

# **Building A Golden Future: Ideas, Innovation & Creativity in Business**

A Special Report From

Edward de Bono and Robert Heller's  
**Letter To Thinking Managers**

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## Building a golden future: Exploiting opportunities and developing ideas

Robert Heller

Every business is sitting on a goldmine. Some marvellous opportunity always exists, either within the market already being served, or in another. But most firms never find the gold: or having done so, fail to mine the rich seam.

The idea can be brilliantly new, like the high-tech creations of the computer nerds. Or the inspiration may be as old as the hills - or the floors. There's a US chain of carpet franchises, Maxim, that makes Sir Phil Harris's past sprints look like a crawl. It's annual growth rate is 297%.

That pace of sales expansion, by both nature and the laws of mathematics, must eventually slow. Even new businesses that have never experienced such headiness suffer from the same phenomenon. The chance is spotted and seized. But the entrepreneur runs out of steam - probably before the market does.

Markets can be inexhaustible, as the Griggs family of Wollaston has demonstrated in footwear, another ancient trade. The first Griggs, Benjamin, started making boots in 1901. His heirs didn't produce their first boot to a revolutionary German design until April Fool's Day, 1960. The name was Dr.Martens, and the rest is history.

The secrets of success for the Griggs Group included a goodly supply of family sprigs: the ability to take over other local shoemakers on a friendly basis to sustain expansion ('We've simply talked to families in the next street'): and the special comfort and youth appeal of the air-cushioned Doc Martens boots themselves.

That last paragraph combines two of some valuable pointers to small company goldmines listed by Fortune magazine. First, as noted, you don't need a Microsoft-style new business: mature, even over-ripe industries contain great openings. Second, you must have a winning edge, hard to imitate and quick to appeal.

An example of maturity, though it may look novel at first sight, is healthcare, now rivalling computery as a source of super-growth. In Britain as in the US, providing medical needs - from hospital beds and clinics, via the doctors and

nurses who serve them, to the drugs and dressings they administer - is big, fragmented, growing business.

Healthcare is so big that even a fragment can yield a fortune. Supplying drugs to 90,000 patients and finding nurses, etc. for 10,000 more has given one US company \$549 million in sales and growth of 110% annually. The clientele is implied by the title: Grancare, Inc.

Whether the customers are grans or punks, the same financial rules apply. Profitable growth, not expansion for its own sake, is what unlocks the future. If the high sales growth continues, but the high margins typical of early success start to dwindle, trouble lies ahead.

A drooping return on capital is also ominous. Unless the business is averaging at least a 15% yield on the equity, without much fluctuation, the growth isn't soundly based financially. The pressure to borrow will mount - and debt should be sparingly used.

Following such sage advice may well limit the pace of expansion. Accepting that there are limits to growth doesn't come easily to the gung-ho entrepreneurial mentality. A 25% annual expansion in sales, though, doubles the business in under three years, which may be steady, but certainly isn't slow.

An American survey of high and low-growth companies showed that, over 21 years, the sluggards actually outperformed the speedsters in the stock market, with returns half again as high. British investors who stuck with the USM shooting stars will know the feeling. In case after case, soaring was followed by slump.

That, however, raises the question of time horizons. Two decades may seem like a century to a management whose activity is expanding by 414% annually, like the gambling business of Grand Casinos: or 386%, like Employee Solutions, which looks after all the staff administration needs for small employers.

But any really good idea - and that one's splendid - will have staying power. Moreover, big company experiences have stressed the paradox that, if management raises its eyes from the short term to well-planned, ambitious long-term objectives, short-term performance improves. That's no magic. Building a golden future forces you to construct a golden base.

## How to select the best ideas for implementation

Edward de Bono

Carole Ferguson, a certified trainer in South Africa, set up 130 workshops one afternoon and by using one of the lateral thinking techniques generated 21,000 ideas for a major corporation. Such is the power of deliberate creativity.

Whenever I mention this story, people always ask how good ideas could be selected from this huge number.

In the first place the ideas generated would apply to different areas. Some might be workplace ideas. So the first step would be to sort out the ideas and invite a team from that particular area to assess the ideas relevant to it. The team would be asked to lay out the potential benefits, to lay out the difficulties and risks, and to lay out the costs. The ideas which get the most attention will be those which show the largest possible benefits.

In assessing potential benefits the 'value sensitivity' attitude of the yellow hat is essential. If you are not sensitive to value then you are wasting your time trying to be creative. I have sat in on so many creative meetings where excellent ideas were generated, but those present were unable to see the value in their own ideas!

### FRAMEWORKS

One way of making a rapid assessment of a large number of ideas is to make an 'emotional assessment'. This would be based on intuitive feelings. It would be necessary to set a 'framework' for those feelings. Possible frameworks include the following:

- ...obvious values
- ...strong multiplier effect
- ...easy to implement
- ...easy to test
- ...fits in with existing strategies
- ...very simple
- ...low-cost implementation
- ...satisfies a known need
- ...very different from traditional thinking

Any one of these simple frames can be used to scan the idea and pick out those that seem to satisfy that frame. It would be a mistake to become greedy and to try

to combine different frames. You can do many scans, but each scan should have one frame.

The ideas that are picked out on this 'red hat' first scan or first 'pass' can then be explored in fuller detail. The remaining ideas are not rejected or discarded. They are kept in the idea bank for future examination.

## **FULL BENEFITS**

The first step in a more detailed examination is an exploration of the full benefits. How large are the benefits? On what do the benefits depend? How durable are the benefits? Who enjoys the benefits? How might competitors respond? And so on. Very often the benefits are even greater on closer examination. Sometimes it is the other way round. An idea which seemed to show benefits at first sight turns out to have benefits that are limited to only a very few people under special circumstances.

The originator of an idea should be asked to spell out the benefits of the idea. It is not enough just to be creative and to expect others to work out the benefits. At the same time, it does happen that people other than the originator of the idea can see more benefits than the originator.

Supporting evidence for the claimed benefits would need to be collected. Such evidence may take the form of statistics or trends. There may also be comparisons with somewhat similar ideas (me too). Why do we think this idea will have these benefits?

There is always some speculation and uncertainty about benefits. If we lower the price, will people buy more? This may not work in areas which are not price-sensitive, or in areas where price and quality are strongly linked: a cheaper product may be seen as of inferior quality.

The intuition and feelings of those who have experience in the market is also an ingredient in assessing the benefits. 'Gut feeling' is a useful ingredient and can put together a number of complex factors. It can also be wrong.

As the benefits are explored there may be suggestions as to how the idea can be changed in order to increase the benefits. Such possible changes are kept in mind.

## **EASE OF IMPLEMENTATION**

This comes next. How easy would it be to use this idea? There may be channels or mechanisms in existence through which the idea could easily be used. There is a big difference in value between an idea that can be used easily in an existing

structure and an idea which requires new structures. Sending a new signal down an existing wire is much easier than laying down new wires.

The 'ease of implementation' must also include the people factor. Who is going to carry out the idea? How will that person react? Will that person or group be competent to carry out the idea? What are the 'political' feelings of the people involved? There are some people who are resistant to any change. There are others who might be unhappy about a particular idea. At this moment the 'cost' of implementation is not considered. The simple question is: can this idea be implemented?

## **COSTS**

If the idea has benefits and can be implemented, then the next phase is consideration of the costs. This consideration needs to be rather broad. There is money. There is time. There is management attention. There may be resource considerations. What other ideas and opportunities would be crowded out? Are the costs known or is it an open-ended 'blank cheque'?

It is obviously not economic to try out every good idea. When resources are committed to one idea, those resources cannot be used for other ideas. So the 'opportunity cost' needs to be looked at closely. It may mean that one very expensive (but good) idea will lose out to several less expensive (but also good) ideas.

## **RISKS**

There are many different sorts of risks. The first risk is that the idea may simply not work out. For example, something that worked in the laboratory may not scale up to full production. Then there is the risk that the idea may not be implemented properly. There is the risk of intervening circumstances: a mail order campaign may be disrupted by a postal strike: new legislation might affect a new credit concept. There is the risk of unforeseen customer response.

Consumers may not react as had been supposed: car buyers may not react well to a tiny, cheaper car from Mercedes-Benz. There is also the risk of competitive response. The competitors might respond with an even better idea or an even lower price. Once a price war is set off, then profit margins are eroded on all sides without any increased market share.

Risks can be met by changes in the idea and by the design of contingency plans. In the end it is the risk/reward ratio that decides whether an idea is worth trying out.

## **EASE OF TRIAL**

If an idea can be tried out easily and at low cost, this is very much in favour of that idea. It may be possible to have a pilot project. It may be possible to try the idea in one region only. The advantages of a test are obvious. If the test works well, then there is much more motivation to get behind the idea and to allocate resources to it. If the test gives negative results then the idea can be dropped without the cost of a full-scale implementation.

As with all tests it is important to make a special note of the circumstances. An idea may have succeeded because of special circumstances. Perhaps the launch coincided with Christmas shopping. An idea may have failed because of special circumstances. Another product launch might have diverted attention.

## **BEST HOME**

What would be the best home for this particular idea? Instead of focusing on the idea, we focus on the 'best home' for the idea. One idea might be suitable for a new company trying to establish a presence in the field. Another idea might be more suitable for a large company with established brands and a market presence. Another idea might be suitable for a company with a reputation for 'trying' new products. Another idea might be too risky for a conservative financial institution.

After considering the best home for the idea, that best solution is compared to the actual situation. This idea is best suited to a new company trying to establish a market niche - are we that sort of company?

This approach means that it is possible to acknowledge the intrinsic value of an idea and yet choose not to use that idea. Such an approach is much better, and much more honest, than seeking to show that it is a bad idea and that is why the idea cannot be used.

At the same time, there is always the danger of providing too easy an excuse for an organisation that does not want to use any new ideas: 'that idea is a great idea, but not really suitable for us'.

## **SUMMARY**

The selection of ideas may require hard work. Why should it not, if the rewards are going to be substantial? The strategy of 'maintenance and problem-solving' works well right up to the point when it fails. It is then usually too late to do anything else.

## Perceived risks should not hamper creativity

Edward de Bono

There are many perceived risks associated with creativity. Some of them are more valid than others.

The first perceived risk arises because, if you never do anything, then you are never likely to make a mistake. No-one would ever spell this out too precisely, but it is at the back of many people's minds. An initiative is a potential mistake - so do not take initiatives, and then you can never be blamed for making a mistake.

Most organisations I have worked with claim to be creative. In truth, however, they operate on the usual principle of 'maintenance and problem solving'. This means keeping things going much as they are going and then solving whatever problem arises.

### **MISSED OPPORTUNITIES**

Missed opportunities are not easy to detect. No-one gets blamed for not using an opportunity, but you do get blamed for making a mistake.

In some changing businesses, doing nothing means that eventually the business will be run into the ground. This does not much matter if the process takes longer than your tenure of an executive position.

Where it becomes obvious that changes are needed, then you still do nothing until everyone around you has changed. You let them take the risks. Then you copy them or come in with a 'me too'. That passes for smart strategy - and in some ways it is.

### **ANARCHY**

The second perceived risk is that there would be anarchy if everyone tried to be creative.

There is a perceived dichotomy between rigid routine and creative anarchy. Once creativity is permitted, there is the belief that everyone will be running around trying out new ways of doing things and nothing will get done.

Having to deal with the expected deluge of creative ideas can seem very daunting, even if it only means turning them all down. Most people prefer change to happen through a slow evolutionary process, rather than energetic creativity.

Having an idea and deciding to use that idea are two separate things. It is the business of creativity to have ideas and to show the benefits of these new ideas. It is the business of judgement to decide whether the idea is worth using.

There may be excellent ideas with lots of foreseen benefits, but the cost of change is such that the excellent idea is not worth using. Most organisations that claim to 'have too many ideas' really have too few good ideas.

### **DISTRACTION**

The third perceived risk is that new ideas may be a distraction from the ongoing business.

People have jobs to do. If someone sits around trying to be creative, then that person's job may suffer. That person may become less effective because part of his or her thinking is focused on possible new ideas.

Part of the fear here is that new ideas are more fun. By contrast routine operations may be seen as rather sterile and boring. There is a risk in allowing people to have fun.

It is seen as being all right for the long-haired 'creative type' to have ideas, but not for the sober-suited executives, who are there to get on with running the business much as it is.

### **HASSLE**

The fourth perceived risk is that any idea is going to mean a lot of extra hassle.

Here the fear is not that the new idea may not work, but that even if it does work, there is a lot of hassle associated with getting the idea up and running. Anything that involves persuasion is a lot of work. Anything that deviates from the norm is a lot of work. Anything that requires ongoing thinking is a lot of work. People do not like to make extra work for themselves.

### **IT MAY NOT WORK**

The fifth perceived risk is that the new idea may not work in practice.

Unless it is a known or copied idea, there can be no guarantee that a new idea is going to work. The very fact that it is new means there is uncertainty about success. Hollywood film-makers are said to want to go on producing 'Son of Lassie' and 'Grandson of Lassie' movies. If the film 'Lassie' worked in the first instance, then derivatives are more likely to work than totally new stories. It is

reported that Sam Goldwyn once said: 'What we need is some brand-new clichés'. That is to say, something really new, provided it was exactly the same as before.

A new idea promises benefits, but those benefits may never be delivered. It may be that the idea itself is faulty. It may be that the timing is wrong. It may be that competitors outsmart the new idea. There are many, many reasons why a promising new idea may never work.

### **DISASTER**

The sixth perceived risk is that the new idea may turn out to be a disaster.

The new idea may seem attractive. The new idea may seem a 'saviour' for the organisation. All resources are placed on this one bet. The bet does not come off. The corporation is dragged down by the failure of this promising and exciting new idea. This can easily happen when a really good idea is a little bit ahead of its time. Years later somebody else succeeds very well with the same idea.

### **BAD IDEAS**

The seventh perceived risk is that there are also bad ideas, and this may be one.

There can be exciting new ideas which are bad ideas and which simply do not succeed in the market place. Usually there is some exciting aspect of the idea (for instance, selling something in the huge China market) and this aspect prevents examination of other aspects. If it were possible to decide in advance which were the good ideas and which were the bad ideas, then creativity would have rather more practitioners. Anything to do with the future is uncertain, and new ideas are all about the future.

### **UNFORESEEN**

The eighth perceived risk is that unforeseen circumstances may arise.

The idea may be excellent. The implementation of the idea may also be excellent. But then there are unforeseen circumstances. There is a postal strike just when a mail campaign is about to be launched. The regulations are changed with regard to investments. There is a local war. The price of a basic ingredient is increased. There is a health scare about some aspect of a new product. Competitors come in with a big price cut. Fashions change.

There are so many things that can happen and which can change the performance of an idea. For all these reasons, and some others, there are risks attached to creativity. So many people prefer not to get involved in such risks. They know

that new ideas are important - even vital - but somehow that is someone else's business. Let others take the risk and then take up and copy what seems to be succeeding.

### **SO WHAT IS THE ANSWER?**

The answer depends on the nature of the organisation and the nature of the market. Some markets are fast-moving and some are not. In some sectors there is fierce competition and in others there is not. The cost of entry may vary from sector to sector. Technology changes may be rapid in one sector but slow in another. So general principles have to be very general.

Principle 1. If you never use creativity you are operating at way below potential. This is because there are improvements and opportunities to which you are not getting access. You may indeed survive, but are falling far short of what you could be.

Principle 2. Creativity provides opportunity - judgement provides choice. There is no need to be frightened of creativity. In the end it is judgement which decides whether to use an idea or not. Creativity provides the food on the buffet. Judgement chooses what to eat.

Principle 3. Creativity can provide simpler, cheaper and more profitable options. We usually think of creativity as complicating things. The proper use of creativity can often simplify things and provide better profit margins.

Principle 4. You may restrict your own creativity, but you cannot restrict the creativity of others. You may simply get left behind in a fast-moving field. Catching up may then be very expensive or even impossible.

Principle 5. Creativity may be defensive as well as offensive. Your competitors are moving ahead. You need to be creative to compete with them. There is little choice.

## Without value, creativity is useless

Edward de Bono

Artists have been rather successful in creating new frameworks of judgement through which their work can be appreciated. The Cubists could not be appreciated through the old frameworks, but once the new framework was established, by the critics, then hitherto rather ugly works now had value. The value grew larger and larger until the works were sold for several million dollars each. There are a few other fields, such as architecture, where the creators define the framework through which the work will be valued.

In most fields, however, the value has to be assessed within the normal and standard framework. The creativity of an engineer has to be assessed within the framework of good engineering. The creativity of an advertising executive may either be judged by the success of the advertisement in selling the goods or by success at winning advertising competitions.

Creativity sometimes seems to justify the complaint that there is difference just for the sake of difference. Instead of a door being rectangular, it's now triangular. In such cases there is always the value of novelty and of catching attention. These values apply to anything different or bizarre. On the whole, these values are not sufficient unless they are the primary values sought.

Any valuable creative idea will always be logical in hindsight. This is because the evaluation and appreciation of the idea depend on the logical application of existing values. The values may not all have been foreseen, but they can be recognised once they are present.

At this point a really difficult dilemma arises. It is a classic Catch 22 situation. If a creative idea is perfectly logical in hindsight, it may not be seen as a 'creative idea' at all. It will be presumed that the idea could well have been reached by logic - even if this was not the case at all. What is sought for under the term 'creative' is an idea which is very different and often bizarre. Such ideas are then seen to be creative - but are often perceived as 'impractical'.

### VALUE MATTERS

So an idea which offers logical value is not seen as creative, and an idea which offers only 'difference' value is perceived as creative. This rather prevalent attitude has a very negative effect on creativity. People who wish to be seen as creative now strive towards rather bizarre ideas instead of ideas which seem very logical. The result is that creativity comes to be seen as a peripheral luxury rather

than a key ingredient. It is not dissimilar from creative people having to wear strange clothes and strange haircuts in order to be seen as creative.

If getting to the top of a mountain is what matters then it does not matter whether you climbed up the hard way, or climbed up the easy way, or got there by helicopter. If logical effort has not produced the needed ideas and creative effort has produced them, then creativity has a value even if the final ideas are indistinguishable. To understand why creative ideas may be logical in hindsight but difficult to reach by logic in the first instance, you need to understand the asymmetric nature of self-organising patterning systems as described in several of my books.

### **VALUES IN ADVANCE**

Creativity may be used to deliver certain defined values. This is no different from problem-solving or seeking improvement in a given direction. How do we achieve this? How do we get there? How do we deliver this value?

The use of creativity is to find a way of 'getting there'. If there is already a way of getting there, then creativity seeks to find a 'better' way of getting there. 'Better' may mean a simpler, more effective or cheaper way of getting there. It may also be that the 'creative' way actually delivers more of the value than the standard way of doing things.

### **VALUES IN HINDSIGHT**

While a creative effort may seek to deliver certain values, there are times when the creative approach delivers new values that have not been foreseen. In a sense, the lateral thinking process of provocation involves 'moving forward' from a provocation in search of values which could not have been foreseen. This is where 'value sensitivity' comes in. In the process of movement, the mind is continually looking for glimmers of value. Once such a glimmer is seen, then it can be explored until a real value is revealed.

In such cases it is obvious that these values have not been seen in advance. This type of creative thinking is clearly very different from 'designing towards a goal'. The provocation 'Po cars have square wheels' leads to the idea of suspension that reacts in anticipation of need - rather than after the need. There is no way that value could have been seen in advance. The whole point about provocation is that you do not know where the provocation will take you.

### **DOMINANT VALUES**

Not all values are equal. Price may be a major value, but convenience is also important. There are other times when convenience is the major value and price

is secondary. You may aim for what you think is a dominant value and find that a secondary value is much stronger.

The emphasis of acceptance may then switch to the secondary value: 'This is not what I aimed for - but it is in fact more important'. This does not mean being satisfied with secondary values, but being flexible enough to note that there is a new situation. Once again there is the fundamental difference in thinking between 'knowing what you are aiming for' and 'knowing what you have found'. It is very important in creative thinking to distinguish between the two.

Sports vehicles may have the dominant value that they are suitable for country living, with space for children, dogs, fishing equipment, etc. There is the secondary value of suggesting that the owner/driver lives in the country with a country estate. In urban living this may become the dominant value. Once the vehicle is in use, however, the convenience of carrying material around may become dominant.

Being different from other car owners may also be a value until others start doing the same - as has already happened in some places.

It is possible to keep two or more values in mind from the start. You may want to design a cheap and robust ladder. You may also want it to be portable and safe.

## **VALUES FOR SELECTION**

Values may be 'designed towards'. Values may be noticed as they arise. Values may also be used to select ideas as part of the selection screen. This is often necessary, but is the weakest use of values. Use of values for selection really implies turning up a number of ideas and just hoping that some of them have the values that are needed.

The 'challenge' process illustrates the relationship between 'difference' and 'value'. After the focus stage, a change or alternative is forced on the situation. This is followed by a search for value. If no value is found, then the creative effort has not been successful. Difference is only a stage towards value and never an end in itself (except perhaps to catch attention).

Part of the role of creativity might be to create new values which simply did not exist before. Mobile phones may allow a type of investing (for five minutes at a time) which could never be done before. Even so, these values should have a logical basis in order to be appreciated. Occasionally there might be a new value that does not fit in with existing ideas and might be rejected. If, however, this new value is tried out, it might turn out to be acceptable. That is the usual risk with really new ideas. Is it worth trying them out?

The purpose of creativity is to deliver old values in a new way (better way), or to deliver new combinations of values or values that are indeed new in themselves. The purpose of creativity is not just to be different for the sake of being different.

## Anyone can learn formal tools to create and innovate

Edward de Bono

In France there has been growing concern with innovation. France may be falling behind other countries in this regard. Many suggestions have been made. There is a need for a closer link between university research and the commercial world. There is a need to remove various barriers and to change the regulatory environment. There is a need for venture capital structures and tax incentives, etc., etc.

Within any organisation there is much that can be done to encourage creativity. Having an idea is one thing, and putting it into action is another. There may be a need for a 'Creativity Centre' to act as a focus point. There may be a need for someone who becomes the 'Process Champion' for innovation. There are a lot of structural things that can be done. Creativity must be an expectation - otherwise it is a risk. It is one or the other. Structural changes emphasise the expectation of creativity as part of everyone's job. Structural changes encourage creativity and channel it into action.

The famous French philosopher Descartes said: 'Cogito ergo sum'. This means: 'I think, therefore I am'. I believe we need to do better than that. Sitting thinking and understanding and analysing are not enough. There is a need for action. So my quote goes as follows: 'Ago ergo erigo'. This means: 'I act, therefore I construct'. The design of the action pathway is just as much part of the design of an idea as the delivery of value. It is not much use, in a specific situation, to design an idea that cannot be put into action.

All these structural and infrastructural things are important. There is even, as I have noted before, a need in language for a new word which means: 'Fully justified venture which did not succeed for reasons which could not have been predicted and which were beyond control'. Without such a word any failed venture is seen as a failure, a mistake, bad planning, etc. If ventures are only judged by the ultimate result then 'justified ventures' are always excluded. The effect is that people are unwilling to take the risk of trying out new ideas because they do not want a record of failures to be set against them.

## **THE THINKING NEEDED**

Water is necessary for soup. Without water there is no soup. Competence, efficiency and structure are all three necessary for the survival and success of any organisation. Having the right infrastructure in place is necessary for successful innovation. But more and more water does not create soup. Without flavour there is no soup. It is the same with innovation. There is a need to have the right infrastructure in place. But without ideas there is no innovation. Structural changes are tangible and can be put into place through a decision, so they get more attention than the thinking needed for innovation. Yet the thinking is essential.

Our traditional habit of thinking goes something like this: information followed by analysis; followed by judgement (to identify standard situation); followed by action. It has to be said that for most purposes this is excellent thinking that is both effective and efficient. If the external situation changes sufficiently, then actions will change. The difficulty is changing actions when the situation has not changed. That is where deliberate creative thinking is needed and is most difficult.

When you have dealt with a particular set of circumstances in an adequate way, how do you change your thinking to deal with the same circumstances in a better way? The brain is specifically designed to be non-creative. The purpose of the brain is to make stable patterns for dealing with a stable world. If we had to work things out in detail each time and had to consider all possible alternatives, life would be impossibly slow. So the brain makes standard patterns. All we have to do is to recognise the standard situation and apply the standard response.

If you designed a Grand Prix racing car you would not be surprised if it was unsuitable for shopping. In exactly the same way the speed of response of the brain depends on using standard patterns. If there is a need to explore new routes and new avenues, the brain is not designed for this. The simple answer is to use your racing car for GP circuits, but switch to your shopping car for shopping. We need to be able, in our minds, to switch from analytical/judgmental thinking to lateral/creative thinking at will.

Because creative ideas do happen by chance, by accident and by confluence, we assume that this is the only way they can happen. Because some people seem more motivated than others to try for new ideas, we assume that new ideas can only come from 'creative people'. Because early judgement kills any creative idea, we assume that the suspension of judgement, as in brainstorming, will be enough to generate new ideas.

All the above considerations blind us to the realisation that creative thinking is a mental skill that anyone can acquire - if they so desire. The formal tools of lateral thinking can be learned, practised and used in a deliberate manner. As with any skill, not everyone will be equally proficient, but everyone can acquire a useful level of skill. Where do such tools come from? They come, not from empirical observation, but from consideration of the brain as a self-organising information system. Such systems make asymmetric patterns. The tools of lateral thinking are formal ways of cutting across such patterns to open up new ideas.

Because in asymmetric systems every valuable new idea will seem perfectly logical in hindsight, we have believed (for thousands of years) that logic is enough. That is because we have never considered the behaviour of self-organising information systems that always make asymmetric patterns. There is no mystique about it.

In most of the above cases, exposure to some of the formal tools of lateral thinking can change attitudes. For example, engineers are the most resistant at first. Engineers have been taught that you move from certainty to certainty and never take risks: competence is what matters. When engineers have seen 'the logic' of lateral thinking, their attitude completely changes and they become very good at it.

## **DIFFERENT**

There are aspects of lateral thinking that are totally different from traditional thinking. For example, there is the function of 'provocation'. In any self-organising system there is a mathematical need for provocation. Without provocation the system gets stuck in a 'local equilibrium'. With provocation there is a logical reason for saying something you know to be incorrect (e.g.: 'PO cars should have square wheels'). Then there is the new and different mental operation of 'movement'. Movement is very different from judgement and not part of our traditional thinking. At the same time it is a fundamental operation in all creativity.

Quite simply, it is very difficult to be creative with our normal thinking habits and methods. For instance, 'truth at every step' is a big barrier. Ultimate truth and practicality are essential. So also is the ability to deliver value with the new idea. But the way to that ultimate truth does not require truth at every step. It is not a matter of adjusting our usual thinking behaviour, for that would weaken the effectiveness of that behaviour. It is a matter of being able to switch into another mode - being able to switch into the lateral thinking mode in order to generate new ideas.

Just as a visitor might switch into French when he or she arrives in Paris, so every thinker ought to be able to switch into the creative mode. This goes beyond the 'suspended judgement' of brainstorming.

## Find business alternatives through lateral thinking

Edward de Bono

Imagine that you have a person at point A and you want to make it very difficult for that person to get to point B. What would you do? You could put a wall around B. You could place a wall or a ditch between A and B. You could attach a ball and chain to the person's ankle. You could lock the person up. In all these cases, the person would remain conscious of point B and wanting to reach point B.

By far the most effective way of preventing the person from getting to B would be to make it very easy and attractive for that person to go to C. If the channel to C is easy, obvious and attractive, then the person forgets all about B. This is what I mean by being blocked by openness.

We are conscious of being blocked by obstacles and barriers. We are conscious of being blocked by gaps. Sometimes we cannot proceed further because we have run out of path. There is a need for information or for mechanisms. Being 'blocked by openness' is totally different. We are blocked from one path precisely because we are entrapped in a competing path.

### **PATHWAYS**

A girl is very good at mathematics at school. She is encouraged to take advanced work and certificates in mathematics. She ends up as a mathematics lecturer at university. Yet that girl might have been much happier as a business executive. Her excellence at mathematics has effectively 'blocked' the other pathways that she might have followed.

There are two broad aspects of creativity:

1. We do not know where to start to generate a new idea. All we know is that we want a new idea around a defined focus. There is no particular direction in which our thought is leading us. How do we get going?
2. In the second case our thoughts are so dominated by existing ideas and approaches that we keep getting dragged back to these established tracks. Tradition, habit, standard ideas and a personal sequence of experience set up the usual ideas. Once established, these ideas, like established rivers in a

landscape, capture and control the flow. We are blocked by the very 'openness' of these channels.

You are rolling a heavy ball across the surface of the table. The ball leaves your hand and goes in the direction you intended. Now imagine a shallow dish inset into the table so that the rim is flush with the surface of the table. As you try to roll the ball across the table, the ball is captured by the dish.

In a similar way, existing patterns in the brain capture our perceptions and pull them into established tracks. In general, this is a very useful property of the brain, because it means that we look at the outside world through established perceptions. This means that we can understand the world and know what to do with it.

When we are trying to be creative, though, being pulled back into existing patterns does not help us to be creative. We have somehow to escape from these existing patterns in order to develop new ideas.

## **CHALLENGE**

One of the simpler lateral thinking techniques is 'challenge'. There is nothing exotic about the challenge process. It is as much an attitude of mind as a formal technique. There is the willingness to focus. What are we challenging? This is not as simple as it may seem.

A person goes into a shop, buys some goods, pays for them and leaves. What do we challenge? We might challenge the necessity to 'go to the shop'. This might suggest video-shopping, mail order, party shopping, delivery service, etc.

We might challenge the fact that examining the goods and purchasing them are done in the same place. We might conceive a place where goods could be examined and a totally different place where they might be picked up - or home delivery. This suggests the concept of a 'goods examining service'.

We might challenge money payment for the goods. Various forms of money transfer would be considered. We might challenge the need to pay at all. We might challenge the fact that the price is related to the goods. We might challenge whether the purchaser now owns the goods.

Some of these aspects might seem obvious and impossible to challenge. But they need not be. If we challenge ownership, then one idea might be that the purchaser has the goods on an open-ended lease. So the vendor is responsible for repairs and for final disposal of the goods. Even in the simplest of situations there are

many things to be challenged. There are aspects of the actual situation. Then there are the many concepts that are implicit in the situation. Then there is our 'current thinking' about the actual situation.

## **FOCUS**

This 'focus' part of the challenge process is really the most important part. It is usually not easy to pick out and focus on things that we take for granted. We take it for granted that the purchaser pays the price of the goods purchased. That is so obvious that we do not think to challenge it. In practice, there may be several different prices; cash, cards, instalment, etc.

There might even be a substantial discount if the purchaser pays in advance - perhaps years in advance by purchasing APCs (Advance Purchase Coupons). The purchaser may also buy a 'service', and the goods are only part of the delivery of that service.

The challenge process itself involves the application of the three types of 'Why'.

Why/A: this stands for 'Alternatives'. We challenge uniqueness. Is this really the only way to do it? What alternatives might there be?

Why/B: this stands for 'Because'. What are the reasons we do it this way? Are these reasons still valid? Can we escape from these reasons? Sometimes the reasons are historic and are no longer valid.

Why/C: this stands for 'Cut'. Can we cut this? do we need to do this at all? What would happen if we simply dropped it?

## **PROVOCATION**

The provocation process usually takes an existing situation and then alters this to create the provocation. For example, the 'escape' type provocation drops or negates something we take for granted. We take it for granted that we have waiters or waitresses in a restaurant - so we get the provocation: so we have no waiters or waitresses.

This escape provocation may end up as somewhat similar to a challenge. We might think of self-service or of taking your own waiter or waitress to the restaurant (for example, a student hired for the evening). These are really alternatives to the normal waiters or waitresses.

We could also use movement to move forward from the provocation. There might be no waiters or waitresses because there was nothing to serve. This might suggest that the cooking takes place in a microwave oven under the table.

Provocations (escape, reversal, distortion and exaggeration) do serve to get us out of our normal thinking patterns. We then move forward to a new idea. This may be very different from an alternative. A typical reversal type provocation for the restaurant situation might be: 'Po we serve the waiters or waitresses'.

From such a provocation might come the idea that each table has a 'serving position' to which the food is brought. From that position onwards the diners serve themselves. There might even be a heated trolley that is brought to the table side for that purpose.

## **CONCEPTS**

In order to generate alternatives we seek to identify the background concept first and then we find other ways of carrying out this concept. This is another way of escaping the domination of the traditional idea. Unlike provocation this method will give us a new way of carrying out the existing concept, but not a new concept. The challenge process is just an intention to find a new way. If no new way comes to mind, then we would have to move to concept extraction to generate alternatives. If we go back to the store example we might extract several concepts:

1. The availability of goods at a place convenient to the customer.
2. The exchange of goods for money.

The availability of goods might also be carried through by periodic large selling exhibitions which would take over an exhibition hall for a month. This would be different from permanent shops. Another way of carrying out the concept of 'the exchange of goods for money' would be through a professional shopping service which supplies the goods and operates on commission.

## **SUMMARY**

Part of the deliberate process of lateral thinking is to identify those concepts and ideas which 'drain' off our thinking in a particular direction. We are blocked by the openness of such channels. We can use the methods of challenge, provocation and alternative generation to seek to move away from these entrapping ideas in order to find new ones.

## **Business evolution: Small 'permissible' changes can foster a culture of creativity**

Edward de Bono

Evolution relies on small 'permissible' changes that allow the organism to survive in the current context and eventually to show that it is even better at surviving than the unchanged organism. It is rather hard to see how traditional evolution brings about such things as the Queensland frog, which eats its own fertilised eggs. Digestive juices in the stomach are turned off; the frog survives without eating; and eventually the small baby frogs jump out of the mother's mouth. In such cases several different things must happen simultaneously for the whole operation to work.

You can imagine a giraffe's neck getting slowly longer and longer because the long-necked ones could browse on tree-tops. Permissible changes are defined as changes which have an immediate benefit, fit in with the existing system, and do not require external approval. If a librarian carries one book at a time and then chooses to carry two books, that might be a 'permissible change'.

### **EXTERNAL APPROVAL**

This change might evolve to carrying several books and even a tray on which to place the books. Finally there may be a trolley. Even though the evolution path has been smooth, there will be a need to finance the trolley and therefore this now needs external approval.

Experts in any field are continually making a series of small changes; they take short cuts; they leave out inessential things, etc. The Japanese method of Kaizen encourages a continuous flow of small changes. In a previous article I indicated that where a bold concept change is needed, a series of small steps will not bring this about. Indeed, it may have the opposite effect by discouraging bold thinking. Right now, however, I am exploring the value of small permissible changes.

### **MOTIVATIONAL**

Perhaps the greatest value is the motivational value. If workers are continually looking for small possible changes, then they are going to take a far more active interest in what they are doing. They are going to think about things; challenge things; and consider alternatives. There is a switch from passive acceptance to active participation. Creativity is now everyone's business.

Some small changes may only be of value to an individual. A short person may want things at a different height. A left-handed person may want things on the other side. Other small changes might simplify the process for everyone.

Small changes also have their own intrinsic value. They can speed up the work. They can reduce stress and strain. They can reduce errors. They can simplify procedures. Even something as simple as putting a non-slip grip on a handle can have a profound effect on safety. There are, however, some obvious dangers in small permissible changes.

### **CHANGE FOR THE SAKE OF CHANGE**

There are people who will want to show off their 'creativity' by making changes for the sake of change. This is very often the case with designers who have to show their input and imprint and only succeed in complicating a design which was perfectly satisfactory. In order to reduce this danger, there can be a requirement that the change must 'show value'. Just being novel or different is not a sufficient functional value.

### **IDIOSYNCRASY**

This may be a perfectly valid change, but its value is only delivered to the person making that change. Suppose a person in an open plan office insists on colouring his or her space purple. This colour may suit that person, but may not have the same appeal to other people.

A clear distinction may need to be made between 'personal space' and 'shared space'. Putting something at a certain height may suit a worker on one shift, but not the worker on the next shift. The obvious solution to this difficulty would be an easily adjustable height.

### **DISORGANISATION**

This difficulty follows on from the previous one. If one person finds it simpler to fill in a form in a particular way, then this imposes a need on everyone dealing with that form to understand this particular method. If such changes were multiplied several times over, the disorganisation would be severe.

Where some operation has to fit in with another operation, then unilateral changes - no matter how small - can be disruptive. Where the interface between operations is limited, then joint discussion of the suggested change may be enough to sanction it. But where the interactions are diffuse, then the change may not get beyond a suggestion: as in the above example of changing the form.

## **EXPECTATION**

If you expect traffic lights to be in a certain position and at a certain height, then changes (even if for the better) can cause confusion.

Changes in the colour of traffic lights might benefit colour-blind people, but would confuse everyone else. If you expect something to be in a certain place, and it is not, then the benefits of that change for the originator may become disadvantages for others.

The difficult question, as in any sort of creativity, is how far should one be enslaved by expectations? It would be difficult to make any changes at all if expectations were an overriding factor.

Any change is going to upset expectations somewhere. In the end, it is a matter of balance between the value of the change and the 'negative' value of upset expectations.

## **FRIVOLITY**

This is somewhat similar to 'change for the sake of change'. The change is not very important, but at the same time it is not very upsetting, either. Unless uniformity as such is a high value, then some degree of creative frivolity adds more than it subtracts.

Jeep drivers in the Philippines adorn their jeeps with rows of gleaming horns. The utility value is not high, but the 'personalisation' of the vehicle is strong.

## **VALUE**

As for any creative change the ultimate justification is 'value'.

- What is the value of this change?
- Who benefits from the change?
- How are the benefits delivered?
- What is the cost of these benefits?
- What are the potential problems?
- Will this change be acceptable?
- How durable are the benefits?
- Who else is affected and how?

It is not difficult to construct a check-list of this sort. It is rather more difficult to go through it systematically and honestly. The really difficult cases are those where the ultimate benefits are delayed. At first there might be confusion, slow acceptance and even real drawbacks - but ultimately the benefits come through.

When Ingwe Coal in South Africa suggested an eight-day working week, followed by five days off, there was great resistance from almost everyone. Today the change is widely seen as beneficial. Workers now have time to travel to their homes. Before, travel took up most of the weekend.

Because 'permissible changes' are changes that are made within one's own decision space, the value criteria are somewhat simpler. There should be at least one dominant value. The feasibility, cost, drawbacks and effect on others can then be considered. The change should be tailored to maximise the dominant value. When there is a need to list a number of subsidiary values, then there is the suspicion that there is no dominant value.

## **FOCUS**

The major value of small permissible changes (SPC) is that it enables someone to focus on very small matters. People are too often inclined only to think of major changes in strategy, in operations and in procedures. These are undeniably valuable, but small changes also have their own value. Such changes may save material, time and money: but, above all, they make life easier for the worker. In any organisation there are four prime values:

1. Value to the customer.
2. Value to the investor.
3. Value to the worker.
4. Value to society (environment, etc.).

Any or all of these values may be enhanced by small permissible changes.

## **CULTURE**

People can, and do, make small changes without anyone noticing. A visible policy of encouraging small changes results in more and bigger changes. It is not just a matter of 'permitting' changes, but of actively seeking them out. Good examples should be publicised so that everyone can know about them.

Once the culture of change is in place with some identified 'champion', then the process establishes an energy of its own. It remains important to give due honour to very small changes in order to show that these are important. Changes that start small can grow bigger and bigger - even to the point where there is a basic concept change.

## **Business possibilities: Don't discount possibilities lightly in your business strategy**

Edward de Bono

I have just returned from Beijing where I gave a number of talks: at the World Economic Forum meeting; to the Beijing Olympic Committee; to the Beijing Institute of Technology; to China Central TV; and a public seminar.

As a culture, the Chinese are highly intelligent, very disciplined and hard-working and show a high respect for each other (see the Beijing traffic problem). The economy is growing by about 7.3% p.a at the moment.

Two thousand years ago the Chinese were far ahead of the West in science and technology. They had gunpowder and rockets. They had invented printing and paper long before the West. Had China continued at the same rate of progress, today China would easily be the dominant economic power in the world. So what happened?

The Chinese had a formal and civilised society very early. This had two effects. The first is that you advanced by doing things the way they should be done. The incredibly stiff Civil Service exams meant that the brightest youngsters aspired to do things in exactly the right way. The second effect is that you use your intelligence to adjust to the world rather than to change the world. Bernard Shaw put it neatly: 'Progress is due to the unreasonable person. The reasonable person seeks to adjust to the world. The unreasonable person seeks to change it'.

Then there were the scholars, the academics and the mandarin class in general. They sought certainty. They described things as they were. There was no room for ambiguity, possibility or 'maybe'. This traditional deadening effect of the scholar class (also present in the West) held back progress and was the basic reason behind the 'Cultural Revolution'. That is not to justify the way this revolution was carried out.

It seems the Chinese never developed the 'hypothesis'. Without that key piece of 'mental software', progress came to an end. Where did the hypothesis come from? It came from ancient Greece and the pre-Socratic thinkers, who were much brighter than the Gang of Three but were suppressed by the Gang and, much later, by Christian thinkers.

In science the hypothesis provides a framework for collecting evidence and designing experiments. In Karl Popper's view you should set up the most 'reasonable' hypothesis and then seek to refute this. This approach is very seriously flawed. If you only have the most reasonable hypothesis, you can only see the evidence in one way. You need other hypotheses, even if they are unreasonable. After all, reason is only a framework of expectation set up by past experience. In technology the hypothesis is the 'vision'. We imagine a possibility and then look to see how we can make it happen. So it is possible that this very intelligent Chinese culture was brought to a standstill through the absence of this key piece of mental software.

### **THE VITAMIN**

The human body needs food. It also needs vitamins. The vitamins work with key enzymes to carry out essential work. Without a key vitamin, life can stop. The 'possibility system' is a key vitamin in progress. That is why the Chinese have become so interested in my work. They see this as the key missing vitamin in their thinking. I agree. I believe that if this 'vitamin' is introduced in all schools and at all levels in society, China will become a very powerful nation indeed.

### **THE HYPOTHESIS**

I have had appointments at some of the leading universities in the world: Oxford, Cambridge, London and Harvard. In my experience (which is not comprehensive and may be out of date) totally insufficient attention is paid to the huge importance of the hypothesis and possibility in science.

Some years ago a senior person in the French national research organisation (CNRS) came to see me. He told me that his scientists had been taught to believe that science is the analysis of data. He felt that without the ability to generate hypotheses science could not advance. I agreed, because this is also my experience. Computers are now providing more and more subtle ways of analysing data. So the emphasis is moving from the hypothesis and experimental design to data analysis. This will hold back the advance of science.

### **AN EXAMPLE**

Peptic ulcer is a serious medical condition. This means an ulcer in the stomach or duodenum. Some people with such ulcers were on antacids for twenty years or more. They had to watch their diets carefully and avoid coffee, alcohol, etc., etc. The pain could be bad, and life could be miserable.

A significant proportion of hospital beds were occupied by patients with peptic ulcers. A significant proportion of the time of GP's was taken up with attention to such patients. There were rather fierce procedures called Billroth operations

which set out to remove all the stomach, or half or one-third, etc. Then a young doctor in Perth, Australia had an idea. He had a hypothesis. Perhaps peptic ulcers were caused by an 'infection'.

Everyone roared with laughter. The powerful hydrochloric acid in the stomach would destroy any bacteria, so infection was ridiculous. The doctor made a culture of the suspected offending bug (*helicobacter pylori*) and drank it. He gave himself an ulcer. Still no one believed him. Thirty (or maybe forty) years later, it turns out he was right. Today, instead of twenty years of antacids and operations to remove the stomach, you can be cured in two weeks with antibiotics! The change in treatment and suffering is astounding.

Because someone had a hypothesis.

## **SPECULATION**

Science came about precisely to do away with superstition, beliefs, speculations and wild unproven possibilities. Science came to demand certainty and proof at every stage. I shall not go into the details of the negative effect this has had on science. This is especially so in psychology, where the obsession with measurement not only holds back development but can give very misleading practical results.

Statistically, boys are better at maths than girls. Does that mean that the boy in front of you is better at maths than the girl behind? This legitimate horror of speculation also holds back the progress of science. Einstein made his extraordinary contribution through speculation. Again and again Einstein used what I would call 'provocation' to take his thinking forward. He carried out what he called 'thought experiments'. He declared that imagination was more important than knowledge. Yet throughout education there is a failure to understand the importance of possibility.

In business there is a concern for possibility in strategy development and things like scenario techniques. At the same time the 'analytic mentality' often removes the whole purpose of possibility. In a scenario process the least average scenario gets dropped (through corrections) and may be the most important one.

Much lip-service is paid to creativity, but little is done about it. As a result most organisations are operating way below the potential offered by their assets and performance. Most operate on the basis of 'keep going as you are going and solve problems as they arise'. To some 'me too' products and acquisitions may be added.

**The relationship between certainty and possibility is very little understood in society.**