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Creative Problem Solving

Taking imagination through to action

Jonne Ceserani

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Creative Problem Solving: Taking imagination through to action
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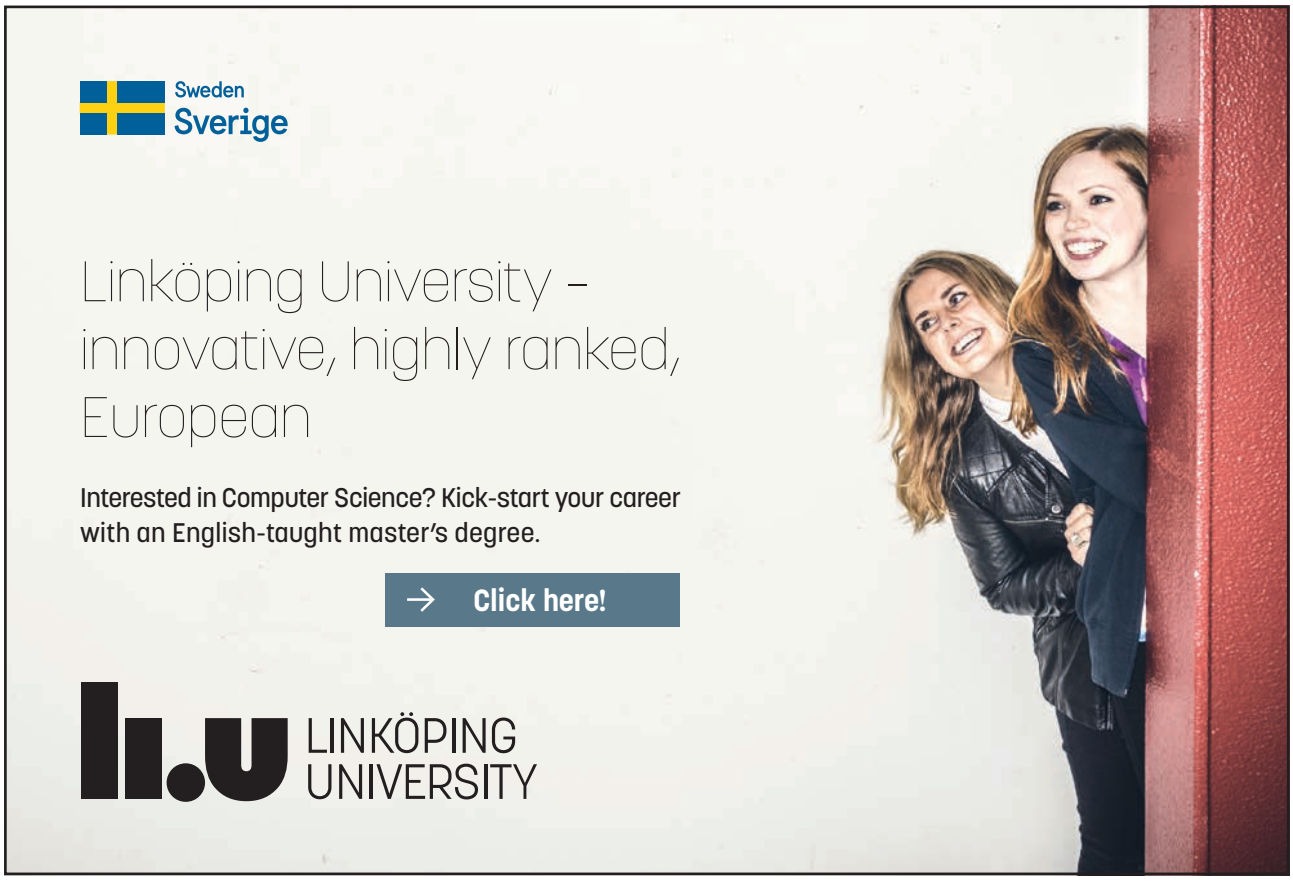

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1 Introduction

Creative problem solving and innovation is regarded as a mystery by many people, something that one or two unique individuals can seek to do while more mundane minds stick to the daily grind.

This view is reinforced by the ways people talk about creativity. Ask a pilot how they fly a plane and they can describe the process in detail. Ask the manufacturing manager in a factory how they produce their product and they will be able to tell you. Ask a sales director to describe their sales process and they will have no difficulty talking you through the step by step processes followed.

Ask these same people to talk about creativity and innovation and you will get vague replies, often relying on reference to conceptual models, like 'stage gates', or 'six thinking hats', (De Bono), maybe, 'brainstorming'. The understanding about **how** we are creative is simply missing and because people are unable to talk about it and describe it, it is apparently impossible to do it.

Performance can only be improved by first being aware of what you do, then how you do it, so that you can then consider how to do it better, as any sports coach will tell you.

The myth of exclusivity is further reinforced by the 'creative industries', advertising and the like. Indeed, within any advertising agency there are roles like 'Creative Director' working with the 'creatives'.

I had a colleague who had such a role in a large international agency and he said that the least creative approach to creativity he had ever seen were the two 'creatives' working together, alternately offering and rejecting one another's ideas and committing them to the waste bin. He told me that all of their best campaigns began with ideas that he found by going through that same bin at the end of the day.

1.1 Myth slayer

The world is a complex and messy place only made more so by people who like to pretend that it is more complicated than it really is. I like to play the role of 'debunker' and describe ideas as simply as possible so that people have a useful understanding that allows them to make choices about working in new ways and behaving in new ways.

This book will 'debunk' creative problem solving and leave you with a simple model and a set of behaviours and tools so that you can craft your skills as a creative problem solver. Everyone has a capability to be a creative problem solver, actually you already do it all the time, but you probably do not call it that and do not know you are doing it, therefore you cannot replicate what you do currently and cannot improve your performance. This book will change that.

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1.2 All the knowledge is out there

Clearly all the knowledge to be a great creative problem solver is out there somewhere as people have been doing it and continue to do it successfully. This is good news as it means you do not have to learn anything new, you just have to reorganise what is already known in a new way so that it is fit for purpose.

The contents of this book contain very little that is original. You will read about process consultation, an idea from the ’60s begun by Edgar Schein.

Albert Einstein wrote about imagination and absurdity. Walt Disney described a creativity strategy – dreamer, realist, and critic – that he used.

Neuro Linguistic Programming, (NLP) describes how people use language and metaphor to create their reality.

Appreciative Enquiry explores the importance of always building on the positive and most coaching modules use the same approach.

Cognitive Psychology and Neuroscience has explored the nature of the brain and how it works for many years and although it remains the least understood part of the body research is beginning to demonstrate a capability to map out the brain working to confirm much of what was previously only understandable by observation of external behaviour.

Google creative problem solving and you will find many versions. This book describes the core ideas behind them all by putting a number of the core ideas in one place in a coherent flow so that you can make new choices if you wish.

1.3 Definitions

There are as many definitions about creativity, innovation and creative problem solving as there are people to offer them. Try Googling! Within this plethora of views there are simple common threads.

1.3.1 Creative Problem Solving

Creative Problem Solving is the process of capturing the imagination, using this to direct thinking towards possible action and making the imagination real by going out into the world and doing something new. It is the structure that allows people to navigate through a flow of creativity leading to innovation and commercialising the result.

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1.3.2 Creativity

Creativity is the process of having an idea.

It is an individual process and is the result of a spark of electricity in your brain as a synapse and a neuron connect and a thought arrives in your conscious mind, labelled by you as an idea if it is new and a memory if you have had the thought before. Ideas may be stimulated by external activity, working in a group for example, but each idea is a single individual moment; you do not hear about joint 'eureka' moments.

1.3.3 Innovation

Innovation is the process of taking diverse individual ideas and connecting them in new ways in order to generate a concept that has the potential for value.

The value may be monetary or it might be lives saved, reduced incidents, etc. Sometimes you know how to measure your innovation, say a new material used to produce a product is half the price of the old so you can put immediate monetary value on the increased profit per unit.

Sometimes you have to invent the measure. When electricity was discovered there was not a measure of 'volts' waiting out there. "Ah, I have invented electricity. Let me see how many volts it is!" Electricity was so new it also needed a new measure to be invented.

The laser was an accident that nobody knew what to do with which seems hard to believe now. Never the less it had no obvious value when it was invented. Easy to measure a value now.

1.3.4 Commercialisation

Commercialisation is the process of identifying and realising the value of the innovation. Without commercialisation creative problem solving is pointless. By commercialisation, as I have hinted above, I do not mean profit necessarily. If you are in a profit centre then it may mean profit. Equally you may be interested in saving lives, reducing accidents, becoming healthier, etc.

1.4 Creative Problem Solving is everywhere

Creative problem solving is a process that is applicable anywhere for anyone who wants to think about the world in new ways in order to invent and implement something new that has a value for them.

There are no limits to the places where creative problem solving might be useful. Innovation tends to be connected with technology in many societies. Currently in the UK the Technology Strategy Board manages a large part of the government money allocated to innovation, for example. Ask any organisation what they are doing about innovation and the majority of the responses relate to technology. Take a look at the innovation activity in the National Health Service in the UK and most of it relates to innovation.

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This is another myth to 'debunk'. As the definitions above suggest, creativity, innovation and commercialisation are vital to the survival of any situation anywhere. The work is a place of continual change and unless people are able to change, using creative problem solving as a way to invent the change, then they will get left behind, which leads us nicely to looking at the **context, climate and framing** needed to raise the odds of successful creative problem solving.

Structure of the book

This book introduces an overview of the world of innovation. Context, climate and framing for innovation are explored. The paradox of structure is introduced followed by a description of the roles that are important in creative problem solving. Behaviours to promote creativity are described and finally you are walked through a creative problem solving meeting.

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2 The context for creative problem solving

In order to use creative problem solving at all, never mind effectively it is important to be clear about the context in which people are required to work.

"*I would not give a fig for the simplicity this side of complexity, but I would give my life for the simplicity on the other side of complexity*"

This quote is attributed to Oliver Wendell Holmes although there is some doubt about whether he actually said it. I suspect this is the truth of many quotes and it does not matter for the purposes that this and other quotes will be used from time to time I this book.

I wrote earlier that life is a messy business and the best we can hope for is to create some elements of order for us to personally survive. In order to raise the odds for personal survival and for our organisations to survive **everyone needs to respond and be innovative as the world around them changes**.

I base my model of creative problem solving on complexity theory, which as the name suggests is very simple. Complexity theory has its origins at the Santa Fe Institute where a diverse group of folk used to get together over coffee and chat about what they were all working on. They represented many disciplines covering technology, natural science, economics etc. Some of them began to notice commonality between what superficially appeared to be completely different bodies of knowledge and their insights were the beginnings of complexity theory.

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2.1 Out of complexity, simplicity

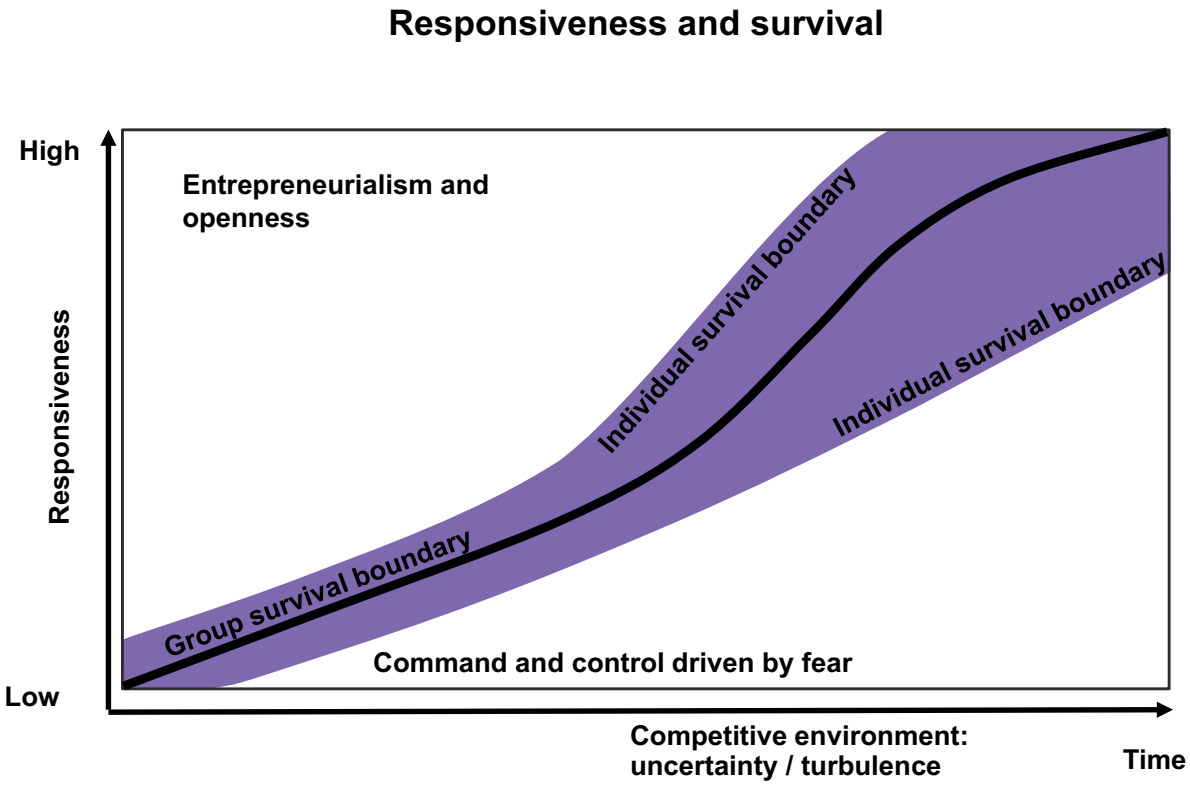
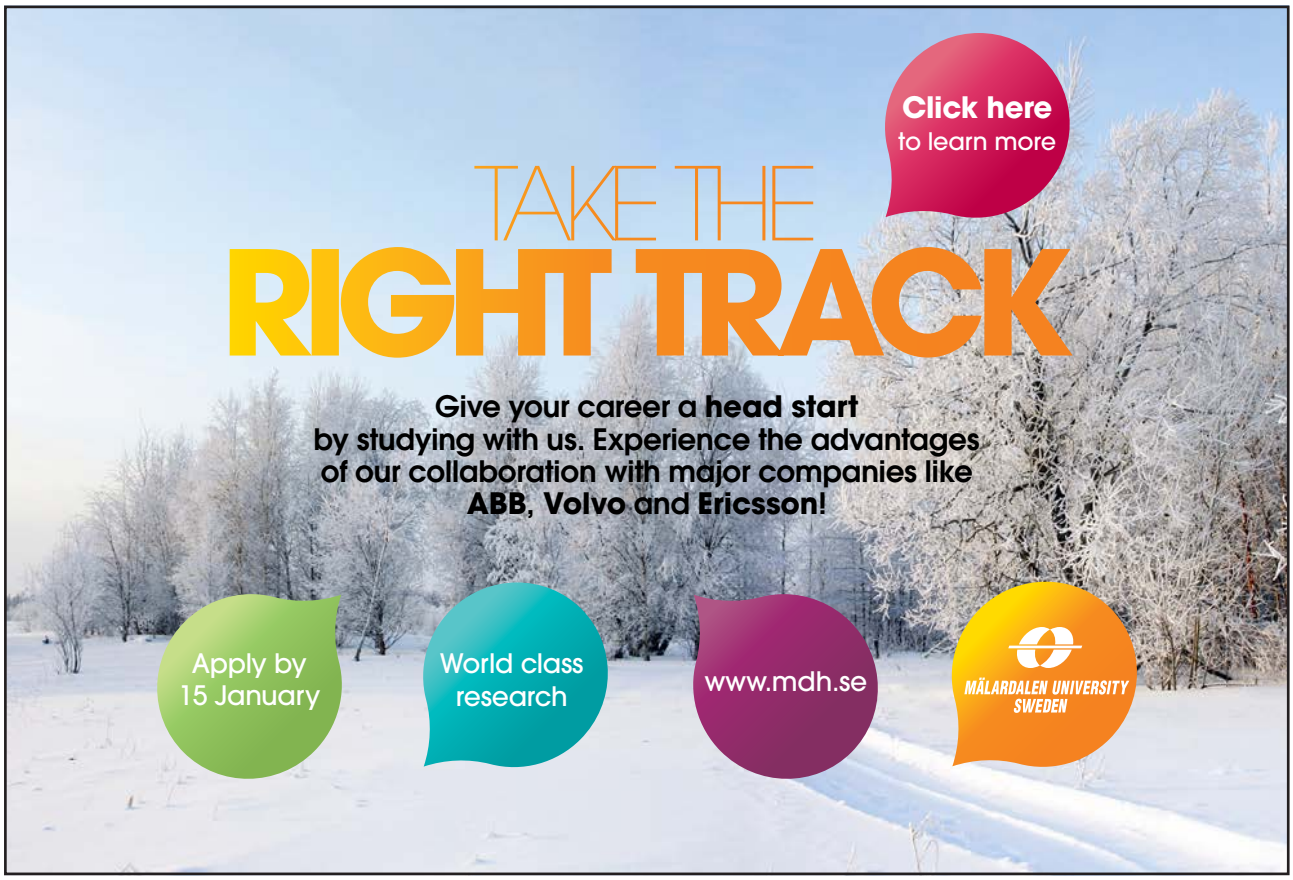


Fig 1 Responsiveness & Survival diagram



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Complexity theory describes 'adaptive stretch'. Systems are born, they grow, adapt to their surroundings in order to survive and die when they can no longer adapt and a new system takes over. Plants, people, computer systems, cars and businesses do it. Responsiveness and survival are fundamental to life and innovation is the process of responding.

Being responsive

In the figure above a group survival curve is shown. The vertical axis shows capability to be responsive. Low response organisations stick to what they know despite a changing world and often fail; the British motorcycle industry springs to mind as an example.

The world of IT is another area where businesses have to be responsive to survive. In the early days of personal computers IBM's reluctance to move from mainframes into personal computers had a serious impact on the company's financial performance. In another example, I worked in IT in a multinational in the 80s. A sales director asked for some analysis and 2 weeks later a systems analyst delivered a £100k costing and a 6 month lead time. Meanwhile, the sales director had been visited by an intern who had simply provided a spreadsheet to do the required job. The systems analyst just wasn't being responsive to what the business needed or to how technology was changing to meet those needs in a different way.

Not responding as the world moves along the horizontal axis of increasing competitiveness and uncertainty means falling off your curve. In organisations where process is king it can be hard to be responsive. Famously the Sony Walkman failed in market research because nobody wants a tape recorder that does not record. Neither the organisation nor the customer understood the product. The CEO told them just to launch it anyway and the rest is history. (So is the Walkman of course because that old world keeps on changing).

2.2 A complex world

At any point on the curve responsiveness to a change in the environment means staying in business. Individuals have a survival curve and it will be within the shaded area, close to the organisation, otherwise they would not have got the job. Many prefer staying in a comfort zone of what they know and fail to respond in order to stay on the curve. Human beings like things to make sense, to be able to understand complicated things. The problem is that the world is more than complicated, it is complex. I was told by a manufacturing colleague that a car plant is the most complicated manufacturing environment in the world. Clearly it is very complicated, but it can be understood and therefore predictions can be made. Complex systems cannot be understood.

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Complexity theory suggests the world is a messy place. Many of the systems we claim to understand are beyond our current understanding; the notions of leadership or organisational design are two examples. While we may know some things about leadership and organisational design we cannot claim to fully understand them as there is no right or finite definition of these terms. They are conceptual ideas and not a defined 'product' or 'system'.

Many fool themselves into tidying up complex ideas in order to create understanding and feel comfortable. This is an understandable reaction to a complex world when choices need to be made. The mistake is to take this line of thought too far and believe you know and have the right answer. The right answer rarely exists so learn to be comfortable with knowing you can only take your best guess based upon current information.

Much of what is discussed as fact or prediction is just a sophisticated guess, based upon a model which is derived from incomplete knowledge. Predicting the weather, traffic policy, climate change is all guesswork ultimately. It is not a reason not to do the modelling and make plans, just keep in mind that they are not the truth, simply our best effort for the moment. This is the framing that makes innovation OK, because all innovation is about 'not knowing' and instead exploring and finding out.

An HR director spent two hours detailing problems but met any suggestion to deal with these by saying: "We have to get alignment before proceeding." Eventually I persuaded her that while it's important to understand and acknowledge problems, one can only make progress by trying something new. By examining the results of new actions, one can then decide on ways to move forward and deal with problems. The director agreed to try something new and two years later a successful change programme was completed.

A director of talent from a major supermarket complained that it was impossible to motivate people as the board and executive teams were always changing. I reminded her that this was always going to be the case and she needed to find a new way to respond to that, or leave.

2.3 What to do?

Two separate flows of activity are necessary in order to survive today and survive tomorrow. While they are of equal importance and both need to be in place all of the time it is impossible and pointless to be in them simultaneously. This apparent paradox is illustrated below.

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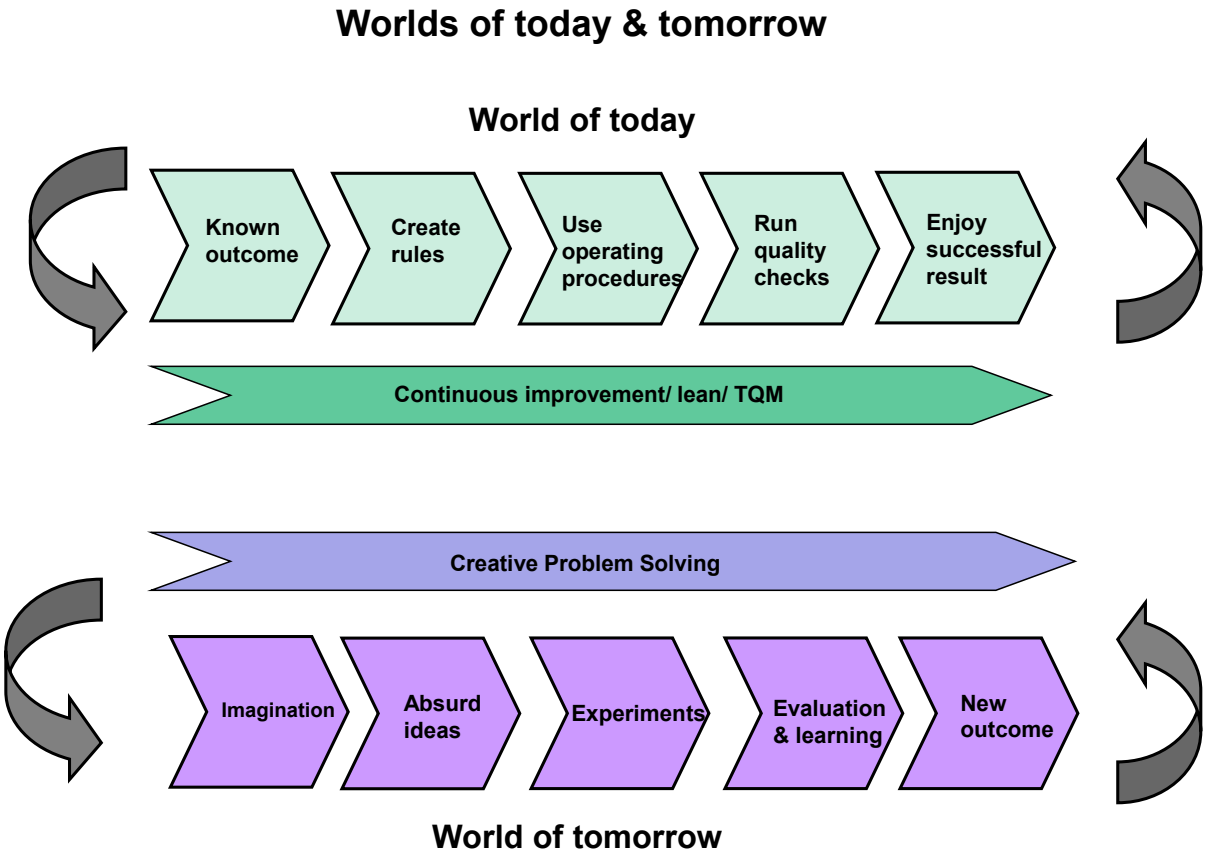

Fig 2 Worlds of Today and Tomorrow diagram

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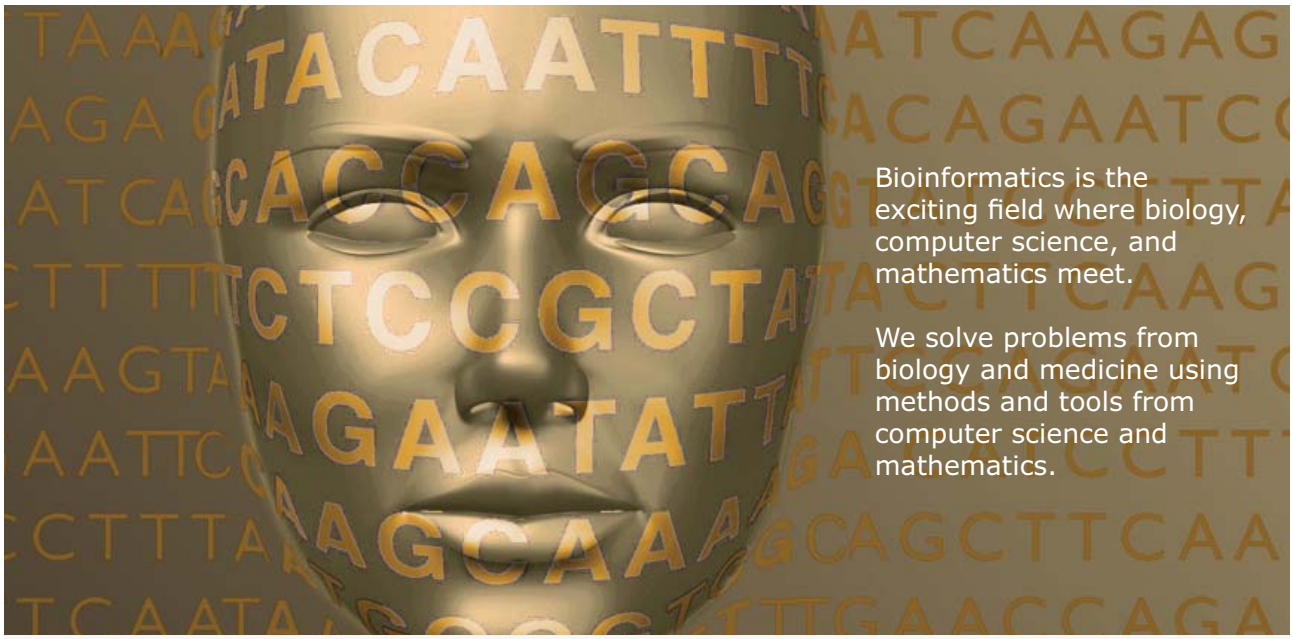

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2.3.1 Working for today

Much of our time is spent working for today and getting the job done. This is the world of 'right' and 'wrong' where you are expected to 'do it right' and constantly making the same mistake is punished. Quality programmes flourish in this world with slogans like 'Do it once, do it right' or 'Get it right first time'. This is a perfectly reasonable goal and expectation when 'right' is defined.

If I ask people what language and emotions they associate with this way of working I get answers like: routine, boredom, drudgery, safe, comfortable, predictable, 9 to 5, repetition. It is usually a negative connotation relative to the process of self-actualisation or achieving nirvana!

There is a real consequence to the organisation if people are allowed **only** to inhabit this space or are forced into it. They will fail to be responsive and ultimately so will the organisation. I spoke with a senior manager from one of the major banks who told me of some of their own research that they had carried out.

Their staff were so focused on day-to-day operations and so pressured that the majority of them were burnt out by the time they were in their late 20s. This meant they had no energy or motivation to innovate or move into new ways of working. Even more serious was that all their bank managers were created by internal promotion but not until they were at least 35.

The result was that just when they needed motivated and innovative managers to drive the business forward, they instead had burnt out executives who could only keep operating in the world they were familiar with. Hardly an auspicious picture for any business that needs to keep changing and innovating for continued success.

Working for today is about repetition. It is essential to have a way of knowing when to leave it behind for the world of tomorrow where you might find something new.

One of life's certainties is that whatever you are doing today that works and is successful won't be at some point in the future. This may happen in the short or long term and you may or may not be able to predict it. Continuing to do what you always do and expecting a different result is a definition of insanity! You will have to move into the world of tomorrow at some point.

2.3.2 Working for tomorrow

Some organisations move from working for today working for tomorrow because they know they will have to change and they start looking early on to stay ahead of the curve. 3M is well known for asking all R&D staff to spend 15% of their time 'playing' with ideas of which some lead to products it markets.

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Others only adopt innovations because they are pushed. As mentioned above, it took several years before IBM finally embraced PCs wholeheartedly.

If I ask people to give me words they connect with working for tomorrow I tend to get: exciting, risky, exploration, frightening, energising, rewarding. The opposite of those heard from the world of today and typically more upbeat.

This suggests that most people want to be innovative at least some of the time. If the organisation does not let this happen then you are losing potential and worse, boring your staff to death so that even day to day high performance is harder than it needs to be.

The worlds of today and tomorrow are contradictory, with different mind sets and different behaviours for very different purposes and you cannot usefully be in them simultaneously, although people try. You can only usefully be in one world at a time. The today world is vital to produce the success that fuels the future. The tomorrow world is vital to produce new ways to succeed that replace the old operational ways.

2.4 Creative problem solving know how

One of the reasons organisations fail to get into the world of tomorrow is because they don't know how to. In the world of today they know what to do, it is in the comfort zone and they can measure what they do so they get on with it.

Ask the same organisation to stop that and move into the tomorrow world and they can talk generalisations and process maps but as to what to do, no idea.

The organisations that do succeed in picking up a specific new way of operating, outside of their norm, often achieve huge success. All of the following are leadership and culture innovations.

One company sought to take over its market sector by employing marketing graduates with a track record of success from the likes of Unilever, Procter & Gamble, Coca-Cola and Mars Confectionery; they were able to do their job and everybody else's, and they tried to! The result was disastrous as the company ground to a halt as nobody could just get on and do their job without interference. The innovation was to get clarity about whose job it was and more importantly whose job it wasn't. They invested in a common creative problem solving programme so that they could bring everyone together with a common language to talk to each other. Then they did achieve the market dominance they planned.

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Another example of an organisation operating outside its norm was a large airport operator. They were an engineering company and made their money landing aircraft. Their innovation was to change the paradigm of how an airport operator made money. Instead of focusing on engineering, they focused on how to capitalise on the potential of their captive audience – the travellers waiting in the airport. The outcome was to turn themselves into a marketing company with a successful retail strategy. In 18 months they doubled their retail income, 6 months ahead of plan, and changed the way airport operators ran their businesses and earned their money. Part of the way they embedded innovation into the culture of the organisation was to train a cohort of 'continuous improvement facilitators' whose role was to facilitate creative problem solving meetings so that innovation and new thinking was easily developed.

A local authority needed a new corporate plan and, in a break with tradition, invited numerous groups to big meetings in order to get new perspectives. This included councillors, the public and employees. Before the meetings the local authority had thought the strategy should be focused on its older citizens. In contrast, insights gained from the group meetings showed that the older citizens were very clear the strategy had to be about young people. They believed that if the council's focus was on schools and facilities for young people then the locality started to look after itself and everyone benefited from an improved environment, lower crime and improved safety. By taking an innovative approach to developing its new strategy the local authority implemented something that had buy in from local people and met local needs much more effectively than in the past.

2.5 Keep the big picture in view

In order to survive both personally and organisationally it is essential that both individuals and organisations develop their capabilities to be responsive and flexible in the face of continuing change. The world of today is important to create the success and profit to fund the world of tomorrow that creates success in the future. Innovation is essential in all aspects of life be it technology, marketing, organisational, cultural, etc. Creative problem solving is the tool to invent new solutions in the world of tomorrow. Leadership underpins all successful innovation and is why we will now look at climate before moving on to look at framing.

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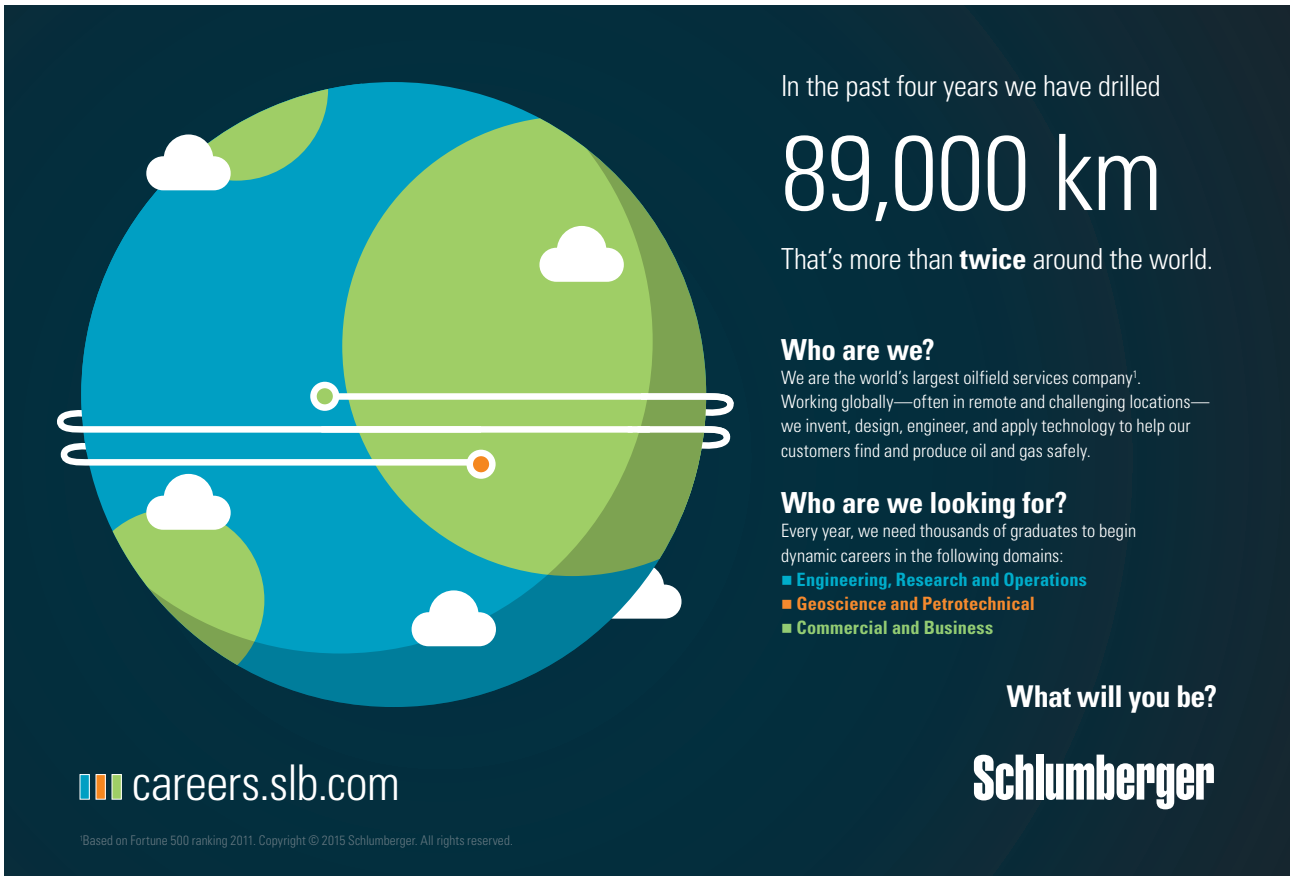
3 Climate – Trust and how it impacts on creative problem solving

If you live in a climate where your life is constantly under threat, you will spend much of your time and energy thinking about personal survival.

The levels of trust that we feel and experience will directly impact on our performance, in the world of today and more importantly in our capability and willingness to engage in the world of tomorrow.

The diagram below illustrates the importance of always striving for a high trust culture because this is vital if valuable energy and resources are to be made available for creative problem solving.



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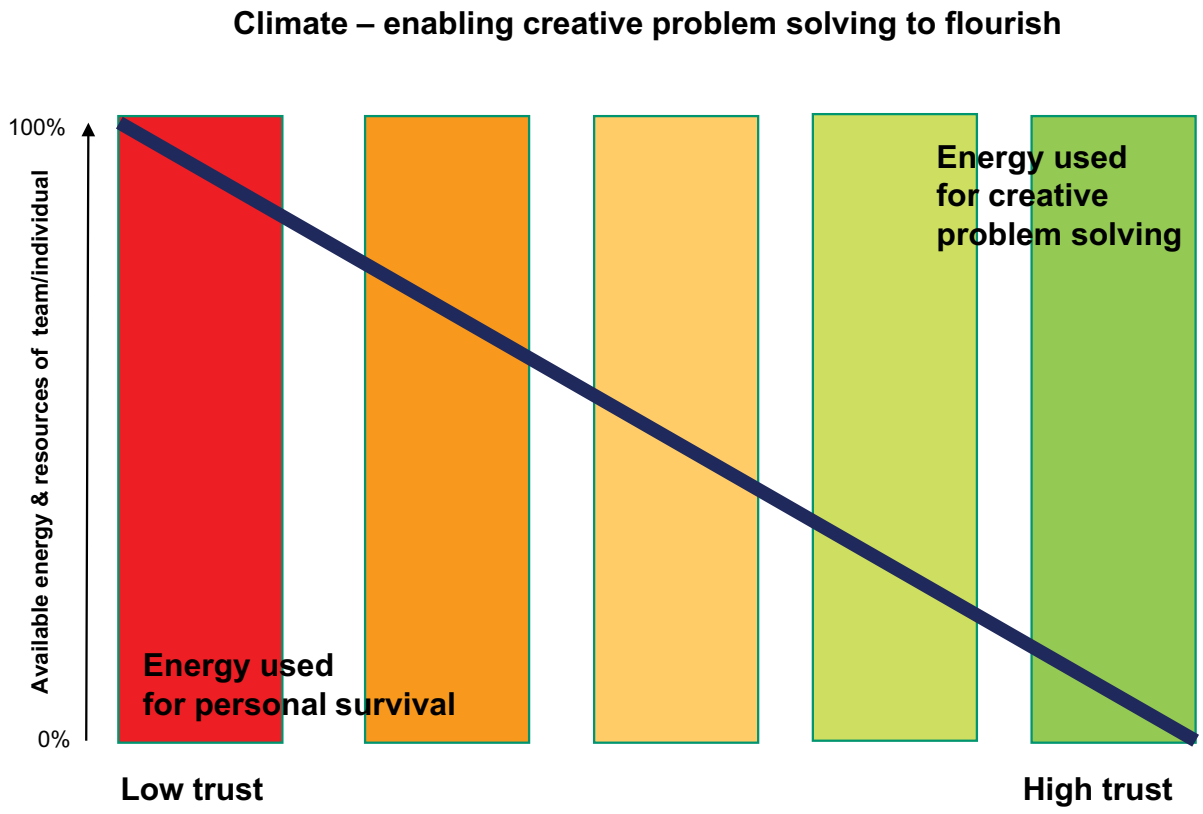

Fig 3 Trust energy diagram

An individual, or team, has an amount of energy to give to doing some work. When it is all gone you will fall over and sleep or die.

If you operate in an **adversarial** or **threatening** way, or if this is now people behave towards you, your energy, or that of the team, will be directed towards self-preservation.

Adversarial behaviour includes:

- pulling rank
- failing to pay attention or listen to others
- ignoring someone
- cross-examining opinions with challenging questions

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Threatening behaviour includes:

- discounting or putting down other people's opinions
- openly challenging ideas
- reacting negatively or cynically to other people's views
- preaching and moralizing
- anger and threats of violence

3.1 Field and climate, using your energy productively

The research on trust suggests that for every single trust reducing behaviour you will have to do five others to raise trust again. I think we all know intuitively that this is so. If someone does something that leads to you no longer trusting then as much will you ever really trust them again?

I think a personal relationship is the best example of this and the dynamic is no less true in an organisational context. The role of leadership is to foster a high trust environment so that organisational energy is used productively and there is energy left to work in the world of tomorrow after fighting the world of today.

A high trust environment is not a happy clappy place! It is a focused structured and disciplined place where roles are clear as is accountability and responsibility. Creativity and innovation need structure and discipline as well. It is a place where diversity and differences of opinions and ideas are valued and respected.

The open, childlike, playful mind needed for creative problem solving can only blossom when the need to defend yourself has been removed.

It is also a more pleasant place to be, for you and your colleagues. And you get more work done.

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4 Framing – how to think about the world to promote creative problem solving

When the worlds of today and tomorrow were introduced earlier the words and language that tend to be connected with these worlds was also described. If I ask someone about the world of tomorrow then 'risk' is often one of the first words I am given.

The capacity of an individual and an organisation to manage risk directly relates to the success of the creative problem solving capability.

You have probably read slogans developed for total quality programmes like:

'Do it once do it right''Right first time'

The same companies often say about themselves **'we are risk takers'**, and **'our employees are empowered to experiment with new ideas'** – providing they get it right first time of course!

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I know of a company that tried to spread all four of the messages above, usually in the same breath. They are contradictory and belong in different worlds.

In the **world of today** it is appropriate to expect people to perform a task correctly and to make a minimum of errors. It is about doing what we know, in a way we understand, for a predictable outcome.

It is impossible to enter **the world of tomorrow** unless you are able to **speculate, and experiment**.

Your mind set, i.e. your framing will influence how you behave.

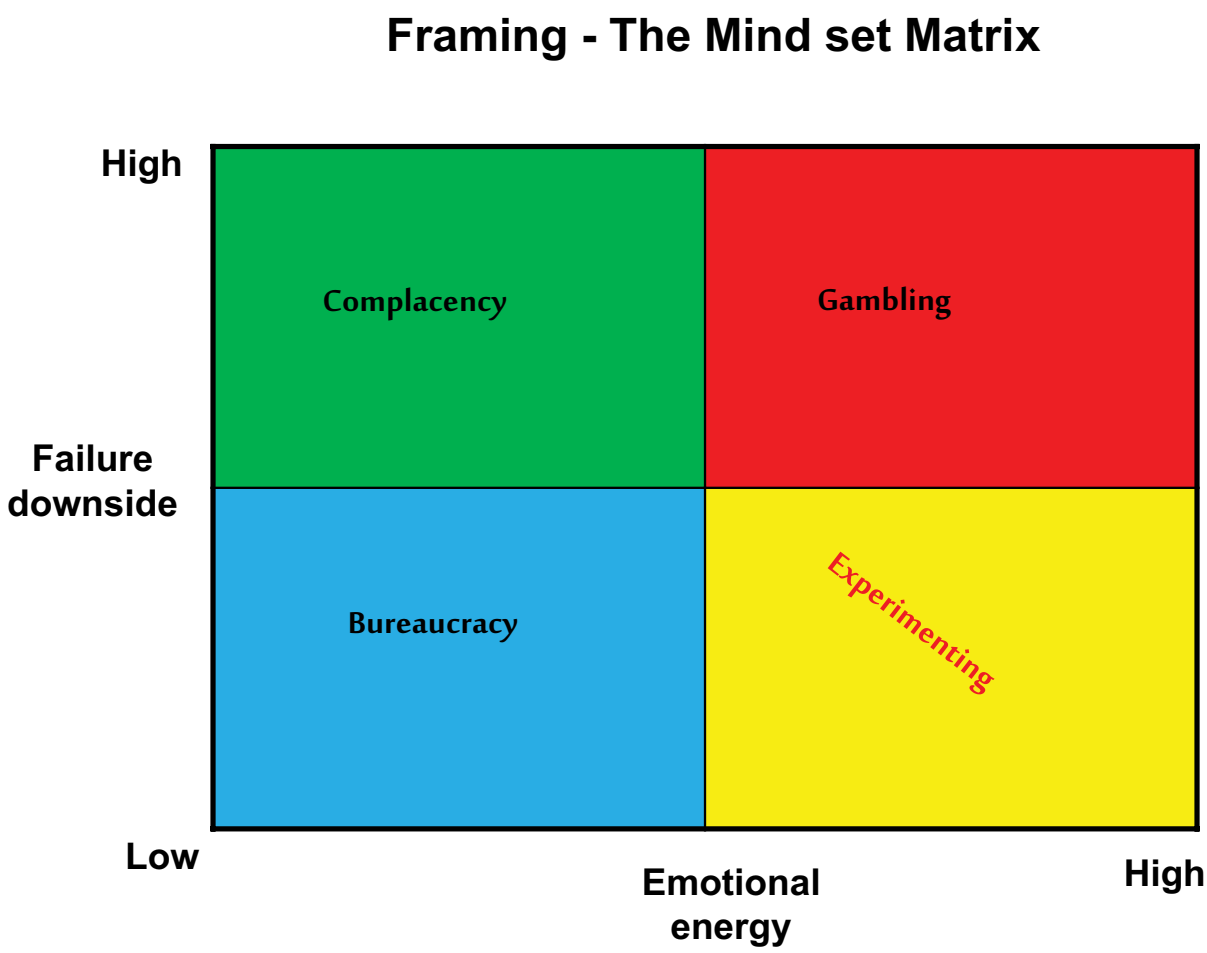

Fig 4 Mind Set matrix diagram

The diagram above describes **failure downside,** when it actually hurts if you fail. When jumping off a cliff there is a real risk you will get hurt when you hit the ground.

Emotional energy is the nervous feeling of excitement when you are not sure about an outcome, life stage fright.

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Gambling is a world where people take real risks and is not a safe place to be for creative problem solving as the consequences of failure are disastrous. The 2008 world financial crisis resulted from gambling. Gambling is exciting, therefore highly emotionally charged. Watch people at a horse race to see this so it is tempting to go there, best avoided.

Bureaucracy is a place where routine and rules are used to deliver a predictable result. The world is deliberately simplified ignoring variations and imaginations. There is nothing wrong with this when appropriate as it may be in the world of today, however, it tends to be an environment low in motivation and emotional energy. It is the absolute converse of what is needed to encourage creative problem solving. People operating in this place may be capable of great creative problem solving but you will need to motivate them and help them into a different mind-set before this.

Complacency is a world where people have their heads buried in the sand. This is possibly the most dangerous place to be. It feels safe, yet danger may lurk nearby. The entrepreneur, possibly an engineer with a successful new product he produces from his garage, may feel very successful. Although an excellent engineer, maybe his skills do not include finance, so he is not aware of growing receivables that are taking him towards bankruptcy. He is amazed when the bank manager arrives to foreclose on his mortgage.

Most industries fail because of complacency. In the UK a once great motorcycle industry was lost to overseas developing countries. In the USA the motor industry was lost in the same way. People who are complacent cannot see the need for creative problem solving as they lack the imagination to see what is happening, they have lost any capability to **respond in order to survive.**

Experimenting is where you need to be in order to use creative problem solving successfully. An experimenter is safe because he or she is minimizing the real risk of failure, and the excitement of learning and experimenting provides the energy and drive to continue.

If you set out to develop a new explosive it is best done in a test tube. The mistakes will be survivable.

Thomas Edison experimented with over 200 materials before finding the one that made a successful light bulb filament. James Dyson made over 200 experiments with his dual cyclone before going into production. All successful inventors experiment, new thinking is never 'right first time'

Experimenting grants permission to be wrong, because it is expected. If I suggest a course of action that you find hard to accept and suggest it will happen whatever others views it is likely you will fight me. If I suggest an experiment that we will review together after an agreed time I am more likely to get permission to proceed and you are more likely to support it.

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Experimentation as a framing also deals with some of the perceived financial risk. If I have £10M profit and plan to invest all of it in a new venture that is gambling. If I choose to invest £1M in my new venture knowing that I can afford to lose it that is an experiment.

This emphasizes the contradiction between the world of today and the world of tomorrow. Establishing this context, considering the climate and finally the framing within which you think about the world are essential precursors to successful creative problem solving.

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5 A paradox – Structured creative problem solving

It is a myth to believe that creativity and innovation flourishes best in an unstructured environment and by working in unstructured ways. I think the myth arose because many stories of 'eureka' moments arise from times when people are distracted. Distraction can certainly breed creativity and I will return to this later as it has an important part to play in the mix, but does not change the need for structure.

I once visited a company who asked for help to become more creative. They were convinced the only way to organise was to have no structure at all and they took this to extreme lengths with no job titles, no office hours, no nothing really! Nothing I could say was going to change anything. They organised for chaos and chaos is what they got.

You read earlier about the world of today and how important structure is. Without predictability it is hard to make progress and therefore profit, which they didn't and they no longer exist.

The paradox is that to free up people to think differently and to be able to use this new thinking to ultimately create something new that has value a robust process structure is needed in the world of tomorrow as well.

Albert Einstein talked about *'imagination being more important than knowledge'* and also said *'…if at first the idea is not truly absurd then there is no hope for it'*. Walt Disney described his strategy for creativity as having a *'dreamer, realist and critic.'* He is supposed to have created this both physically and metaphorically. The dreamer room was a light, large airy space to give a feeling of joy and freedom. The realist's room was more organised so that people could feel focused. The critic's room was a cupboard under the stairs because it is important not to be over critical over people's dreams.

Both of these famously creative people are recognising a common theme that suggests the most appropriate structure for creative problem solving.

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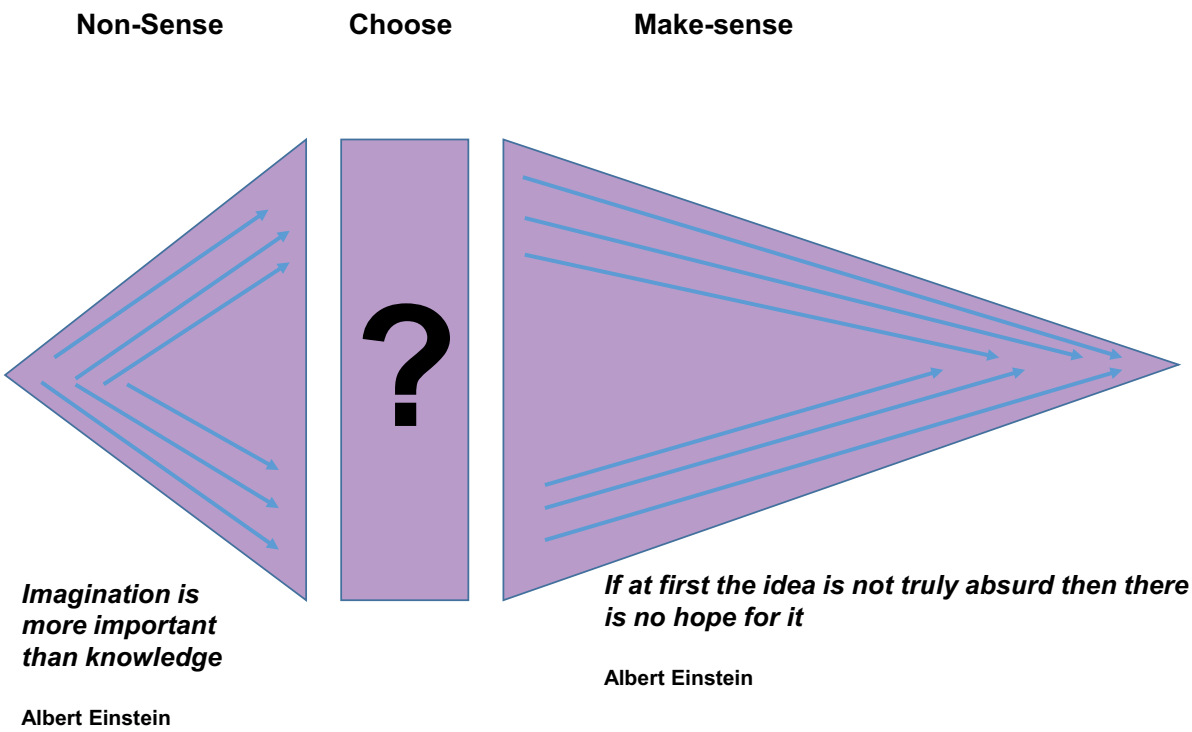

Fig 5 creative problem solving structure diagram

All creative problem solving goes through the same cycle of events and you will see this if you Google creative problem solving and look at the variety of models. In the beginning it is essential to use your imagination to dream. This often generates non-sense considered in the context of the world of today, but it is the essential first step.

When man learned to fly, like the birds it was only because someone had imagined it first. The birds had been flying around for millions of years and not until someone imagined the possibility of flying like the birds was it possible to have an idea. You have to have imagined the possibility in order to have an idea that might lead you to an answer.

Having imagined some non-sensical possibility you then have to decide which path to follow, in order that you can then create ideas and run experiments to see if you can achieve your dream, i.e. make-sense from your non-sense.

Take any group of people and put them in a room and ask them to do some creative problem solving and I guarantee the following will happen.

Firstly they will want to talk about the agenda for the meeting and terms like 'brainstorming', 'six hats', etc. will be bandied about.

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Secondly the group will start discussing what the problem is. Many questions will be asked and the group becomes more and more confused and frustrated.

Thirdly some form of organisation may appear, someone may take on ownership of the problem and some initial ideas may be generated.

Quickly the fourth phase begins where people begin evaluating the ideas in a random way, asking more questions that often lead away from the purpose of the meeting.

While this is happening a percentage of the meeting will talk a lot, interrupt one another and others will remain silent and take no part in proceedings.

You may feel this is unduly cynical but it is something I have watched happen many times. It happens because of reason I described right back in the introduction. Ask people what they do in order to be creative and run a creative problem solving meeting and they don't know except in a rather vague way that cannot be described and therefore cannot be replicated.

As with most things in life, communication and progress is more easily achieved if everyone speaks a common language and has an agreement to work in a common way. Creative problem solving is no different.

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Earlier I wrote about a major snack food company that began with a number of small factories they had acquired. They developed an audacious strategy to take over the snack food market. In order to do this they employed the best young graduates in sales and marketing from a range of major multinationals in the food and consumer product sector. All of these people were highly intelligent with wonderful CV's, aged 27–34 years old.

They duly arrived at the new company, each with their own different way of working, and tried to do their job their way and everybody else's as well as they knew best. 6 months later the company had all but ground to a halt.

Two things needed to happen.

Firstly people needed to be clear about whose job it was, (more about roles in the next chapter), and possibly more importantly whose job it wasn't. People needed to be allowed to do their own without help, (interference), unless asked for.

Secondly they needed a common language and approach to working together so that their diverse experience could be shared in a constructive way to generate a new way of operating.

Once both of these were in place they did successfully taker over the snack food market.

This demonstrates an important aspect of creative problem solving. It can be taught and learned, which again seems paradoxical. I said in the introduction that there is nothing new in this book. Everything described has been happening for many years. After all people having been inventing things for a long time.

The trick is to become aware of the critical elements and behaviours that promote creative problem solving so that you can craft and share your skills. This means you can plan and run designed meetings that have flow, rather than some unfocussed and random discussion that might lead to a good new idea. You still cannot guarantee successful invention but you can raise the odds considerably.

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6 The players – roles and responsibilities

You will notice if you reflect upon innovation over the ages that typically one name is associated with the invention, only rarely is it more than one. Of course, the inventors usually work with other people in order to take the idea to market and I referred earlier to my definitions where I described creativity as an individual process and innovation as a group process.

Clarity of role and the responsibility that accompanies it is an important consideration when organising for successful creative problem solving. In my earlier example of the snack food company that ultimately succeeded following earlier calamitous episodes it was the lack of role clarity that led to the initial performance failures.

Edgar Schein coined the expression **process consultation** in the late '60s. The idea arose from a clinical process originally where he identified the process of working with a patient and facilitating them towards a successful result.

In the business and organisational context this became process consultation where a facilitator helps a client to obtain an outcome. The idea of process consultation differentiated this form of consultation from 'expert' consultation where the consultant gives the client the answer. In process consultation the consultant, 'facilitator', helps the client to identify their own answer.

The rationale for the approach is that there will be more buy in and commitment from the client because it is their own invention and as they know how they derived the answer they will also be able to develop it and modify it in the future.

6.1 Three roles – client, facilitator, supporter

6.1.1 Client

The client is the owner of the problem, task, issue or project that is being considered.

They:

- Are accountable for making a decision and implementing a solution
- Give direction to meetings as it belongs to them
- Participate in the process of giving ideas

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6.1.2 Facilitator

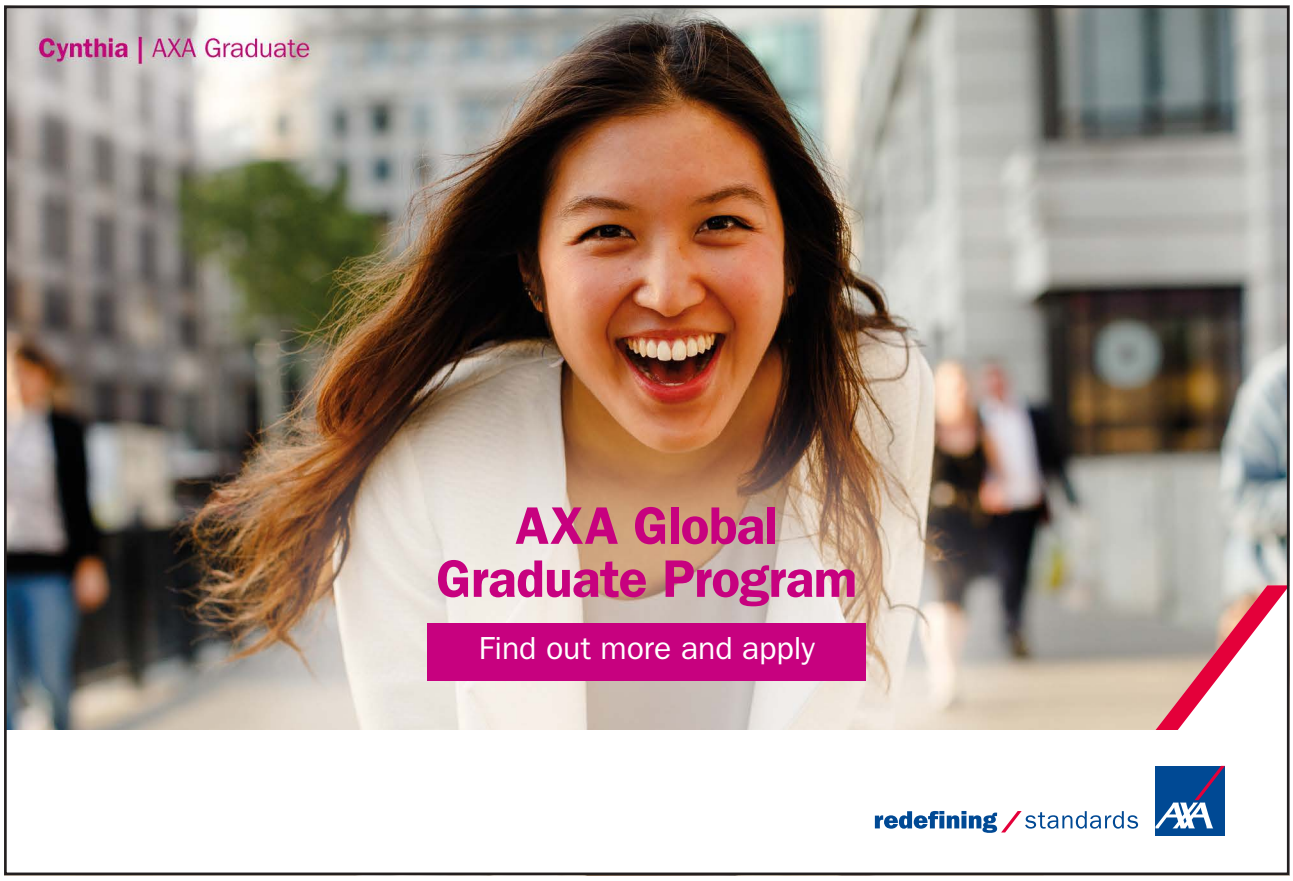
The facilitator is analogous to the referee in a game of football, facilitates the flow of the game but never kicks the ball or scores the goals. Process facilitation, from process consultation, is the activity of remaining outside the content of the meeting so that the players can participate in the meeting.

The facilitator is responsible for:

- Agreeing the purpose of the meeting with the client and ensuring this is achieved
- Designing the process plan for the meeting
- Managing the climate and communication within the meeting

To continue the referee analogy; Give school children a ball and get them to kick it around and they really do not need a referee. Put two international football teams on a field and without a strong referee they are unlikely to get through the game.

Football is pretty simple compared to the difficult and often confusing meetings that are typified by a creative problem solving meeting.



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6.1.3 Supporter

The supporters are the rest of the players in the meeting.

The supporters are there to give the client ideas and opinions when required, to help the client develop their thinking towards some possible outcomes and then to stay out of the way when it is time for the client to decide.

When this approach is suggested some people query it suggesting that a more democratic process will be more collaborative. My response is that actually single ownership is the reality for nearly all organisational decision making. Individuals are given accountability, not groups. When a group suggest otherwise my response is to ask who gets fired when a particular situation goes wrong and usually only one hand is in the air. The role split described here merely formalises this in advance.

It is a great freedom to have no responsibility in a creative problem solving meeting and helps to release creativity because you do not have to be accountable for your idea or to concern yourself if it does not work.

Supporters come in a range of guises:

6.1.3.1 Expert

The expert clearly has some value as their expertise means they have knowledge of the problem area. However, this can be their biggest weakness as their expertise often channels their thinking and limits their capacity to imagine something new as they 'know' it is impossible.

6.1.3.2 Non-expert

The non-expert has a great strength in that they do not know what is impossible and the naivety of their ideas leads to the new way of thinking about the problem that becomes the path to the solution. When trying to finalise a solution their naivety may become a weakness, but that is when experts come back in to play.

6.1.3.3 Implementer

The implementer is in the group because they will have to take action on the client's decisions. They are more likely to have the commitment to do this if they are part of the solution and have seen their ideas being taken into account as the solution is formed. They will also be able to make useful judgements on how to continue as the initial results are observed through their knowledge of what is behind the answer.

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6.1.3.4 Saboteur

The saboteur is often ignored in the early stages of a project and the creative problem solving meetings that develop the new ideas, because they are always negative, for example. A saboteur may be a production person who has to produce a new marketing or sales idea. It may be the health and safety person who wants it to be safe. It is cheaper, quicker, and ultimately less hassle to involve the saboteur early on as they will then become a part of the solution and will help you implement it. You will have to deal with potential saboteurs at some point so the earlier you include them the better, even though the temptation is to hope they will go away!

6.1.3.5 Stakeholder

Stakeholders are often people who are more senior than the client in the formal organisation, outside of the creative problem solving process where hierarchies do not apply. They can usefully become a part of the creative problem solving meeting as they are then fully bought in to the solution and are better equipped to fight off nay-sayers from other parts of the organisation. It is important that in the creative problem solving meeting they defer to the client and remain in their role of supporter.

The stakeholder has a key role to protect the client, who is working in the 'world of tomorrow' from the bears working in the 'world of today' so that new thinking has a chance to breathe and develop life and resilience.

6.1.3.6 Backer

Backers are people from other parts of the organisation that need to support the results for it to stand any chance of being implemented. For example, if something will need cash then a finance person might be included so that they are part of the solution and understand the consequences.

If people issues are likely to arise you might include someone from HR.

The thing about supporters is that they can all have ideas even if they have no content knowledge, using their naivety to be useful as already described.

When constructing a group you are looking to maximise the diversity of mind sets in order to raise the probability of new thinking while also keeping a weather eye on the need to ease implementation.

Creative problem solving groups are 8–10 people, no more than 12. This number, when working well will take all the available time. If the group is larger people are unable to participate fully and get bored or frustrated.

The numbers are simple. Put 60 people in a room for an hour and you each have 1 minute to speak and 59 minutes to listen. Very few people would find that satisfactory. Put 6 people in a room for 60 minutes and you have 10 minutes to speak and 50 minutes to listen.

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7 Behaviour to encourage ideas

There is a very close link between what we are thinking, the words that we use, how we say things, how we behave and the results that arise that we then have to respond to.

Cognitive psychology, cognitive behaviour therapy, counselling and more all explore these issues in their various ways and often it is hard to tease out what this means in terms of what is useful behaviour when considering creative problem solving.

Successful creative problem solving means having ideas, expressing them, creating patterns, evaluating results and finally deciding to act.

How do we have ideas in the first place? What is the best way to express it? How do I decide if it is any good? How do I make sense of it? How do I measure it?

7.1 Ground rules

Meetings are more easily constructed if an agreed set of ground rules for behaviour are in place. Here are a set to get you started and feel free to invent your own. Following these I will explain the background to the rules.

- **Listen to your inner voice**
- **Speak from your inner voice**
- **Suspend judgement and look for positive intention**
- **Explore the meaning behind questions**
- **Imagine first**
- **Use curiosity to choose**
- **Make sense slowly**
- **Stick to your role**
- **Share the air time**
- **Take action – experiment**

7.2 The Meaning of Life

NLP, (Neuro-linguistic programming), has a very simple and useful model that captures what it is useful to know in order to choose a set of behaviours that will maximise your success as a creative problem solver.

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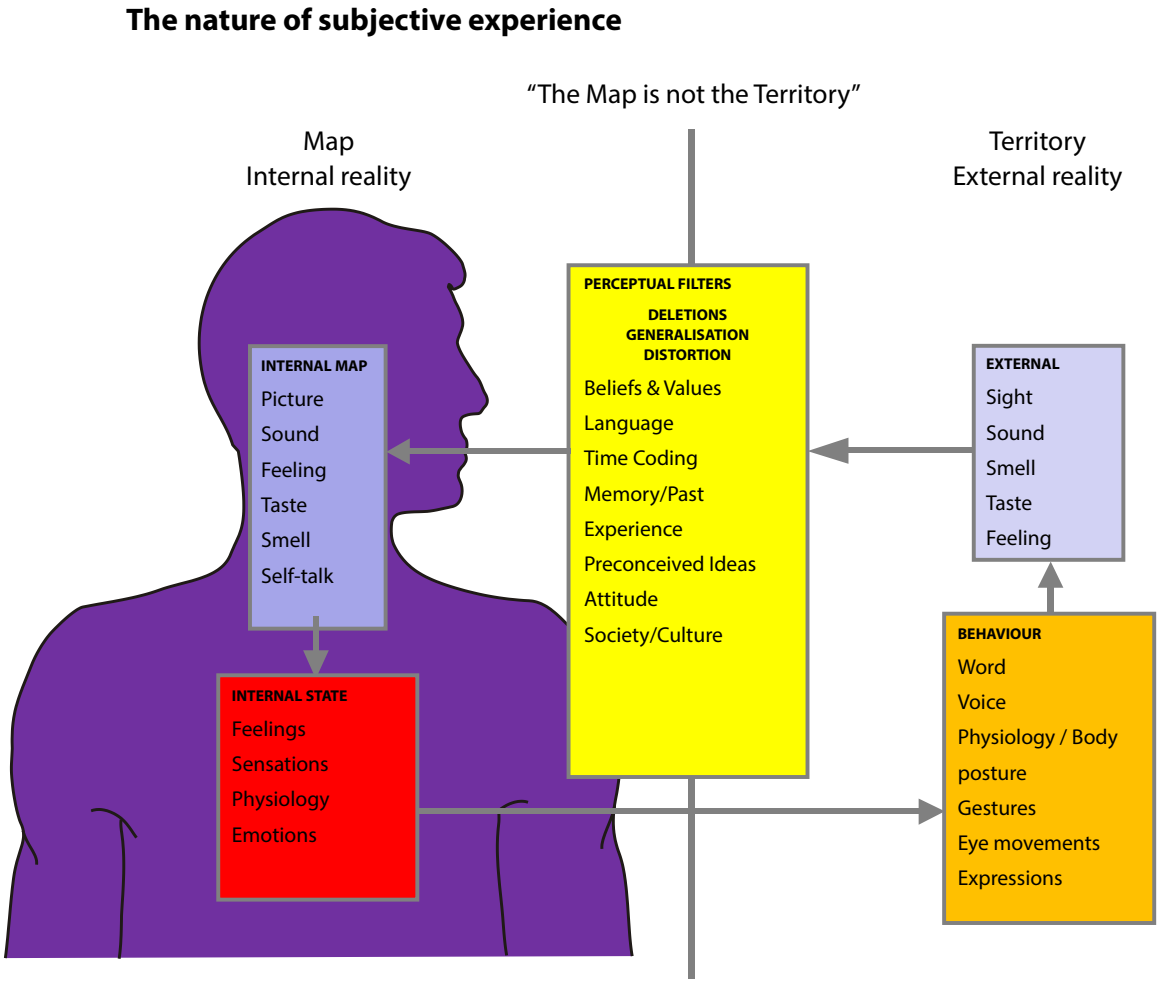

Fig 6 The nature of subjective experience diagram

On the face of it the world is a messy and complex place. There are all manner of signals being fired at us in order to stimulate our brain and if we tried to consciously acknowledge and process them all we would go insane. Therefore we survive by only dealing with those signals that matter to us and in order to simplify matters we collect these signals as a series of 'maps' or 'labels' that we use to deal with the world of today.

It is called the 'surface level of life' and when dealing with the world that we know and understand it is a very convenient way to operate. When you see a car you know it is a car, you do not have to work it out for every occurrence of a car in your life.

We experience the world though our five senses. We see, hear, feel, smell and taste the external world and in order to make sense of this we use 'perceptual filters' developed by the process of growing up and experiencing the world to create and store our maps. We learn what is good or evil, what is sensible or stupid, what is possible or impossible, what is safe or dangerous etc.

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Based upon our experience and the map that we connect it to our body will react, called an internal state, and we experience a feeling, anger, pleasure, fear, excitement etc. We then behave in response to this in order to continue our ongoing challenge of survival.

This is a recurring process that we cannot stop but we can learn to control. You may have heard about 'emotional intelligence'? In simple terms emotional intelligence is the process of learning to manage your internal state and the behavioural response that you make.

A trance inducing statement that I sometimes display in seminars is:

You cannot not communicate, you cannot not influence!

Someone tried to argue with me about this once and I asked him what he was doing as he argued. He paused and suddenly got the point!

So what has this got to do with creative problem solving?

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7.3 Listen to your inner voice.

The process of listening to the world and responding to it is a creative process. We have ideas by making connections between separate pieces of information and turning these into concepts or 'maps'. In the world of today we are working with tried and tested maps that we use to continue operating at the surface level of life so that we get predictability. This was discussed earlier when I introduced the world of today.

There is a 'deep level' of life which is your subconscious and the place where ideas are formed. Everyone has a capacity to be creative because you can choose to notice what you are experiencing from the external world and use your imagination in order to make new connections and invent different maps. Your subconscious does this naturally and the most common experience is dreaming when all sorts of often very odd ideas and fantasies are constructed.

This same process occurs in your conscious life and people who are labelled creative are the ones who take the time or learn to pay attention to this 'inner voice' and listen for ideas.

Our brains are incredibly active pattern making, therefore idea generating, machines. When you are in a meeting the conversation is running at a rate of 100–120 words a minute which is a typical rate of speaking. As only one person is speaking at a time, (well mainly anyway!), then the rest of the meeting must be listening, either to the speaker or they are in a daydream listening to themselves.

The brain works at a rate of 1200 words a minute so in a typical meeting, while someone is speaking there is a fantastic opportunity to listen to your inner voice and acknowledge what it is telling you, maybe by writing down the odd words, phrases and images that come to mind.

You may have noticed that despite planning to 'pay attention' to the speaker often you will find you have quickly drifted off into your own thoughts prompted by something the speaker said. Research suggests our capacity to fully pay attention only lasts for 5–10 seconds, no matter how interested we are in the content.

I notice this effect whenever I watch and listen to the weather forecast on the television. I plan to pay attention so that I have stored the forecasts for the week in my mind and at some point I realise I drifted off to think about what I will be doing and have failed to notice the particular day I wanted at all!

This process of 'listening to your inner voice for ideas' is a natural activity known to all children who were kept in detention after class or had the chalk or board rubber thrown at them. This is why children are so good at playing games and making up imaginary worlds. They use their natural talent to listen to their inner thoughts and turn them into a 'reality', a game.

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We all did this as children and the education system squashed this capability in many cases by teaching us to listen to understand in order to learn knowledge. We demonstrated our skill with this by passing exams and becoming experts in various fields. This is a learned way of working that is important for surviving in the world of today.

In order to relearn how to become good at creative problem solving in the world of tomorrow celebrate your natural capacity to 'not pay attention' and become childlike again. (Not childish)

This is our first ground rule then, **listen to your inner voice.**

Some examples of this may be helpful. Sitting under an apple tree and considering the apple that fell on your head. Sitting in a bath and noticing the way the water rises – Eureka!

A client of mine was sat on a beach one day on holiday watching the surfers. He noticed for no particular reason that they all began on different ways but by the time they reached the beach they all appeared to be on the same wave. He pondered on this for no reason he could have explained at the time and when he returned to work to look at the problem of installing automatic packaging machinery on the end of a biscuit production line he had an idea.

The problem was that the biscuits came out of the oven all higgledy piggledy and the automatic packaging machinery needed nice straight rows. He made a connection with the surfers and developed a bed of opposing rollers that mimicked the effect of waves. As the biscuits travelled across the bed they lined up and the problem was solved.

Float glass is manufactured by floating molten glass on molten tin, a process that transformed the manufacture, quality, reliability and cost of glass. It was invented by a chap who was washing up one day and being rather bored began to play at making patterns with the grease on the surface of the water. Something spoke to him, his inner voice, and he recognised that this is what glass should look like. He experimented and the absurdity is that if you float molten glass on water you simply get a mess, a rather explosive one, but he followed his inner voice and curiosity and it led him to finally develop a major new manufacturing process.

The Human Genome programme began in a large pharmaceutical company with a group of research scientists who were pretending to be in the world of the wild-west, playing cowboys and indians basically. You will read about how you can harness, no pun intended, this process later. One of them began to talk about the way the waggon wheels in old cowboy movies looked as though they were turning backwards. Someone listened to their inner voice and began to explore the notion of splitting materials into constituent parts. This led to a new technology stream within the firm that in later years developed into the Human Genome programme.

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When you are in a creative problem solving meeting it is vital that you listen to your inner voice and record what it says to you. Often what it says makes no sense but it is a thought from your subconscious that has arisen for a reason. Often you are looking for a metaphor or analogy to explore. Sometimes the meaning is obvious, the 'eureka' moment, and more often it is not and you have to work with it. This process will be described later, for now focus on learning to hear your inner voice, trust it and write down whatever it tells you. **Listen to your inner voice.**

7.4 Speak from your inner voice.

People tend to speak with a lot of redundancy of words built in, they waffle and pontificate ad-nauseum and the listeners quickly drop out and stop paying attention, typically within 5–10 seconds as mentioned above. Many ideas are never heard because of this dynamic so a lot of potential creative connection making opportunities are lost.

Brainstorming attempts to overcome this by asking people to suspend judgement, actually an impossibility because language is a human construct and requires a judgement in itself to be able to choose words, however what you can do is **listen to your inner voice** and just talk about what comes to mind in the terms and words that occur to your conscious mind without concerning yourself about making sense. (This requires certain behaviours from the listener that will be described shortly).

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The issue of attention also needs to be addressed. You may have sat in brainstorming events that are rather boring because what you are listening to are a series of single word ideas without any sense of what is in the mind of the speaker.

The way to overcome this is to insist on all ideas being given as an initial short sentence that captures the imagination of the speaker, like a newspaper headline. As you read earlier language and the brain are closely connected and the words you use will change the chemistry in your brain and that of the listener so it is important to frame your ideas appropriately.

You will read more of this later but just to get you started, when in the imagination part of creative problem solving use language like, 'Imagine if…' or 'My dream is…' Walt Disney said "if you can dream it you can do it"!

Newspaper writing has a lot to help us with here. After the first headline sentence in an article you quickly get the first few sentences of background to the story as editors know well how quickly reader's attention wanders.

In the creative problem solving meeting we want our listener's attention to wander, or rather **wonder**, so following the headline idea the speaker should fill in one or two sentences that talks about the connections they are making. This stimulus and imagery, if all other players are **listening to their inner voice** will trigger new connections for the next idea. This is turbo charged connection making. **Speak from your inner voice.**

7.5 Suspend judgement and look for positive intention.

A typical ground rule in a brainstorm is to suspend judgement and as you read above this is impossible as choosing words is a judgement in itself. What you can do is acknowledge that what the speaker is saying and choose to assume a positive framing for what is said, even if it apparently is critical.

The NLP position on positive intention is that every response, words or behaviours, from an individual is positively intended for them. This does not condone 'bad' behaviour but it follows that if you can discover the positive intention then you often discover interesting, new and unusual connections and maps that form the basis of the innovation.

In the creative problem solving meeting a high trust open climate is essential as was described in one of the opening chapters. A common occurrence in many meetings is the 'cycle of revenge'.

Christian Fisher wrote the following about the cycle of revenge

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It seems that revenge is an inherent part of the human condition. In many ancient civilizations, such as Rome, Greece and Babylon, people believed in "an eye for an eye." Let's explore the Cycle of Revenge and the role it plays in everyday life.

The Cycle of Revenge has six phases. The first phase is atrocity. A person has wronged you in a way that is unforgiveable. The second phase is fear. You are now frightened of the person that wronged you. The third phase is sadness. You begin to fall into despair and wonder why the person would do this to you.

The fourth phase is anger. Day by day you become increasingly upset, wishing you could release all of the pent-up rage in your heart. The fifth phase is hatred. You can't take it anymore. You absolutely hate the person that wronged you. The final phase is revenge. You finally get even with the person, causing them as much pain as they caused you.

This cycle has appeared in literature, comic books, TV shows, cartoons and movies. No matter what form of media it appears in, the moral is always the same.

You will certainly have observed cycles of revenge in meetings. Someone criticises a person's idea. That person goes very quiet, waits until the critic says something and gets them back! In many organisations there are pairs of people who have an ongoing revenge cycle that they recommence whenever they are in the same room. Very entertaining it can be at times and an interesting alternative to work to go and watch, but potentially highly destructive, costly and damaging to creativity, openness and trust.

In the world of academia the cycle of revenge plays out when professor x and professor y meet at any conference and everyone knows they will begin to snipe at one another's papers and theories. Internationally it plays out between politicians. Who does not enjoy a Tom and Jerry cartoon?

Agree to hear ideas and evaluation positively, (more about evaluation later), and diversity, trust, creativity and novelty will be increased.

> *"The 'silly' question is the first intimation of some totally new development."*
> ***Alan North Whitehead***

Suspend judgement and look for positive intention.

7.6 Explore the meaning behind questions

NLP describes the 'precision model' or 'meta-model', sometimes called 'meta-murder' and therein lies the clue about why this ground rule is important for creative problem solving.

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The precision model is designed to help people clarify the meaning behind what is said and what is heard because lots of people are lazy with language and generally make lots of generalisations so many mistakes arise, often leading to confusion and conflict. (Before you write in the preceding is 'dry humour as well as being true!).

The precision model does the opposite of what we are trying to achieve in creative problem solving, which is to encourage people to **listen to their inner voice** and be comfortable to **speak from their inner voice** using approximation, imagination, analogy and metaphor.

The core language patterns are described below.

This includes the type of questions that can be helpful in order to get precision from **deletion**, **distortion** and **generalisation**. You will recall these are the filters we use to programme from the external world into our internal maps. Being on the receiving end can feel like an interrogation and become very adversarial.

Statement:	I am confused.
Question:	About what specifically?
	Where are you confused?
	When are you confused?
Statement:	I want to communicate better.

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Inés Aréizaga Esteva (Spain), 25 years old
Education: Chemical Engineer

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Question:	Better than what?
	What would be good enough?
Statement:	People just don't learn/listen.
Question:	What people specifically?
	Who specifically?
Statement:	I have difficulty in communicating.
Question:	How specifically are you communicating?
	What are you communicating specifically?
Statement:	I broke off the relationship.
Question:	How were you relating?
Statement:	Men should show emotions.
	People should take risks.
	People should be more creative.
Question:	What happens if they don't/aren't?
Statement:	I can't learn this material.
	We can't get senior managers out of the office for two days.
Question:	What stops you?
Statement:	If they knew the danger they would not take the risk.
Question:	How is it dangerous?
Statement:	The senior managers never listen to what we say.
Question:	Never? Has there never been a time when they listen?
Statement:	That film gives me the creeps.
Question:	How does it do that?
Statement:	That project worries me.
Question:	How does it worry you?
Statement:	They don't like being here.
Question:	How do you know they do not like being here?
Statement:	He's cool…he always wears purple.
Question:	How does wearing purple mean he's cool?
Statement:	It's wrong to interrupt.
Question:	Wrong according to whom?

You may have noticed some of these patterns are familiar to you. Possibly you will recall some memories from childhood, the way they were used on you by parents. If you are a parent, how many are you using now on your children? How often have you made remarks that are sweeping generalisations and could have been more meaningful? In the context of creative problem solving this is a trait to be encouraged, at least at the imagination stage. (In the world of today this trait leads may be associated with low performance, hence the contradiction between the two worlds.

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You will notice that the responses that work the precision model are mainly questions, and very direct ones at that. This is how the 'meta-murder' label came to be applied. Using the precision model can turn in to an interrogation leading to anger, frustration, fights, tears and reduced trust. All of this is the reverse of what we are seeking for a productive creative problem solving meeting.

When questions are asked they must have a thought or idea behind them. They must do otherwise how does one know what questions to ask? In the context of creative problem solving it is often better to stay naïve, referred to in roles earlier, make a mistake, and have a different and new idea.

If the questioner is allowed to keep exploring sometimes they decide their imagined ideas is silly and we never get to hear the idea. In truth, when creative problem solving it is impossible to know which ideas are useful and which are not until after the invention is complete and sensible. Before this point any ideas may be the trigger to new thinking, albeit absurd at the time. The stories described earlier demonstrate the truth of this. So I use this quote again:

> *"The 'silly' question is the first intimation of some totally new development."*
> ***Alan North Whitehead***

Therefore, in a creative problem solving meeting rather than answering questions I suggest you explore the thinking behind the question and ask for an idea triggered by that! **Explore the meaning behind questions. Think about being delightfully vague and encouraging others to be the same. Approximation is great way to make progress in the early stages of taking creativity to innovation.**

7.7 Imagine first

Earlier I wrote about Albert Einstein quoting "*Imagination is more important than knowledge*". I also referred to Walt Disney, "*If you can dream it you can do it*".

Here are some more.

"*Imagination is the highest kite you can fly*" ***Lauren Bacall***

"Problems cannot be solved by thinking within the framework in which the problems were first created" ***Albert Einstein***

"When a finger points to the moon the imbecile looks at the finger" ***Chinese proverb***

"*Everything that can be invented has been invented"* ***Charles H Duell*** *(Director of the US Patent Office in 1899 speaking on the reason for his resignation)*

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I also mentioned the Disney strategy of *'dreamer, realist and critic'* as an established root to innovation. Common to all creative problem solving processes is the recognition that everything begins with imagination, a dream or a wish that at that point will be impossible, probably get you fired and in earlier times maybe burned at the stake.

In order for something new to be created someone must first have imagined the possibility. Man can now fly like the birds. Well not exactly like the birds but we have some very efficient approximations.

For millions of years the birds flew around in the sky because that is what birds do. It needed someone to look up, acknowledge this capability and wish to be able to fly like the birds for the process of inventing a way to begin. Without the imagination to achieve the goal there is no basis upon which to have an idea to do so.

Often the dreamer is irritating, leaves from boredom or gets fired, but without them an organisation will gradually decline and ultimately fail. Nurture the dreamers and remember your own capability as a child to use your imagination. **Imagine first.**

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7.8 Use curiosity to choose

We have a lot to thank Albert Einstein for. He also said "*Curiosity has its own reason for existing*".

When you have finished imagining possibilities in your creative problem solving meeting you have then to decide what elements to choose to try and develop into a useful concept or solution. This is where the typical brainstorming session falls over.

In a brainstorm you may have several hundred ideas carefully recorded on flip charts. Someone nearly always suggests going through them all to tick all the 'good' ones, which must be old and known otherwise how can the judgement 'good' be applied? They also cross out the 'useless' ones because nobody understands them and they are rejected. These represent the new thinking and might have led to new ideas but they just been deleted. Someone then says, "We are not very creative are we?"

The problem here is that a rational selection process is being applied to irrational data, the results of imagination. Imagination is just that, not real, not rational, not meant to be. It is therefore ridiculous to use rational selection processes to choose. In the structure of creative problem solving imagination is used to create non-sense. You must then choose non-sense using a non-sense process. There is a process to follow this as you read earlier which is to make-sense, which will be described in a moment.

"*When choosing between two evils I always like to try the one I have never tried before*" ***Mae West***

"Discovery consists of looking at the same thing as everyone else and thinking something different" ***Albert Szent-Gyorgi***

"*And the trouble is if you do not risk anything you risk even more"* ***Erica Jong***

Curiosity is about noticing something about an imagined idea or dream that makes you feel, that is feel not think, that you would like to explore further and see what you find. So, how to choose?

I tell a story to try and explain the notion of selection based upon curiosity. Imagine walking along a beach as a child and you discover a shallow cave in the cliff. You walk in and begin to imagine being a castaway or a pirate and play a game, but it is only a shallow cave and the real world is still evident so you quickly lose interest.

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Continue walking along the beach and you find a deep cave that disappears into the cliff. You walk in and notice a dark tunnel going further and deeper into the cliff. You begin to follow it and the light fades, the temperature falls and a dankness is in the air, because caves are like that. You look behind you and notice the light and can remember the warmth of the sun. Then you return to looking at the tunnel and wonder if the pirates buried their treasure there and do you explore. It may lead to treasure, it may lead to nowhere, and it may lead to a hidden pit!

This is curiosity and it is why earlier I wrote about trust and resilience because it takes a brave person to be curious and follow their imagination.

"***Come to the edge***
We might fall
Come to the edge
It is too high
Come to the edge
And they came, and he pushed
And they flew

Christopher Logue

Use curiosity to choose

7.9 Make sense slowly

I have described the first part of the creative problem solving process as imagination, creating no-sense. What turns a brainstorm into a creative problem solving process is the selection based upon curiosity followed by the make-sense element of the meeting.

Albert Einstein, again, said "*If at first the idea is not absurd there is no hope for it*". Two elements of this sentence have relevance here. Absurdity is important because sensible ideas come from 'the world of today' and are rational and reasonable because we know they work. In 'the world of tomorrow' when following curiosity aroused by the imagination our early thinking and the ideas are likely to be experimental. As was described earlier, all new inventions are the result of often many experiments. Experiments based upon stupid, crazy, illegal, immoral thinking. Absurd ideas!

"*There is no such thing as a failed experiment, only experiments with unexpected outcomes*"
Buckminster Fuller

"*The opposite of creativity is cynicism*" ***Esa Saarinen***

"*The metaphor is probably the most fertile power possessed by men*" ***Ortega T. Gassett***

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"The greater the emphasis on perfection the further it recedes" ***Haridas Chaudhuri***

"Creativity is the ability to see relationships where none exist" ***Thomas Disch***

"Analysis kills spontaneity. The grain once ground into flour springs and germinates no more"
Henri Frederic Amiel

The common themes introduced by these quotes is the need to keep open to new thinking long enough for something new and useful to emerge. Evaluation is a necessary part of the process of creating sense from non-sense and it needs to be appropriate evaluation to allow the idea to blossom. Any fool can kill off a new idea!

Sometimes you have to invent the evaluation process, sometimes you just have to go on trust and observe the result and then work out what to measure. When electricity was identified as a new form of energy they did not have volts standing in the corner to measure it with, the methodology to calibrate it also had to be generated, (pun intended!).

The laser was an accident that had no useful purpose in the beginning, bizarre as that seems to us. Art Fry, the inventor of the Post-It note was looking for a way to mark his position in a valuable hymn book. A 'failed' experiment provided him with a suitable glue.

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Having created the Post-It note he took it to senior management as a great new product idea that was rejected. He manufactured a small batch and put them in the stationery cupboard. People saw them, took them and used them. When they ran out people asked for more but none were available. The rest is history.

When Sony invented the Walkman it failed in market research because nobody wanted a portable tape recorder that did not record only played. Mr Sony ignored the research and launched anyway. The rest is history.

"*Heavier than air flying machines are impossible*" ***Lord Kelvin*** *(President of The Royal Society 1885)*

When somebody says something is not feasible it merely means they lack the imagination to see how it might be possible, it does not mean that it is not feasible.

So how do you make sense slowly? I use a metaphor to describe this process which in itself uses metaphor, and analogy.

Think about creating a snowball. Each snowflake that you use is a unique and beautiful thing that will quickly melt if you clap your hands on it. In order to create a snowball you must at first very gently pat your snowflakes into an approximation of a snowball.

As the snowball grows you can become more robust with your movements and eventually you can roll it around on the ground, over objects and it will maintain its form. Conceptually your snowball has infinite size as you keep on adding snowflakes and the larger it gets and as the mass increases it will become very hard and robust indeed.

This is the process of invention, of taking the imagination, becoming curious and using ideas as snowflakes, adding then to your thought. Evaluating the outcome gently in the beginning. It is evaluation based upon curiosity and learning, what is interesting, what is useful, what works, not what is wrong.

The process of evaluation is one borrowed from 'Appreciative Enquiry' which is really a coaching methodology. It is important to look for the value in any idea because this is what you want to retain. If you do not acknowledge the value first then it will disappear in the barrage of criticism.

After exploring the value it is important to consider what else is needed to give the growing concept value. Recall earlier I wrote about how language changes the chemistry of the brain, so when evaluating rather than talking about what is wrong, what will not work, try instead giving feedback using language like, 'what it needs to do…' or 'it needs a way to…' or 'how to…' As this gets people thinking of possibility rather than barriers.

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In simple terms always be a glass half full person, never a glass half empty. **Make sense slowly.**

7.10 Stick to your role

Earlier I wrote about the paradox that creativity is released by using a disciplined process, quite the opposite view to that held by many. This also applies to roles. When I wrote about roles earlier I pointed out that in the 'world of today' there are hierarchies and seniorities that have a value for the place in which they are designed to fit.

However, any organisation is redundant on the day you define it when you go off into the 'world of tomorrow' and use creative problem solving in order to invent the future. The roles of client, facilitator and supporters sits outside of this. The false organisation is there for a particular purpose as you park the 'real' world for a while in order to agree to participate in a collaborative effort to break new ground.

I ran a session for a group of young managers recently who were having significant relationship problems within an extended and geographically remote team. The manager could not imagine them even getting in a single room for a day without serious behavioural consequences. I was asked if I felt I could facilitate such a group and get a productive outcome to which of course the answer was yes.

I constructed a process plan with my client and we ran the day. It was very successful. The stakeholder, a director, came into the room at the end of the day. His role as stakeholder was to allow the meeting to happen and free up the participants from their line managers so that the meeting could happen.

He walked into the room, all shaved head and tattoos so looking quite aggressive to these very junior staff, and began to quiz them on what had happened. He was being a director not a stakeholder and the transformation in the mood was immediate. The young managers talked about how they wanted to get together physically maybe three to four time a year as it helps so much to see and feel each other rather than rely on emails.

"I am not sure that is feasible he said…."

Welcome to your foot, let me lend you a gun with which to shoot yourself in it!!

The balance between a really energised, focused and creative meeting and a circular and pointless discussion is very slight. The facilitator has the job of keeping people in role and on process, but everyone can help. **Stick to your role.**

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7.11 Share the air time

This rule needs little explanation. Give everyone the same chance to participate. The facilitator is responsible, with the client for ensuring this happens, keeping the noisy ones focused on giving ideas with a clear headline followed by a sentence or two describing their thinking. Then shutting them up and encouraging quieter folk to do the same. **Share the air time.**

7.12 Take action – experiment

Again, this rule needs little explanation as most people are familiar with processes like the **smart** way of identifying an action. Make it **specific, measurable, actionable, relevant & time bound.**

These rules fit well with the creative problem solving mind set. In order for something to happen somebody needs to do something, i.e. the client who is accountable for taking specific experimental action within a specified time. It is reasonable to consider how you might decide whether the experiment is useful or less useful and the severity of the evaluation must depend upon what stage you are at on the journey from imagination to full scale implementation. **Take action – experiment.**

In the next chapter you will read about the preparation and running of a creative problem solving meeting one step at a time as a project flow.

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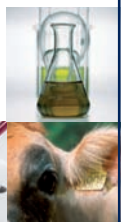

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8 A walk through a creative problem solving meeting

Life is fundamentally about creative problem solving. We are all doing it all of the time although we call it something else or nothing at all. Basically it is merely the process of wondering about a possible future and then getting together some ideas in order to achieve a new goal. This was how I introduced this book.

As such there is a recurring programme that you can run through your life, personal or organisational, that raises the probability of successfully inventing new solutions when needed.

This chapter takes you through a single run of the process and brings together all of the preceding chapters to give you a plan and a map to design and facilitate a successful creative problem solving meeting.

If you have a project that is bigger than one meeting then you will simply be running a recurring process or loop. As with all basic processes this is designed to give you a blueprint to follow to get you started and as you gain confidence and mastery of the tools and techniques you can flex this and introduce your own experiences and other tools to give you the results you desire.

Any creative problem solving session is a project. It has a beginning and an end with a goal that has been defined in advance. This is the simple definition of a project that any project management course will use. The intention is to introduce a flow that takes people through the common stages of any invention.

Earlier a simple model of the structure was introduced:

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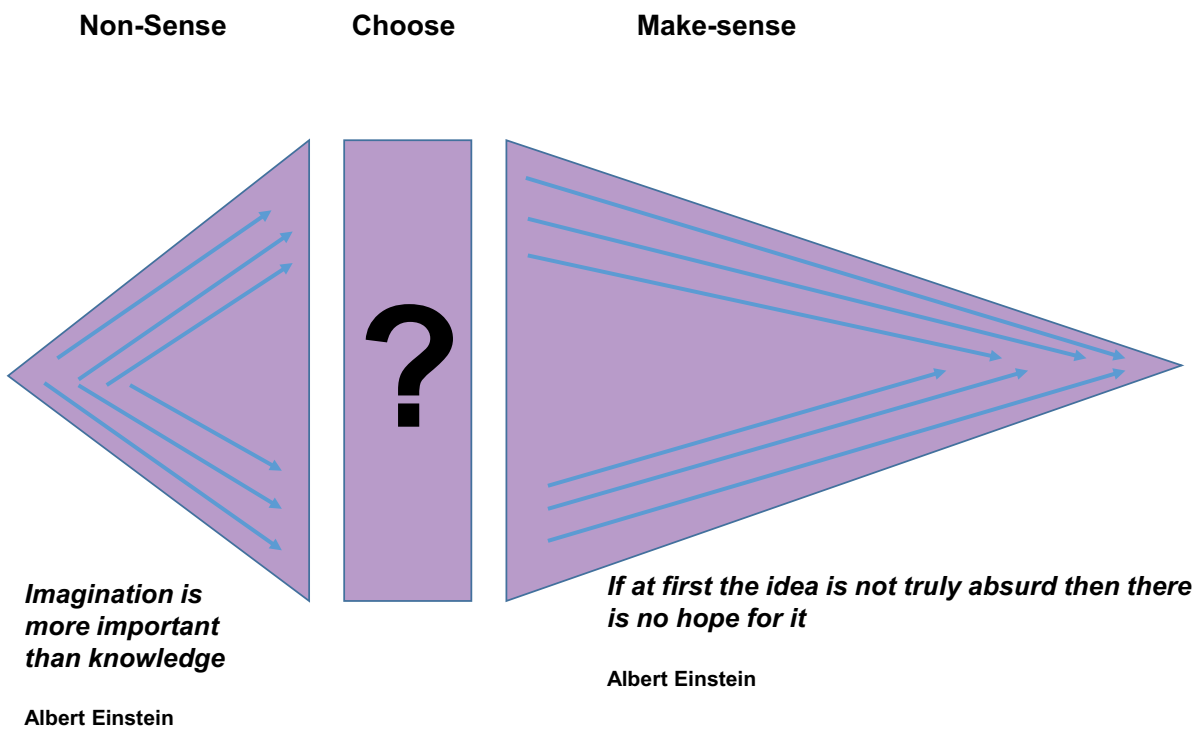

Fig 5 creative problem solving structure diagram

Now it is time to add some detail to this so that you have a generic plan of the essential steps for any creative problem solving meeting.

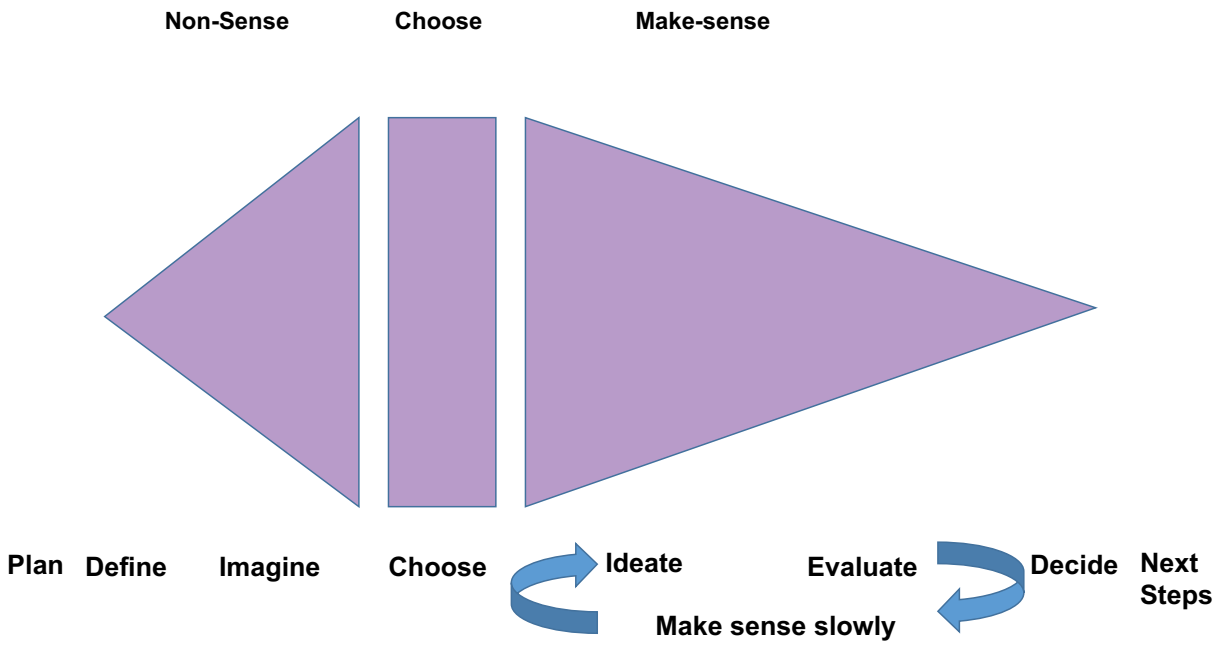

Fig 7 detail creative problem solving structure diagram

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This is a simple 8 step model that captures the basic creative problem solving flow that you will discover is common to all creative problem solving models, albeit the graphics and the labels may vary, but the underlying mind set and the flow is always the same.

8.1 Planning

It is essential to plan a creative problem solving meeting and it is the responsibility of the facilitator to develop a plan with the client so that:

- The task definition is clear
- The desired outcome can be defined
- The supporters can be identified
- The resources, like time, location, cost etc. can be agreed
- The process plan is created

The reason that creative problem solving is being used is because a client has a dream of a desired outcome that they do not know how to achieve. The desired outcome may be clear, like a new product, a brand stretch or identifying why a specific problem occurs. It is not uncommon for a client to have very little clarity about exactly what it is they want to solve beyond knowing there is an issue, but they do not know where to start. This is very common in organisations. Therefore a planning tool is needed that is primarily focused on helping the client get clarity about what they want to work on. Once this is known every other element of the plan can easily be put in place. Without this clarity no sensible plan can be created.

The first thing of course is to define who the client is and get both their agreement to play the role and the support of any stakeholders and the like that has to be in place for any further work to be done.

Once this is accomplished detail planning can be begun using a **chunking process**. Chunking is an NLP tool that is used for a range of goal setting activities. Chunking can be used to help an individual create their own life plan, sense of core purpose, vision and mission. Equally it can be used to accomplish the same for a major organisation that is inventing a new strategy. It is a very flexible tool.

Chunking works like this:

1. The facilitator asks the client for a beginning statement of the issue they wish to address, as a headline. I wish I could…, I need a way…, I wonder how to…, are all acceptable language framings as they define a sense of future and possibility.

   The answer might be, **"I wish I could double sales next year."**

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It is important to help the client relax into just stating whatever come to mind without agonising about whether or not it is 'right'. The whole point of the process is to recognise that we often know what the 'problem area' is without having specific clarity about where to start which is why we are running this planning process.

2. The facilitator writes down the answer, in the centre of a flip chart is a good place, and then asks the client, "If you had achieved this what issue would it have solved for you/the company?"
3. The answer might be, **"I need a way to ensure I contribute my part of the strategic plan."**
4. The facilitator writes down the answer, above the first answer, and then asks the client, "If you had achieved this what issue would it have solved for you/the company?"
5. The answer might be. **"I need to keep my job."**
6. The facilitator writes down the answer, above the second answer, and then asks the client, "If you had achieved this what issue would it have solved for you/the company?" This is chunking up and you can continue asking the question for as long as you both have the energy and the answers seem useful or interesting. You will gradually get bigger and bigger views of the issue. When you are ready to stop you then begin to chunk down.

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7. The facilitator says to the client, "Returning to the original statement, when you have solved this issue to your satisfaction what other benefits will you/the organisation have." These are smaller useful gains from solving the issue. The facilitator lists them under the original statement.
8. The answer might be, **"the company will remain profitable, we will stay ahead of the competition, I can avoid redundancies."**
9. The facilitator writes these down as a list and then asks the client to put turn these into sentences of possibility. The might become:

    I want the company to remain profitable
    I wish we could stay ahead of the competition
    How to avoid redundancies

    You have now chunked down and taken a smaller view of the issue

10. The facilitator asks the client, "What is stopping you solving that original issue, why have you not just done this?"
11. The answer might be, **"I keep getting hassled to decrease costs, I am on the road checking on the sales force most of the time."**
12. The facilitator writes these down at the bottom under the benefits and then asks the client to turn each statement into one of possibility. They might become:

    I really wish my directors would stop hassling me about costs
    I wish I could be trusted to look after the costs
    I need a way to get more strategic and stop chasing the sales team

    This is not a literal exercise, it is for the client to use and flex the answers so that they build up a useful set of perspectives around the task.

13. The facilitator then asks the client to reflect upon the list of statements and choose the one that seems like a good place to focus the meeting on. Notice you are not asking is it the 'right' place to start because you really may not know, but you can decide something feels like s good place to begin.

As a result of running this planning tool a number of things become clear. Firstly it will be clear whether or not you really have the client in the room. If the client keeps saying, "Well I'll have to check with my boss as I don't have any power to act on this", then they are not the client, the boss is and this needs to be dealt with first. Sometimes the client discovers that they know what to do next now that they are clear about the issue and you can either postpone the meeting or not have it at all.

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Finally you are now in a position to calculate a time and cost that should be assigned, create the group from the supporter, (see earlier chapter for types of supporter), fix the date and location and create the process plan.

The process plan will map out the detail of items 2-8 in the creative problem solving process.

8.2 Define

The definition stage is the beginning of the formal structured creative problem solving meeting. It should be preceded by the facilitator running a climate setter or ice breaker in order to get the participants focused and in an appropriate mind set.

This is important on any occasion as people are about to move from a 'world of today' to the 'world of tomorrow'. It is even more important if the creative problem solving meeting is scheduled within a normal working week and on normal working premises. People inevitably arrive with heads full of the 'world of today' and the climate setter is the activity to break people out of one mind set and into another.

The climate setter should be followed by the facilitator introducing the guidelines or ground rules for the meeting with an introduction to the basic creative problem solving structure, the language and the tools that will be used. It is no different to getting players together to play a game of football. Unless everyone is aware of and has agreed the roles and the rules of the game it is impossible to begin playing in any sensible and useful way.

After this the supporters are directed to begin listening with their inner voice and the client introduces the task for the meeting. This is done using a headline followed by some background to the issue, perhaps covering some of what has been considered before and I like to give the client a magic wand and ask them to tell the group what the best outcome in the world would look like.

The more graphic and visual the headline and background the more it will stimulate interesting responses from the group. Based upon the chunking example above it might look like the following?

Good language structure is:

> **I wonder how I could double my sales month on month.**
> **I wish every sale would automatically trigger the next sale.**
> **What if I could get my customer to make the sale for me?**

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And the background might be something like:

"I am thinking about the notion of capturing pyramid selling in a legitimate and moral way. In religions and charities the focus is on getting followers who want to be involved and many of the activities are not directly related to the sale but encourage people to give resources. I am wondering if there is a new way to sell"

The purpose of this piece is to begin to stimulate the imagination. It does not need to make sense as we are at the beginning of the **non-sense** part of the meeting.

Questions are discouraged at this point as they tend to bring people back to rationality and logic. If someone wants to ask a questions they must have thought of something and it is often more useful to encourage the questioner to suspend judgement and just have an idea. The mistakes or misunderstandings that arise from dealing with deliberately vague information can be the trigger that leads to a new way of thinking about an issue.

8.3 Imagine

The imagination phase is where divergent thinking is encouraged. Both the client and the supporters join in with this phase. The client can encourage imaginative thinking by offering their own way out imaginative thoughts to the group.

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The structure for generating imaginative thoughts is as follows:

"**I wish I could visit Egypt."** This is a headline thought for the facilitator to note on a flipchart, followed by the connections in the head of the speaker, **"I was thinking about the scale of what was built in ancient Egypt versus the technology of the time. How did they achieve such huge physical goals with just people?"**

This example is triggered by the words Egyptian and pyramid in the definition stage.

Other language constructs that work well are:

"How to be as good as the ancient Egyptians at achieving massive scale."
"I wonder if I could copy the Egyptians."

This language structure encourages imaginative wishful thinking. The words we use change the chemistry in our brains. This is clear from the NLP model introduced earlier where I wrote about how our response to the world becomes a feeling and then a behaviour. Using the most appropriate language at different stages of the meeting helps both to navigate through the confusing times and to raise the probability of success.

8.3.1 Walking the dog!

Many people have had the experience of failing to get an idea to solve their problem while trying hard at work and then later, when out walking the dog, lying in the bath, shaving, etc. the eureka moment comes to them. I illustrated this earlier with examples from people lying on beaches watching surfers and playing with the washing up water.

This is a very common and normal event. An athlete only performs well when in flow and relaxed, albeit using great physical effort. When they 'tighten up' performance fails and often injuries occur. The brain is the same. If you try too hard it tightens up and the capacity to imagine and play leaves you.

The really free moment is often when you laugh and blurt out something you later regret at a party, but in the work situation this moment of the ridiculous is when the great new idea comes to the fore. A similar effect occurs when you get drunk, although this often loses its usefulness because you either get into a fight or you cannot remember your brilliant idea.

Everyone can go take the dog for a walk in a meeting. If the meeting gets a bit stale, the imagination needs stimulating or you simply want people to look in new areas then 'take the dog for a walk.'

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There is a common process that can be replicated in as many ways as you have the imagination to create. Engage the group in an activity that has no relevance to the current problem. Create stimulus material and use this to collect new imaginations.

Get everyone in the group to become an animal. Talk to the group about what it is like and have everyone listening to their inner voice for thoughts. Us these to create new imaginations.

Give people new roles or careers, and follow through as above.

Send everyone outside for a breath of air and ask then to pick up something interesting and bring it back to the room. (I once ran this with a very alpha male group and someone came back with the waitress in their arms. She thought it was hilarious). Get the group to focus on whatever is in front of them and use it to create more imaginations.

I had a colleague who collected picture postcards wherever he went. He would throw them on the floor, ask the group to choose one and use it to create a new imagination.

Give people fruit and vegetables and ask them tear them apart with their hands, feel them and smell them and then have some new imaginations.

Use Google, get people googling odd words and use the data that comes back to create new imaginations.

The point of this activity is that it has no point. Creativity arises from connecting two or more thoughts that have never been connected before. There is no way of knowing which new thoughts will be useful until after you have invented the solution in which case it will be obvious! Therefore, the broader the diversity of the thoughts introduced and the more you have of them, then the odds of a new, exciting and useful connection are raised.

To illustrate possibilities that might arise:

As a circus clown I might suggest, "**I wish I could swallow fire", my thoughts being that if I could take on all the objections from customers and overcome them I might sell more.**

As George Clooney I might say, "**I am wondering if we need to play more roles with more variety", my thoughts being that we always talk about the market as we see it and never vary our character.**

As an observer of a grapefruit I might say, "**I wish we could change the segmentation of the market", my thoughts being that we have not gone out to our customers and asked them what they think for years and we just make assumptions.**

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Moving on

You now have a long list of imaginations. There may be perfectly good ideas within this list that offer obvious solutions or paths to follow or there may not be so choosing is the next important phase.

8.4 Choose

The rationale behind the imagination phase is that there is no rationale! Einstein: "*Imagination is more important than knowledge.*" The purpose of the phase is, to use a cliché, think outside the box, so that the client can open their minds to other opportunities that is explored and pursued may lead somewhere new and interesting.

As I mentioned above it may be that that perfectly feasible and useful solutions are found in the imagination phase, new to the client, but old to many others. This is a success! Innovation only has to be new to the person using it, not to the entire universe. Some people may say that they could have thought of it earlier. Maybe they could have but they did not and if the client is excited and keen to go and take action fine.

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That said on a spectrum of innovation that ranges from the slightly novel to client at one end to, "Wow we have just reinvented our whole understanding of the universe and are off to journey to the stars", finding things that are feasible is not being massively innovative in the way that is sometimes needed to really get a breakthrough to solve a difficult problem.

The creative problem solving model is like a turbo charged car. Sometimes you can just trickle along and that is all you need to make progress and there is nothing wrong with that. Other times you want to use all the power available. So how do you choose what to work on when nothing obvious occurs to you?

8.4.1 Playing Pirates

The criteria for choosing an imagination in order to maximise your chances of discovering something new is curiosity. I repeat here what I wrote earlier because this is a key step in the process. If you select what you know and what you can see you reduce your chances of finding a novel solution. It is not wrong to choose what you know but, if you do what you have always done you will get what you have always got applies. Exploring the pirates cave may lead to the treasure.

You are unlikely to find an instant answer from an imagination, but if you explore and remain open and curious, and brave, you might find the buried treasure, just as the guy on the beach and the washer upper did.

Imagine walking along a beach below some cliffs when you were a small child. You might have discovered a small cave that you could use to play a game of explorers. However, it is only a small cave so it quickly gets boring as really you are still on the beach.

You walk further along and discover a deep cave that disappears into the cliff. As you enter and explore it gets darker and danker, because caves are like that, and as you look behind you the warm sun is disappearing and you shiver as the temperature begins to drop. Suddenly you spot a tunnel going further into the cliff and you begin to wonder.

Is this where pirates buried there treasure. Do you dare explore staying open and curious because who knows what you might find!

Of course it may just come to a blank wall or worse you fall down a deep pit!

This is how to choose imaginations. You are looking for something that just feels that somehow if you explore it, it may take you somewhere useful. Only the people who go looking find things.

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In terms of our creative problem solving model this point is the widest place in the meeting where you have thought divergently, leaving reality behind in order to consider you problem from new angles and perspectives. You are deep in non-sense, so it is critical that your selection is also non-sense as you have yet to enter the sense making part of the meeting.

I wrote earlier about brainstorming not working in part because the usual selection processes that follow it are all very rational so there is no basis for choosing new and as yet, nonsensical ideas.

Playing pirates only works if you have a way to move from non-sense to sense making through developing concepts from imaginations. Read on!

The client has the primary responsibility for selecting an imagination to work on. I suggest you choose one at a time and complete the process below and then go back if you have the time and the energy and try another one.

You may also choose to let supporters have a go, but never forget that it is the client who is accountable for direction, decisions and action, never a supporter.

8.5 Ideate

8.6 Evaluate

Ideate and evaluate are more easily explained taken together.

I use a metaphor to capture and communicate the notion of developing solutions and actions from imaginations. Think of snowflakes and snowballs that I wrote about earlier.

Every snowflake is a unique and beautiful thing and if you clap your hands on to one it will simply melt and it is gone. In order to create a snowball you first need snowflakes, lots of them, and then you must gently, at first, gather them into a small ball. As you begin this process the core begins to form ice. Becoming more robust and you can add more and more snowflakes. You can create a snowball of infinite size and mass if you just keep going and it will become very solid and very robust as mass increases.

This is the process of ideation used in order to create concepts that become possible solutions to your problem.

Einstein again, "*If an idea is not at first truly absurd then there is no hope for it*". The process begins with the client talking to the group about the curiosity in their heads that led them to choose a particular imagination.

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Do not expect this to make sense, remember we are at the widest and furthest from reality part of the meeting.

Supporters are asked by the facilitator to listen to their inner voice and write down what comes to mind, without judging it.

Everyone then begins to contribute absurd ideas.

The format of an absurd idea is to describe an action that if taken would solve or contribute to a solution in some imagined way.

Let us assume for the sake of an illustration that the client chose, **I wish we could change the segmentation of the market and the curiosity is that the Egyptians used huge building blocks to create structures that simply had not existed and maybe we need to be bolder and go and define the market rather than just accepting it as it is.**

The first absurd ideas might be:

Get a chisel, as this is what you use to cut stone.
Buy a grapefruit knife, so that we have the right tool to do the job.

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Get some slaves, because this is how the Egyptians did it.
Build a temple, as this represents a huge symbol of our capability to deliver.

And so on, collecting only 8–10 ideas, roughly a flip chart full. Notice that each idea is specific and defines an action, followed by a description of the connections made. The facilitator writes down the idea only, not the description.

The reason that only 8–10 ideas are collected is because we need to begin to hear from the client how these first few snowflakes might be beginning to suggest a thread of thought that they might pursue that might lead to a new solution.

Two possibilities exist;
Firstly the client may not be making any connections in which case you can hear some more about their curiosity and then get some more ideas and check again.

Secondly this choice may prove to be a tunnel with a blank wall so give up and go and choose another imagination. **Do not give up too soon though!**

Assuming you get a positive response from the client they are then asked to begin an early evaluation. The evaluation process is taken from 'appreciative enquiry', always look on the positive side first to acknowledge what you have and register this.

Maybe we hear:
I like the idea of exploring with the right tools and I like the very notion of becoming explorers rather than accepting the market as it is or how we assume it to be.

After the positive feature have been identified describe what need to change for the early concept to be developed and become useful. You might frame these issues as follows:

My thoughts are to wonder, how to become explorers and I wish I knew what tools to use. I am thinking that we are sales people, not explorers, so what steps do we take to change this.

So we have two areas to explore, becoming explorers and finding the right tools.

Take one at a time and run the process again as you are now into an iterative loop.

Collect more absurd ideas to suggest solutions to one of the issues, 8–10 again and then ask the client to evaluate it, positives first and then what needs to change. Keep going on this iterative loop until a solution is suggested that the client wants to take to next steps.

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Go back and work on other issues, one at a time and create further possible solutions.

In this way you will generate a pile of snowballs that represent a range of possible solutions and experiments that the client can take away and run with.

(If you are thinking the above example seems rather dull it is based upon a real project where the client ultimately chose to create a group who spent two three day sessions in facilitated workshops to talk in detail to customers. What they discovered was that their view of the world that they based product development on was a myth which is why so much of what they sold missed the target.)

8.7 Decide

It is the client's job to decide. Providing the client continues to work at looking for connections between the snowflakes and uses these to gradually create a snowball, i.e. a beginning concept, more often than not a useful stream of thought will arise.

The goal is to keep identifying issues to overcome as you mould the snowball into a useful shape until finally the client has a possible solution that can be taken away to experiment.

When Edison created the idea of a light bulb the basic concept was there, however, it took over 2000 experiments to come up with a working bulb. When James Dyson identified the concept of a dual cyclone connecting this with an image of a better vacuum cleaner he ran over 200 experiments before going to production. And as you will know this process has developed further since the original model, as has indeed the light bulb.

Providing a client keeps looking, and that is the core need, then solutions typically follow.

8.8 Next Steps

Next steps should be identified by the client and are not to be avoided. For innovation to move to commercialisation action must follow and the SMART rules are as good a way as any to describe action.

It must be:

Specific: **The action must be described in an actionable and specific way that can be visualised, not an outcome, but an action to be taken.**

Measureable: **A result must be measurable, however you may have to invent the measure.**

Actionable: **An individual must be assigned to be accountable and given the power to act upon the action.**

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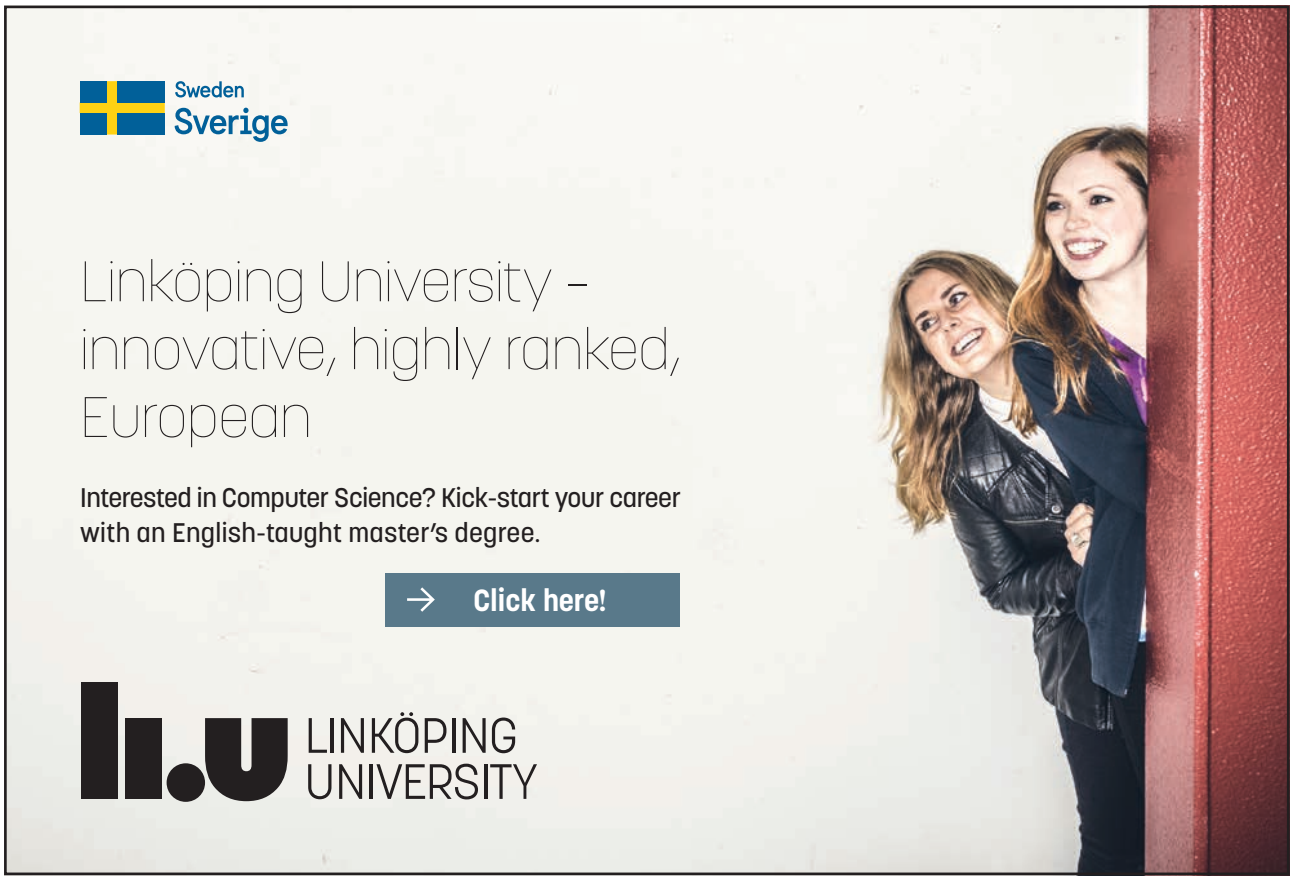
Relevant: **The action should connect with the client's goals in a describable way that contributes to an eventual solution, than you can always justify your action.**

Time bound: **A time to complete should be agreed before you begin.**



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9 In conclusion, doing the unreasonable in a reasonable way

This book describes a logical and rational approach for doing the illogical and the irrational. Whenever I am talking to people about this approach I always end up saying there is a point beyond which I can explain no more. Ultimately invention is an act of faith.

Everything described is the result of observation and research over many years from a diverse group of people. Similar conclusions have been drawn and a range of models to describe the conclusions have been described.

Nothing in this book should be new to you because all of it is observed behaviour amongst successful inventors.

You probably did not know you knew it this way and when what was previously in your subconscious is brought into your conscious mind and described as behaviour much of it seems absurd and ridiculous.

That is the point!! Creativity leading to innovation is not a logical process.

A time may come when we have understood the brain and how it works to such an extent that we can analyse and provide a logical approach to creativity, but right now that time is not upon us.

Keep the faith and keep inventing. Enjoy!

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