decisions necessary to successfully manage the project or program.

Other factors to consider in the decision making process include:

1 **Understanding the constraints.** The available time can restrict decision making options as can the level of trust and likelihood of the decision being accepted by those affected. It takes more time to consult or reach a consensus, but a command is only helpful if those affected are prepared to trust the decision maker and accept his/her decision. The quality of the decision (and the decision maker) is also a factor – where a high quality decision based on good information is possible, the resulting decision is likely to be accepted more readily.

2 **Decision making techniques.** A range of techniques can assist in the decision making process:

- **Pros and cons analysis**: a qualitative comparison in which the potentially good things and bad things associated with each option are listed and then compared.
- **Kepner-Tregoe (K-T) decision analysis**: A quantitative process where a team of experts score a range of options individually and the summation provides data for a decision. The less certain the information, the larger the number of experts required.
- **Problem solving**: see www.mosaicprojects.com.au/WhitePapers/WP1013_Problem_Solving.pdf
- **Analytical Hierarchy Process (AHP)**: a quantitative analysis using pair-wise comparison on how well an option meets a criterion. The process is based on the concept people make relative judgements easier then absolute judgements[25].

3 **Mindfulness.** Mindfulness is an inherent quality of human consciousness that can be enhanced by appropriate training; it is the intentional, accepting and non-judgmental focus of one's attention on the emotions, thoughts and sensations occurring in the present moment. Applying mindfulness can help decision-makers to reach conclusions, and improves the way decisions are identified, made, implemented and assessed. As well as helping reduce stress (meditation is closely relaed)[26].

4 **The "right of one objection".** Unfortunately the majority of the world's workers tend to keep information to themselves rather than risk the wrath of authority by 'throwing a spanner into the works'. The introduction of a 'no-sanction' right to one objection policy can reduce this tendency and importantly, information withholders become liable to an equal share of the consequences if they have kept quiet and a bad decision eventuates. The 'one objection' policy says that regardless of the rank of the person making the decision, if you have information that shows that the decision may be wrong, you are **obliged** to share that information with the person making the decision. However, once the objection has been properly considered, the objector is then expected to comply with the final decision.

[25] For more on ***pair-wise comparison*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1062_Ranking-Requirements.pdf

[26] For more on the use of ***mindfulness*** in decision making see: http://knowledge.insead.edu/leadership-management/why-mindful-individuals-make-better-decisions-3479

5 **Minimising stress:** Whilst low levels of are good for you high levels are detrimental to good decision making in all but the simplest circumstances[27]. Under high stress levels, individuals and teams restrict cue sampling, decrease vigilance, prematurely close off the evaluation of options and engage in task shedding. Additionally the capacity of the working memory is decreased, which means in total, the amount of information taken in is reduced by the stress level. This is likely to lead to sub-optimal decisions at a time when making a decision is likely to be time critical. Given the stress is likely to be externally imposed; the best way to minimise the effect of stress is to create an information rich environment with good communication channels within the team and your support network before the stress arrives. Then make your best call.

6 **Using and protecting your team.** High performance teams during uncertainty and crisis:

- Show high levels of flexibility and can perform tasks very rapidly.
- Use implicit communication rather than explicit communication. As time pressure increased, the members stop waiting for explicit information requests and instead provided leaders with information they implicitly determine will be useful.
- Use multi-dimensional information exchange rather than top down and anticipate the information needs of others and their leaders.
- Delegate the details of the decision to the right level within the team[28].
- Have high levels of trust between each other and the leadership team and are made up of individuals who have achieved necessary levels of capability.

Communication is key to supporting teams under stress; leaders can support their teams by explicitly:

- Encouraging teams members to use their intuition.
- Expecting team members to anticipate information needs of all stakeholders.
- Within bounds of security encouraging rich and multi-dimensional information transfer.
- Drafting high level plans to allow for flexibility and rapidity of response by teams.
- Protecting those assigned to detailed tasks from as much stress as possible.
- Communicating trust in the team and avoiding micromanagement.

7 **A good outcome is not the same as a good decision!** Good decisions can lead to bad outcomes when there are uncertainties involved. And conversely, bad decisions can lead to good outcomes. An organisation or person that makes good decisions will improve the chance of good outcomes, but this is not guaranteed. To quote Napoleon: *"Given the choice between a good general and a lucky one, I would pick a lucky one every time"*. Napoleon was no fool; he knew that mistaking luck for wisdom is dangerous.

8 **Learn from feedback!** This final stage of decision-making is arguably the most important for improving one's decision-making prowess in the long run – actively look for ways to improve your decision making.

9 **Deal with surprises!** Good managers may organise in advance for the certain, the likely and the possible. But they are also equipped with effective practices for instant deployment in the event of the unexpected. Snap decision generally takes a few seconds of dithering, maybe interspersed with arguing, and then action…… followed by endless damage of assorted kinds. There is a better option!

[27] For more on the ***effect of stress*** see, ***Problem Solving***:
http://www.mosaicprojects.com.au/WhitePapers/WP1013_Problem_Solving.pdf

[28] For more on ***layered decision making*** see:
http://www.mosaicprojects.com.au/WhitePapers/WP1086_Standard_Operating_Procedures.pdf

The first step in managing a surprise is to ask some questions efficiently. You didn't know this was coming. You may not even know what it is. Rather than making a 'snap decision', interpose a carefully designed fast-decision process for emergency use by asking these questions:

- Why is a decision necessary?
- If the need arises from someone else's urgency, why must I take responsibility?
- Do I have the authority to make a decision?
- What is the potential outcome if nothing is done?
- What negative effects could a decision bring about?
- How serious would or could various outcomes be?
- How likely is a negative effect?

Then make an informed decision either to not to decide, or to decide. If you decide not to make a decision, make sure other managers know this is your position. If you decide to make a decision decide how much rigour is needed and apply the appropriate processes discussed in this White Paper.

Beware of *rationality*!

There are three models which attempt to explain how managers/decision makers make decisions.

Rational Model

This model assumes decision making involves logical thought process, with in-depth analysis of alternatives and their outcomes. This model is based on assumption that decision makers are rational while making the decision. There are certain assumptions in Rational Model of decision making such as:

1. The decision maker uses his/her consistent system of preferences;
2. The consequence will be entirely rational;
3. Decision maker is aware of all possible options;
4. And decision maker can determine the likelihood of failure and success for each alternative.

These assumptions ignore the innate bias[29] of each individual and render the Rational Model impractical. In practice, there are constraints of time, resources, available information and knowledge. Additionally, there are individual preferences and biases. None of these factors are considered in the Rational Model making it effectively useless.

Bounded Rationality Model

This model was developed in an attempt to overcome the inadequacies of Rational Model. It considered the limitations of rationality in human decision making. The model argues that the constraints imposed on decision maker tend to make him lesser rational. The Bounded Rationality Model has few assumptions and takes into account preferences of decision makers. The model assumes:

1. Decision makers (mostly managers) select first alternative that appears acceptable;
2. Decision makers recognise their understanding of the world is simple;
3. Decision makers find it comfortable to make decisions without defining all alternatives;
4. Decision makers makes decisions based on common sense or heuristic.

When the decision maker perceives that a given decision is satisfactory (or acceptable or good enough) he/she has considered the trade-off between the efforts and time required to collect the necessary information

[29] For more on ***bias*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1069_Bias.pdf

for all the alternatives and made a decision based on known/available alternatives and heuristics. This model is plausible in well-ordered decision making.

The Complexity Model

This model assumes that the decision making process in organisations are random rather than systematic. It depicts the organisation decision making as an interconnected system which contains problems, solutions, actors (ie, users/participants). The components are randomly moving and if these factors connect a decision is made. The quality of the decision depends on whether the *right solution* is connected to the *right problem* at the *right time* with the right participants involved[30].

Essentially, this model assumes that decisions in organisations are made in a chaotic situation with high level of uncertainty. This is more likely true in today's fast paced business environment, where managers have to make critical decisions in short time spans, with incomplete information and typically in collaboration with other actors in the system.

Summary

There have been numerous criticisms of the rational view of decision making proposing alternative models and thought systems based on bounded rationality, satisficing (good enough) strategies, limited attention, political rationality, incrementalism, muddling through, complexity and many others. The limitations identified by many of these approaches refer to the inescapable fact that decisions are made by humans. The simple fact is decision-making relies on human thought and action; therefore it can only be as good, and as rational as the human processes that deliver them. To improve decision making in projects may require us to re-consider how we make decisions, and whether people are adequately represented as human information processors, with limitations and gaps that are not acknowledged by the rational models[31].

Traps to avoid!

Some of the errors leading to bad decisions include are listed below. Most of these are driven by innate bias[32] and need to be actively avoided:

1. **Selective Search for/use of Evidence**: Focusing on facts that support your pre-determined conclusions, but disregard other facts that support different conclusions.
2. **Premature Termination of Search for Evidence**: Accepting the first alternative that looks like it might work (but don't get sucked into an endless search for non-existent evidence).
3. **Using bad information**[33]: factoids[34], unsupported opinions and other inaccurate information will inevitably lead to bad decisions.
4. **Inertia:** Being unwilling to change old thought patterns.
5. **Selective Perception**: Prematurely screening out information not assumed to be useful.
6. **Wishful Thinking**: Wanting to see things in a positive light.

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[30] For more on ***complexity theory*** see: Mosaic's blogs at:
- http://mosaicprojects.wordpress.com/category/general-project-management/complexity-general-project-management/
- A Simple View of 'Complexity' in Project Management: http://www.mosaicprojects.com.au/Resources_Papers_070.html
- The Crossderry blog at: http://crossderry.wordpress.com/experience-complexity-set/

[31] Project based decision making is the focus of the book *Project Think: Why good managers make poor project choices*, published by Gower: http://www.ashgate.com/isbn/9781409454991

[32] For more on ***innate bias*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1069_Bias.pdf

[33] For more on ***screening out bad information and advice*** from your decision making process see: http://mosaicprojects.wordpress.com/2015/01/03/fine-tune-your-detectors/

[34] A ***factoid*** is something that looks like a fact but is in reality someone's untested assumption wrapped up to look like a fact. See: http://mosaicprojects.wordpress.com/2015/01/03/fine-tune-your-detectors/

7. **Recency Effect**: Putting undue attention on recent information and experience while minimising the value of information collected in the past.
8. **Repetition Bias:** Believing what's been stated the most often and by the greatest number of sources (most 'well known facts' are 'commonly held misconceptions'?).
9. **Anchoring and Adjustment:** Being unduly influenced by initial information that shapes your view of subsequent information.
10. **Group Think:** Conforming to peer pressure or the opinions of the majority.
11. **Source Credibility:** Rejecting input from sources prematurely judged to be 'not credible' or 'out-of-sync' with the way you do business.
12. **Attribution Asymmetry:** Attributing success to your team's abilities and talents, but attributing failures to bad luck and external factors.
13. **Role Fulfillment:** Conforming to the decision making expectations others have of someone in your position.

Conclusion

Recognising that most decisions are going to be irrational to a greater or lesser extent and that many decisions have no right answer anyway allows a practical approach towards achieving the best decision to be developed:

> *A man is known by the dilemmas he keeps, not by the problems he solves or the conundrums he cleverly resolves. To sit knowingly with the fundamental impossibility and still engage. To accept that I might approach understanding without ever touching it and still engage as if I might*[35]….

Many issues with complex initiatives stem from a belief that all decisions are puzzles and that just a little more information is all we need to reduce the question to a problem with its one right answer. Consequently massive amounts of time, effort and resources can be wasted trying to find the additional information to allow the problem to be solved and the 'one right answer' calculated.

Dilemmas simply do not have a right answer. Any answer will be in part wrong, unfair and harmful to some stakeholders. However, not making a decision will be harmful to all stakeholders, the challenge is usually to minimise the harm, occasionally to optimise the benefit.

Mysteries are often hidden within too much information and understanding them is closely aligned to the ideas contained in complexity theory and risk management. Accepting you 'can't know' the answer to a mystery is critical; then you are free to make the best decision you can based on the information available and your assumptions; but always be prepared for nasty surprises.

Puzzles respond well to the application of scientific management principles of measurement and research. Gather the right information and skills and you reduce a puzzle to a problem, and can then calculate the optimum answer. Unlike dilemmas and mysteries, problems do have one right answer, but do you have the time??

It is critically important to recognise the importance of time. Very few complex decisions are made in a space where time is unimportant and when time pressures exist, you may have to make a decision to deal with the primary decision on the assumption it is a 'mystery' simply because there is insufficient time to gather and analyse all of the information needed to reduce the decision to a problem. The importance of timeliness in decision making is part of the discussion on 'problem solving[36]'.

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[35] Schmaltz D.A. *The secret life of projects*. www.PureSchmaltz.com

[36] For more on ***problem solving*** see: http://www.mosaicprojects.com.au/WhitePapers/WP1013_Problem_Solving.pdf

Therefore, when confronted with a difficult decision, the challenge is to recognise the difference between these different types of decision and use the best approach to reaching a decision within the time available.

Also refer to the decision making model described in the *PMBOK® Guide* at p412, Appendix G.6.

See Appendix 1 (below) for a model to resolve complicated decisions.

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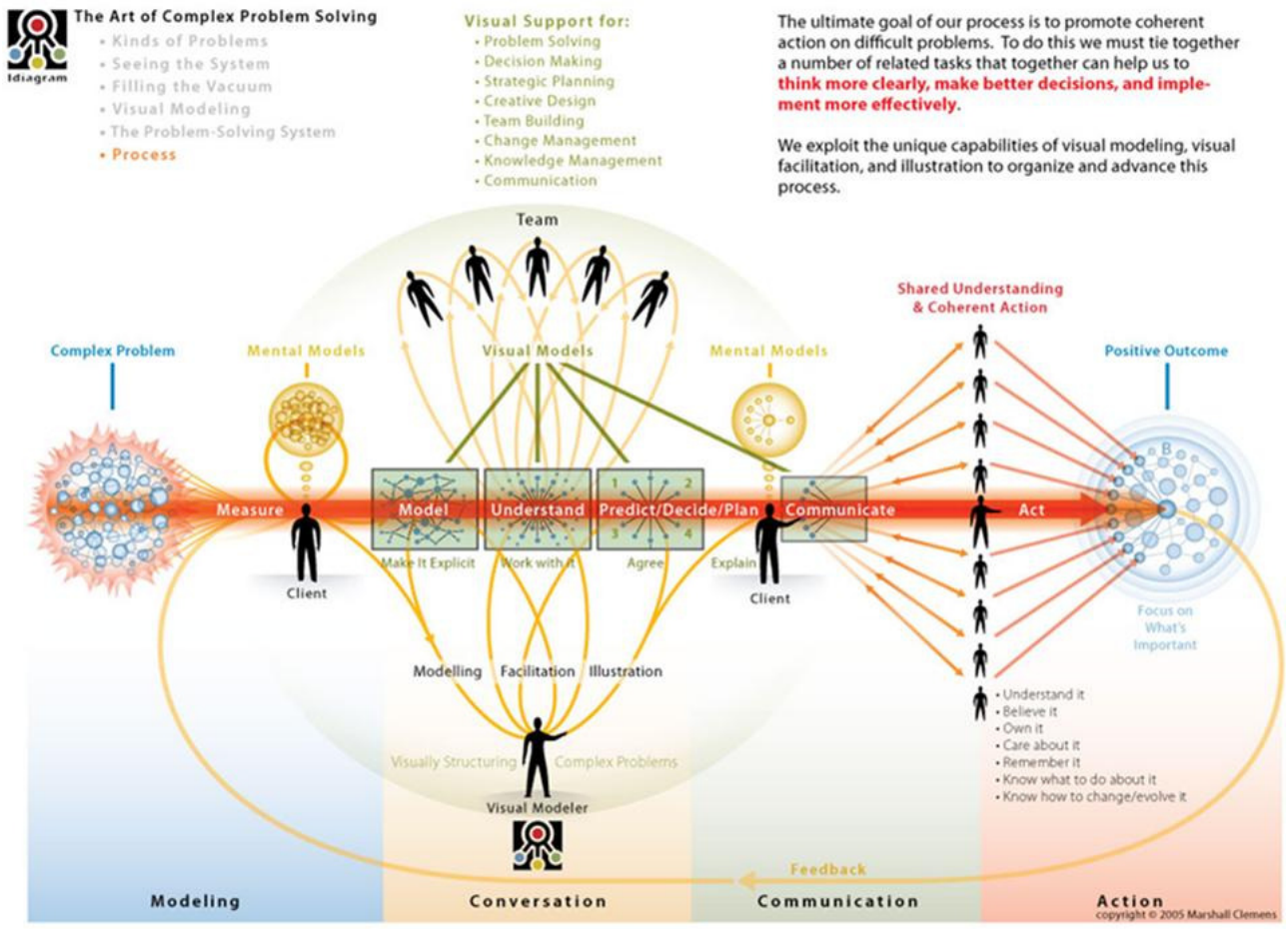
Annex 1 – The Complicated Decision Solving Model



The art and effect of complex problem solving is discussed in the CSIRO paper Behavioural Economics and Complex Decision-Making (basically we don't do a good job dealing with complex problem solving): http://www.mosaicprojects.com.au/PDF/Complex_Decision_Making.pdf, an interactive version of this model can be viewed at: http://www.idiagram.com/CP/cpprocess.html.