Time Management Skills

Making the most of your time

This Mind Tools section shows you how to use personal time management skills. These are some of the most important career skills that you can learn.

Time Management skills are essential for successful people - these are the practical techniques which have helped the leading people in business, sport and public service reach the pinnacles of their careers.

The skills explained in the articles below help you to become reliable and effective and show you how to identify and focus on the activities that give you the greatest returns. The section finishes by explaining goal-setting, which is a vitally important skill for achieving what you want to achieve with your life.

While you are reading these articles, have a look at the time management book reviews, resources and stores on the sidebars - these will help you to develop your skills further and will support you in your regular use of time management skills.

Introduction

Time Management Skills

This chapter discusses personal time management skills. These are essential skills for effective people.

People who use these techniques routinely are the highest achievers in all walks of life, from business to sport to public service. If you use these skills well, then you will be able to function effectively, even under intense pressure. They help you to get the most out of the limited time you have.

At the heart of time management is an important shift in focus:

Concentrate on results, not on being busy!

Many people spend their days in a frenzy of activity, but achieve very little because they are not concentrating on the right things.

The 80:20 Rule

This is neatly summed up in the Pareto Principle, or the "80:20 Rule". This argues that typically 80% of unfocussed effort generates only 20% of results. *The remaining 80% of results are achieved with only 20% of the effort.* While the ratio is not always 80:20, this broad pattern of a small proportion of activity generating non-scalar returns recurs so frequently as to be the norm in many areas.

By applying the skills in this chapter you can optimize your effort to ensure that you concentrate as much of your time and energy as possible on the high payoff tasks. This ensures that you achieve the greatest benefit possible with the limited amount of time available to you.

Time Management Tools

The tools we will discuss are:

- Finding out how much your time is worth - Costing Your Time
- Making sure you concentrate on the right things - Deciding Work Priorities
- Checking how you really spend your time - Activity Logs
- Planning to solve a problem - Action Plans
- Tackling the right tasks first - Prioritized To Do Lists
- Deciding what your personal priorities should be - Personal Goal Setting

By the end of this section, you should have a much clearer understanding of how to use time to its greatest effect.

Costing Your Time

Finding Out How Much Your Time is Worth

How to Use Tool:

The first part of your focus on results should be to work out how much your time costs. This helps you to see if you are spending your time profitably.

If you work for an organization, calculate how much you cost it each year. Include your salary, payroll taxes, the cost of office space you occupy, equipment and facilities you use, expenses, administrative support, etc. If you are self-employed, work the annual running costs of your business.

To this figure add a 'guesstimate' of the amount of profit you should generate by your activity.

If you work normal hours, you will have approximately 200 productive days each year. If you work 7½ hours each day, this equates to 1,500 hours in a year.

From these figures, calculate an hourly rate. This should give a reasonable estimate of how much your time is worth - this may be a surprisingly large amount!

When you are deciding whether or not to take a task on, think about this value - are you wasting your or your organization's resources on a low yield task?

Key points:

Calculating how much your time is worth helps you to work out how whether it is worth doing particular jobs. If you have to spend much of your time doing low-yield jobs, then you can make a good case for employing an assistant.

Deciding Your Work Priorities

Finding Out What to Spend Your Time On

How to Use Tool:

An important part of focusing on results is working out what to focus on! Many people work very hard all day doing little jobs that do not actually affect the quality of their work.

This section concentrates on three areas - clarifying what you enjoy, understanding what your strengths and weaknesses are, and working out both what your job is and what constitutes excellent performance.

Doing what you enjoy

It is important for your own quality of life that you enjoy your job. If you know broadly what you like and dislike, you will be more able to move your job towards doing things that you enjoy. This is important as you are much more likely to do your job effectively if you love it than if you loathe it.

Note that almost every job has tedious or unpleasant elements to it - it is important that these parts are done properly. It is up to you over time to minimize this.

Concentrating on your strengths

It is also important to know what your talents and weaknesses are. A good way of doing this is to carry out a SWOT analysis. This provides a formal approach to evaluating your strengths and weaknesses, and the

opportunities and threats that you face. It makes a lot of sense to find a job that suits your strengths, and where your weaknesses do not matter.

Understanding how to be excellent at your job

One excellent way of ensuring that you concentrate on the right things is to agree them with your employer!

You should ask the following questions:

- *What is the purpose of the job?*
  If possible, express this in a single sentence starting with the word 'To' - for example 'To ensure effective distribution in the South East'
- *What are the measures of success?*
  Work out how your employer will decide whether you are good at your job or not. Find out what the key targets to be achieved are, and how achievement will be measured.
- *What is exceptional performance?*
  Find out what this is considered to be, and work out how to achieve it.
- *What are the priorities and deadlines?*
  You need to know this so that when you are overloaded with work, you know what to focus on.
- *What resources are available?*
  This ensures that you are using all the tools at your command.
- *What costs are acceptable?*
  This lets you know the boundaries within which you can move.
- *How does this relate to other people?*
  What is the broader picture within which you have to work?

If you have answers to these questions, you will know how to do your job in precisely the right way. If you know what exceptional performance is, you can plan to achieve it using all the resources you have available.

Key points:

This section gives you three ways of deciding your work priorities:

- *Concentrating on what you enjoy*
- *Using a SWOT analysis to work out your strengths and weaknesses.*This helps you to play to your strengths, minimize weaknesses, and move in the right direction.
- *Finally it explains how to clarify your job with your employer, and concentrate on doing well in the areas he or she considers to be most important.*

By concentrating on the right priorities you will ensure that you are always working as effectively as possible.

Activity Logs

Finding Out How You Really Spend Your Time

How to Use Tool:

Activity logs help you to analyze how you actually spend your time. The first time you use an activity log you may be shocked to see the amount of time that you waste! Memory is a very poor guide when it comes to this - it is too easy to forget time spent reading junk mail, talking to colleagues, making coffee, eating lunch, etc.

You may also be unaware that your energy levels may vary through the day - most people function at different levels of effectiveness at different times. Your effectiveness may vary depending on the amount of sugar in your blood, the length of time since you last took a break, routine distractions, stress, discomfort, or a range of other factors. There is also some good evidence that you have daily rhythms of alertness and energy.

Keeping an Activity Log

Keeping an Activity Log for several days helps you to understand how you spend your time, and when you perform at your best. Without modifying your behavior any further than you have to, note down the things you do as you do them. Every time you change activities, whether opening mail, working, making coffee, gossiping with colleagues or whatever, note down the time of the change.

As well as recording activities, note how you feel, whether alert, flat, tired, energetic, etc. Do this periodically throughout the day. You may decide to integrate your activity log with a stress diary.

Learning from Your Log

Once you have logged your time for a few days, analyze the log. You may be alarmed to see the length of time you spend doing low value jobs!

You may also see that you are energetic in some parts of the day, and flat in other parts. A lot of this can depend on the rest breaks you take, the times and amounts you eat, and quality of your nutrition. The activity log gives you some basis for experimenting with these variables.

Key points:

Activity logs are useful tools for auditing the way that you use your time. They can also help you to track changes in your energy, alertness and effectiveness throughout the day.

By analyzing your activity log you will be able to identify and eliminate time-wasting or low-yield jobs. You will also know the times of day at

which you are most effective, so that you can carry out your most important tasks during these times.

Action Plans

Small Scale Planning

How to Use Tool:

An Action Plan is a list of tasks that you have to carry out to achieve an objective. It differs from a To Do List in that it focuses on the achievement of a single goal.

Wherever you want to achieve something, draw up an action plan. This allows you to concentrate on the stages of that achievement, and monitor your progress towards it.

To draw up an Action Plan, simply list the tasks that you need to carry out to achieve your goal. This is simple, but still very useful!

Key points:

An Action Plan is a list of things that you need to do to achieve a goal. To use it, simply carry out each task in the list!

Prioritized To Do Lists

Remembering To Do All Essential Tasks, In The Right Order

How to Use Tool:

A 'To Do List' is a list of all the tasks that you need to carry out. It consolidates all the jobs that you have to do into one place. You can then prioritize these tasks into order of importance. This allows you to tackle the most important ones first.

To Do Lists are essential where you need to carry out a number of different tasks or different sorts of task, or where you have made a number of commitments. If you find that you are often caught out because you have forgotten to do something, then you need to keep a To Do List.

Whilst To Do Lists are very simple, they are also extremely powerful, both as a method of organizing yourself and as a way of reducing stress. Often problems may seem overwhelming or you may have a seemingly huge number of demands on your time. This may leave you feeling out of control, and overburdened with work.

Preparing a To Do List

The solution is often simple: write down the tasks that face you, and if they are large, break them down into their component elements. If these still seem large, break them down again. Do this until you have listed everything that you have to do. Once you have done this, run through these jobs allocating priorities from A (very important) to F (unimportant). If too many tasks have a high priority, run through the list again and demote the less important ones. Once you have done this, rewrite the list in priority order.

You will then have a precise plan that you can use to eliminate the problems you face. You will be able to tackle these in order of importance. This allows you to separate important jobs from the many time-consuming trivial ones.

Using Your To Do Lists

Different people use To Do Lists in different ways in different situations: if you are in a sales-type role, a good way of motivating yourself is to keep your list relatively short and aim to complete it every day.

In an operational role, or if tasks are large or dependent on too many other people, then it may be better to keep one list and 'chip away' at it. It may be that you carry unimportant jobs from one To Do List to the next. You may not be able to complete some very low priority jobs for several months. Only worry about this if you need to - if you are running up against a deadline for them, raise their priority.

If you have not used To Do Lists before, try them: they are one of the keys to being really productive and efficient.

Key points:

Prioritized To Do Lists are fundamentally important to efficient work. If you use To Do Lists, you will ensure that:

- you remember to carry out all necessary tasks
- that you tackle the most important jobs first, and do not waste time on trivial tasks.
- you do not get stressed by large volumes of unimportant jobs.

To draw up a Prioritized To Do List, list all the tasks you must carry out. Mark the importance of the task next to it, with a priority from A (very important) to F (unimportant). Redraft the list into this order of importance.

Now carry out the jobs at the top of the list first. These are the most important, most beneficial tasks to complete.

Personal Goal Setting

Planning to Live Your Life Your Way

How to Use Tool:

Goal setting is a formal process for personal planning. By setting goals on a routine basis you decide what you want to achieve, and then step-by-step move towards the achievement of these goals. The process of setting goals and targets allows you to choose where you want to go in life. By knowing precisely what you want to achieve, you know what you have to concentrate on to do it. You also know what is merely a distraction.

Goal setting is a standard technique used by top-level athletes, business-people and achievers in all fields. It gives you long-term vision and short-term motivation. It focuses your acquisition of knowledge and helps you to organize your resources.

By setting sharp, clearly defined goals, you can measure and take pride in the achievement of those goals. You can see forward progress in what might previously have seemed a long pointless grind. By setting goals, you will also raise your self-confidence, as you recognize your ability and competence in achieving the goals that you have set. The process of achieving goals and seeing this achievement gives you confidence that you will be able to achieve higher and more difficult goals.

Goals are set on a number of different levels: firstly you decide what you want to do with your life and what large-scale goals you want to achieve. Then you break these down into the smaller and smaller targets that you must hit so that you reach your lifetime goals. Finally, once you have your plan, you start working towards achieving it.

Starting to Set Personal Goals

This section explains how to set personal goals. It starts with your lifetime goals, and then works through a series of lower level plans culminating in a daily to-do list. By setting up this structure of plans you can break even the biggest life goal down into a number of small tasks that you need to do each day to reach the lifetime goals.

Your Lifetime Goals

The first step in setting personal goals is to consider what you want to achieve in your lifetime - setting Lifetime goals gives you the overall perspective that shapes all other aspects of your decision making.

To give a broad, balanced coverage of all important areas in your life, try to set goals in some or all of the following categories:

- *Artistic:*
  Do you want to achieve any artistic goals? If so, what?
- *Attitude:*
  Is any part of your mindset holding you back? Is there any part of the way that you behave that upsets you? If so, set goals to improve or cure the problem.
- *Career:*
  What level do you want to reach in your career?
- *Education:*
  Is there any knowledge you want to acquire in particular? What information and skills will you need to achieve other goals?
- *Family:*
  Do you want to be a parent? If so, how are you going to be a good parent? How do you want to be seen by a partner or by members of your extended family?
- *Financial:*
  How much do you want to earn by what stage?
- *Physical:*
  Are there any athletic goals you want to achieve, or do you want good health deep into old age? What steps are you going to take to achieve this?
- *Pleasure:*
  How do you want to enjoy yourself? - you should ensure that some of your life is for you!
- *Public Service:*
  Do you want to make the world a better place by your existence? If so, how?

Once you have decided your goals in these categories, assign a priority to them from A to F. Then review the goals and re-prioritize until you are satisfied that they reflect the shape of the life that you want to lead. Also ensure that the goals that you have set are the goals that you want to achieve, not what your parents, spouse, family, or employers want them to be.

How to Start to Achieve Your Lifetime Goals

Once you have set your lifetime goals, set a 25 year plan of smaller goals that you should complete if you are to reach your lifetime plan. Then set a 5 year plan, 1 year plan, 6 month plan, and 1 month plan of progressively smaller goals that you should reach to achieve your lifetime goals. Each of these should be based on the previous plan.

Finally set a daily to-do list of things that you should do today to work towards your lifetime goals. At an early stage these goals may be to read books and gather information on the achievement of your goals. This will help you to improve the quality and realism of your goal-setting.

Finally review your plans, and make sure that they fit the way in which you want to live your life.

Staying on Course

Once you have decided your first set of plans, keep the process going by reviewing and updating your to-do list on a daily basis. Periodically review the longer term plans, and modify them to reflect your changing priorities and experience.

An easy way of doing this is to use the goal-setting software like GoalPro5 (www.goalpro.com) on a daily basis - we review GoalPro on the left-hand sidebar, alternatively you can download GoalPro from Success Studios web site. GoalPro uses a similar set of categories to ones we recommend - either use theirs, or adapt the software to use ours.

Setting Goals Effectively

The following broad guidelines will help you to set effective goals:

- *State each goal as a positive statement: (positive)*
  express your goals positively - 'Execute this technique well' is a much better goal than 'don't make this stupid mistake'
- *Be precise:*
  set a precise goal, putting in dates, times and amounts so that you can measure achievement. If you do this, you will know exactly when you have achieved the goal, and can take complete satisfaction from having achieved it.
- *Set priorities:*
  where you have several goals, give each a priority. This helps you to avoid feeling overwhelmed by too many goals, and helps to direct your attention to the most important ones.
- *Write goals down: (prescription)*
  this crystallizes them and gives them more force.
- *Keep operational goals small: (make progress)*
  keep the low-level goals you are working towards small and achievable. If a goal is too large, then it can seem that you are not making progress towards it. Keeping goals small and incremental gives more opportunities for reward. Derive today's goals from larger ones.

- *Set performance goals, not outcome goals:*
  you should take care to set goals over which you have as much control as possible. There is nothing more dispiriting than failing to achieve a personal goal for reasons beyond your control. These could be bad business environments, poor judging, bad weather, injury, or just plain bad luck. If you base your goals on personal performance, then you can keep control over the achievement of your goals and draw satisfaction from them.
- *Set realistic goals: (pragmatic)*
  it is important to set goals that you can achieve. All sorts of people (parents, media, society) can set unrealistic goals for you. They will often do this in ignorance of your own desires and ambitions. Alternatively you may be naïve in setting very high goals. You might not appreciate either the obstacles in the way, or understand quite how many skills you must master to achieve a particular level of performance.
- *Do not set goals too low:*
  just as it is important not to set goals unrealistically high, do not set them too low. People tend to do this where they are afraid of failure or where they are lazy! You should set goals so that they are slightly out of your immediate grasp, but not so far that there is no hope of achieving them. No-one will put serious effort into achieving a goal that they believe is unrealistic. However, remember that your belief that a goal is unrealistic may be incorrect. If this could be the case, you can to change this belief by using imagery effectively.

Achieving Goals

When you have achieved a goal, take the time to enjoy the satisfaction of having done so. Absorb the implications of the goal achievement, and observe the progress you have made towards other goals. If the goal was a significant one, reward yourself appropriately.

With the experience of having achieved this goal, review the rest of your goal plans:

- If you achieved the goal too easily, make your next goals harder
- If the goal took a dispiriting length of time to achieve, make the next goals a little easier
- If you learned something that would lead you to change other goals, do so
- If while achieving the goal you noticed a deficit in your skills, decide whether to set goals to fix this.

Failure to meet goals does not matter as long as you learn from it. Feed lessons learned back into your goal-setting program.

Remember too that your goals will change as you mature - adjust them regularly to reflect this growth in your personality. If goals do not hold any attraction any longer, then let them go. Goal-setting is your servant, not your master - it should bring you real pleasure, satisfaction and a sense of achievement.

Example:

The best example of goal-setting that you can have is to try setting your own goals. Set aside two hours to think through your lifetime goals in each of the categories. Then work back through the 25 year plan, 5 year plan, 1 year plan, 6 month plan, a 1 month plan. Finally draw up a To Do list of jobs to do tomorrow to move towards your goals.

Tomorrow, do those jobs, and start to use goal-setting routinely!

Key points:

Goal setting is an important method of:

- Deciding what is important for you to achieve in your life
- Separating what is important from what is irrelevant
- Motivating yourself to achievement
- Building your self-confidence based on measured achievement of goals

You should allow yourself to enjoy the achievement of goals and reward yourself appropriately. Draw lessons where appropriate, and feed these back into future performance.

If you do not already set goals now is a great time to start!

End of Section 1

Creativity Tools

This section of Mind Tools explains a wide range of techniques you can use to come up with creative and imaginative solutions to the challenges you face.

The section starts by showing you how to use three systematic approaches to creativity. It then discusses some important lateral-thinking based approaches, which can be used to come up with startling and original solutions to problems. Finally it explains how to use two powerful and important problem-solving processes.

While you are reading these articles, have a look at the creativity book reviews, resources and stores on the sidebars - these can help you to develop your creativity skills further.

An Introduction

Creativity Tools

The tools in this section can help you to become more creative. They are designed to help you devise creative and imaginative solutions to problems, and help you to spot opportunities that you might otherwise miss.

The section describes the following techniques:

- Improving a product or service - *Reversal and SCAMPER*
- Creating new products, services & strategies: - *Attribute Listing, Morphological Analysis & Matrix Analysis*
- Generating many radical ideas - *Brainstorming*
- Making creative leaps - *Random Input*

- Widening the search for solutions - *Concept Fan*
- Looking at problems from different perspectives - *Reframing Matrix*
- Carrying out thought experiments - *Provocation*
- A simple process for creativity - *DO IT*
- A powerful integrated problem solving process - *Simplex*
- Subconscious problem solving

Before you continue, it is important to understand what we mean by creativity - there are two completely distinct types. The first is technical creativity, where people create new theories, technologies or ideas. This is the type of creativity we discuss here. The second is artistic creativity, which is more born of skill, technique and self-expression. Artistic creativity is beyond the scope of these articles.

Many of the techniques in this chapter have been used by great thinkers to drive their creativity. Albert Einstein, for example, used his own informal variant of *Provocation* to trigger ideas that lead to the Theory of Relativity.

Approaches to Creativity

There are two main strands to technical creativity - structured thinking and lateral thinking. Structured thinking relies on logical or structured ways of creating a new product or service. Examples of this approach are *Morphological Analysis* and the *Reframing Matrix*. The other main strand uses 'Lateral Thinking'. Examples of this are *Brainstorming*, *Random Input* and *Provocation*. Lateral Thinking has been developed and popularized by Edward de Bono, whose books you can find in the appropriate articles.

Structured Thinking & Lateral Thinking

Lateral thinking recognizes that our brains are pattern recognition systems - they do not function like computers. It takes years of training before we learn to do simple arithmetic - something that computers do very easily. On the other hand, we can instantly recognize patterns such as faces, language, and handwriting. The only computers that begin to be able to do these things do it by modeling the way that human brain cells work . Even then, computers will need to become more powerful before they approach our ability to handle patterns.

The benefit of good pattern recognition is that we can recognize objects and situations very quickly. Imagine how much time would be wasted if you had to do a full analysis every time you came across a cylindrical canister of effervescent fluid. Most people would just open their can of fizzy drink. Without pattern recognition we would starve or be eaten. We could not cross the road safely.

Unfortunately we get stuck in our patterns. We tend to think within them - solutions we develop are based on previous solutions to similar problems. Normally it does not occur to us to use solutions belonging to other patterns.

We use lateral thinking techniques to break out of this patterned way of thinking. Lateral thinking techniques help us to come up with startling, brilliant and original solutions to problems and opportunities.

It is important to point out that each type of approach has its strength. Logical, disciplined thinking is enormously effective in making products and services better. It can, however, only go so far before all practical improvements have been carried out. Lateral thinking can generate completely new concepts and ideas, and brilliant improvements to existing systems. In the wrong place, however, it can be sterile or unnecessarily disruptive.

Taking the best of each...

A number of techniques fuse the strengths of the two different strands of creativity. Techniques such as the *Concept Fan* use a combination of structured and lateral thinking. *DO IT* and Min Basadur's *Simplex* embed the two approaches within problem solving processes. While these would 'overkill' on minor problems, they provide excellent frameworks for solving difficult and serious ones.

The Creative Frame of Mind

Often the only difference between creative and uncreative people is self-perception. Creative people see themselves as creative and give themselves the freedom to create. Uncreative people do not think about creativity and do not give themselves the opportunity to create anything new.

Being creative may just be a matter of giving yourself the time to take a step back and allow yourself to ask yourself if there is a better way of doing something. Edward de Bono calls this a 'Creative Pause'. He suggests that this should be a short break of maybe only 30 seconds, but that this should be a habitual part of thinking. This needs self-discipline, as it is easy to forget.

Another important attitude-shift is to view problems as opportunities for improvement. While this is something of a cliché, it is true. Whenever you solve a problem, you have a better product or service to offer afterwards.

Using Creativity

Creativity is sterile if action does not follow from it. Ideas must be evaluated, improved, polished and marketed before they have any value. Other sections of Mind Tools lay out the evaluation, analysis and

planning tools needed to do this. They also explain the time and stress management techniques you will need when your creative ideas take off.

Have fun creating!

Reversal

Improving Products and Services

How to use tool:

Reversal is a good tool for improving a product or a service. To use it, ask the opposite of the question you want to ask, and apply the results.

Example:

Imagine that you want to improve the response of a service center. Using Reversal you would ask 'How would I reduce customer satisfaction?'. Answering this question you might give the following answers:

- Not answering the phone when customers call
- Not returning phone calls
- Have people with no product knowledge answering the phone
- Use rude staff
- Give the wrong advice
- Etc.

After using Reversal, you would ensure that staff were handling incoming phone calls efficiently and pleasantly. You would set up training programs to ensure that they were giving accurate and effective advice.

Key Points:

Reversal is a good, easy process for improving products and services. You use it by asking the exact opposite of the question you want answered, and then apply the results appropriately.

SCAMPER

A tool for generating new products and services

How to use tool:

SCAMPER is a check list that helps you to think of changes you can make to an existing product to create a new one. You can use these changes either as direct suggestions or as starting points for lateral thinking.

The changes SCAMPER stands for are:

- S - Substitute - components, materials, people

- C - Combine - mix, combine with other assemblies or services, integrate
- A - Adapt - alter, change function, use part of another element
- M - Modify - increase or reduce in scale, change shape, modifyattributes (e.g. colour)
- P - Put to another use
- E - Eliminate - remove elements, simplify, reduce to core functionality
- R - Reverse - turn inside out or upside down, also use of Reversal.

Example:

As an example, imagine that you are a manufacturer of nuts and bolts, and you were looking for new products. SCAMPER would give you:

- Substitute - use of high tech materials for niche markets - high speed steel? Carbon fibre? Plastics? Glass? Non-reactive material?
- Combine - integrate nut and bolt? Bolt and washer? Bolt and spanner?
- Adapt - put Allen key or Star head on bolt? Countersink head?
- Modify - produce bolts for watches or bridges? Produce different shaped bolts (e.g. screw in plugs)? Pre-painted green bolts?
- Put to another use - bolts as hinge pins? As axles?
- Eliminate - Eliminate nuts, washers, heads, thread, etc.
- Reverse - make dies as well as bolts, make bolts that cut threads for themselves in material, etc.

Using SCAMPER here may have helped you identify possible new products. Many of the ideas may be impractical or may not suit the equipment used by the manufacturer. However some ideas could be good starting points for new products.

SCAMPER was created by Michael Mikalko in his book book *Thinkertoys*.

Key points:

SCAMPER is an acronym for Substitute, Combine, Adapt, Modify, Put to another use, Eliminate, Reverse. This is a list of changes that you could make to existing products and services to open up new opportunities.

Attribute Listing, Morphological Analysis & Matrix Analysis

Tools for creating new products & services

Attribute Listing, Morphological Analysis and Matrix Analysis are good techniques for finding new combinations of products or services. They are sufficiently similar to be discussed together. We use Attribute Listing and Morphological Analysis to generate new products and services.

How to use tools:

To use the techniques, firstly list the attributes of the product, service or strategy you are examining. Attributes are parts, properties, qualities or design elements of the thing being looked at. For example, attributes of a pencil would be shaft material, lead material, hardness of lead, width of lead, quality, color, weight, price, etc. A television plot would have attributes of characters, actions, locations, weather, etc. For a marketing strategy you might use attributes of markets open to you, uses of the product, skills you have available, etc.

Draw up a table using these attributes as column headings. Within the columns write down as many variations of the attribute as possible. This might be an exercise that benefits from *Brainstorming*. The table should now show all possible variations of each attribute.

Now select one entry from each column. Either do this randomly or select interesting combinations. By mixing one item from each column, you will create a new mixture of components - this is a new product, service or strategy.

Finally, evaluate and improve that mixture to see if you can imagine a profitable market for it.

Example:

Imagine that you want to create a new lamp. The starting point for this might be to carry out a morphological analysis. Properties of a lamp might be power supply, bulb type, light intensity, size, style, finish, material, shade, etc.

You can set these out as column headings on a table, and then brainstorm variations:

Power Supply	Bulb Type	Light Intensity	Size	Style	Finish	Material
Battery	Halogen	Low	Very Large	Modern	Black	Metal
Mains	Bulb	Medium	Large	Antique	White	Ceramic
Solar	Daylight	High	Medium	Roman	Metallic	Concrete
Generator	Colored	Variable	Small	Art Nouveau	Terracotta	Bone
Crank			Hand held	Industrial	Enamel	Glass

Gas				Ethnic	Natural	Wood
Oil/Petrol					Fabric	Stone
Flame						Plastic

Interesting combinations might be:

- Solar powered/battery, medium intensity, daylight bulb - possibly used in clothes shops to allow customers to see the true color of clothes.
- Large hand cranked arc lights - used in developing countries, or far from a mains power supply
- A ceramic oil lamp in Roman style - used in themed restaurants, resurrecting the olive oil lamps of 2000 years ago
- A normal table lamp designed to be painted, wallpapered or covered in fabric so that it matches the style of a room perfectly

Some of these might be practical, novel ideas for the lighting manufacturer. Some might not. This is where the manufacturer's experience and market knowledge are important.

Key points:

Morphological Analysis, *Matrix Analysis* and *Attribute Listing* are useful techniques for making new combinations of products, services and strategies.

You use the tools by identifying the attributes of the product, service or strategy you are examining. Attributes might be components, , dimensions, color, weight, style, speed of service, skills assemblies available, etc.

Use these attributes as column headings. Underneath the column headings list as many variations of that attribute as you can.

You can now use the table by randomly selecting one item from each column, or by selecting interesting combinations of items. This will give you ideas that you can examine for practicality.

Notes:

- Attribute Listing focuses on the attributes of an object, seeing how each attribute could be improved.
- Morphological Analysis uses the same basic technique, but is used to create a new product by mixing components in a new way.
- Matrix Analysis focuses on businesses. It is used to generate new approaches, using attributes such as market sectors, customer needs, products, promotional methods, etc.

Brainstorming

Generating many radical ideas

How to use tool:

Brainstorming is an excellent way of developing many creative solutions to a problem. It works by focusing on a problem, and then coming up with very many radical solutions to it. Ideas should deliberately be as broad and odd as possible, and should be developed as fast as possible. Brainstorming is a lateral thinking process (see the introduction to this chapter for further information) - it is designed to help you break out of your thinking patterns into new ways of looking at things.

During brainstorming sessions there should be no criticism of ideas - you are trying to open possibilities and break down wrong assumptions about the limits of the problem. Judgment and analysis at this stage will stunt idea generation.

Ideas should only be evaluated once the brainstorming session has finished - you can then explore solutions further using conventional approaches.

If your ideas begin to dry up, you can 'seed' the session with, for example, a random word (see *Random Input*).

Individual Brainstorming

When you brainstorm on your own you will tend to produce a wider range of ideas than with group brainstorming - you do not have to worry about other people's egos or opinions, and can therefore be more freely creative. You may not, however, develop ideas as effectively as you do not have the experience of a group to help you.

When Brainstorming on your own, it can be helpful to use Mind Maps to lay out and develop ideas.

Group Brainstorming

Group brainstorming can be very effective as it uses the experience and creativity of all members of the group. When individual members reach their limit on an idea, another member's creativity and experience can take the idea to the next stage. Group brainstorming therefore tends to develop ideas in more depth than individual brainstorming.

Brainstorming in a group can be risky for individuals. Valuable but strange suggestions may appear stupid at first sight. You therefore need to chair sessions tightly so that uncreative peop1le do not crush these ideas and leave group members feeling humiliated.

To run a group brainstorming session effectively, do the following:

- Define the problem you want solved clearly, and lay out any criteria to be met.
- Keep the session focused on the problem
- Ensure that no-one criticizes or evaluates ideas during the session. Criticism introduces an element of risk for group members when putting forward an idea. This stifles creativity and cripples the free running nature of a good brainstorming session.
- Encourage an enthusiastic, uncritical attitude among members of the group. Try to get everyone to contribute and develop ideas, including the quietest members of the group
- Let people have fun brainstorming. Encourage them to come up with as many ideas as possible, from solidly practical ones to wildly impractical ones. Welcome creativity.
- Ensure that no train of thought is followed for too long
- Encourage people to develop other people's ideas, or to use other ideas to create new ones
- Appoint one person to note down ideas that come out of the session. A good way of doing this is to use a flip chart. This should be studied and evaluated after the session.

Where possible, participants in the brainstorming process should come from as wide a range of disciplines as possible. This brings a broad range of experience to the session and helps to make it more creative.

Key points:

Brainstorming is a way of generating radical ideas. During the brainstorming process there is no criticism of ideas - free rein is given to people's creativity. Criticism and judgment cramp creativity.

Individual brainstorming is best for generating many ideas, but tends to be less effective at developing them. Group brainstorming tends to develop fewer ideas, but takes each idea further. Group brainstorming needs formal rules for it to work smoothly.

Reframing Matrix

Looking at problems with a different perspective

How to use tool:

A Reframing Matrix is a simple technique that helps you to look at business problems from a number of different viewpoints. It expands the range of creative solutions that you can generate.

The approach relies on the fact that different people with different experience approach problems in different ways. What this technique

helps you to do is to put yourself into the minds of different people and imagine the solutions they would come up with.

We do this by putting the question to be asked in the middle of a grid. We use boxes around the grid for the different perspectives. This is just an easy way of laying the problem out - if it does not suit you, change it.

We will look at two different approaches to the reframing matrix - you could, however, use this approach in many different ways.

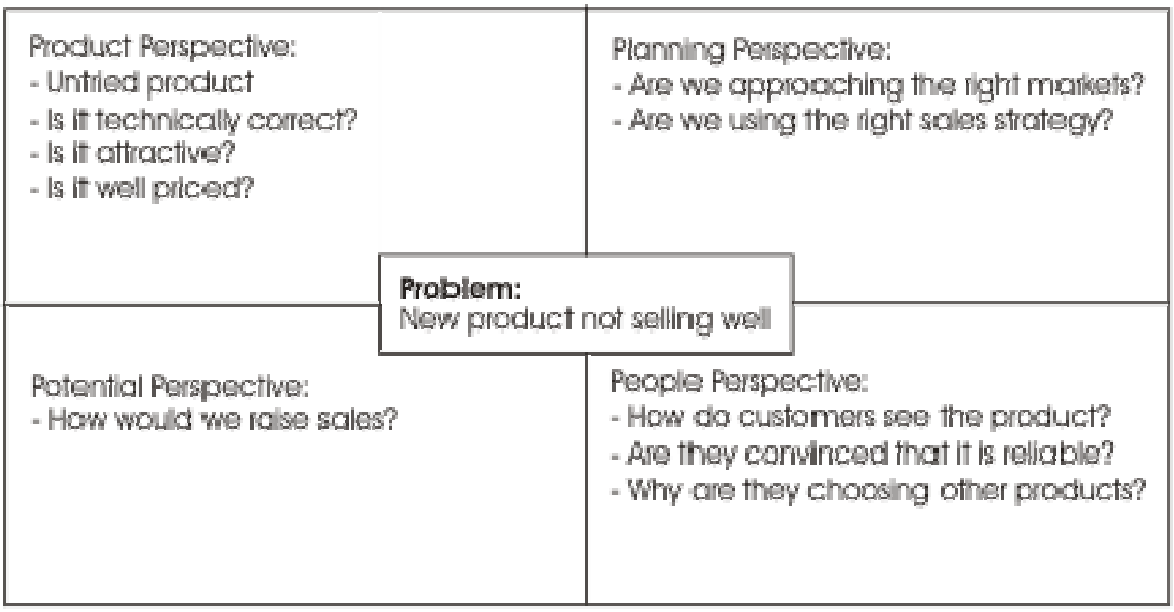
The 4 Ps Approach

This relies on looking at a problem from different perspectives within a business. The 4 Ps approach looks at problems from the following viewpoints:

- Product perspective: is there something wrong with the product?
- Planning perspective: are our business or marketing plans at fault?
- Potential perspective: if we were to seriously increase our targets, how would we achieve these increases?
- People perspective: why do people choose one product over another?

An example of this approach is shown below:

Figure 1. Reframing matrix example - New product not selling well



The 'Professions Approach'

Another approach to using a reframing matrix is to look at the problem from the viewpoints of different specialists. The way, for example, that a

doctor looks at a problem would be different from the approach a civil engineer would use. This would be different from a sales manager's perspective.

Key points:

The Reframing Matrix is a formal technique used to look at problems from different perspectives. It helps to expand the number of options open to you for solving a problem.

You draw up a reframing matrix by posing a question in a box in the middle of a piece of paper. You then draw a grid around it. Each cell will contain approaches to the problem, seen from one perspective.

One way of using the technique is the '4 Ps' approach. This looks at the problem from the following viewpoints: Product, Planning, Potential and People. Another set of perspectives is to ask yourself how different professionals would approach the problem. Useful professions to consider would be medical doctors, engineers, systems analysts, sales managers, etc.

Concept Fan

Widening the Search for Solutions

How to use tool:

The Concept Fan is a way of finding different approaches to a problem when you have rejected all obvious solutions. It develops the principle of 'taking one step back' to get a broader perspective.

To start a Concept Fan, draw a circle in the middle of a large piece of paper. Write the problem you are trying to solve into it. To the right of it radiate lines representing possible solutions to the problem. This is shown in Figure 1.

It may be that the ideas you have are impractical or do not really solve the problem. If this is the case, take a 'step back' for a broader view of the problem.

Do this by drawing a circle to the left of the first circle, and write the broader definition into this new circle. Link it with an arrow to show that it comes from the first circle (see Figure 2).

Use this as a starting point to radiate out other ideas (Figure 3).

If this does not give you enough new ideas, you can take yet another step back (and another, and another…) (Figure 4).

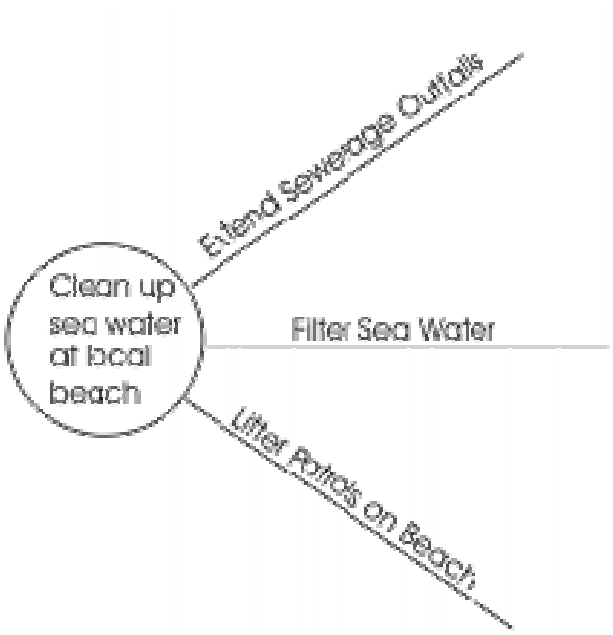


Figure 1: First Stage of a Concept Fan

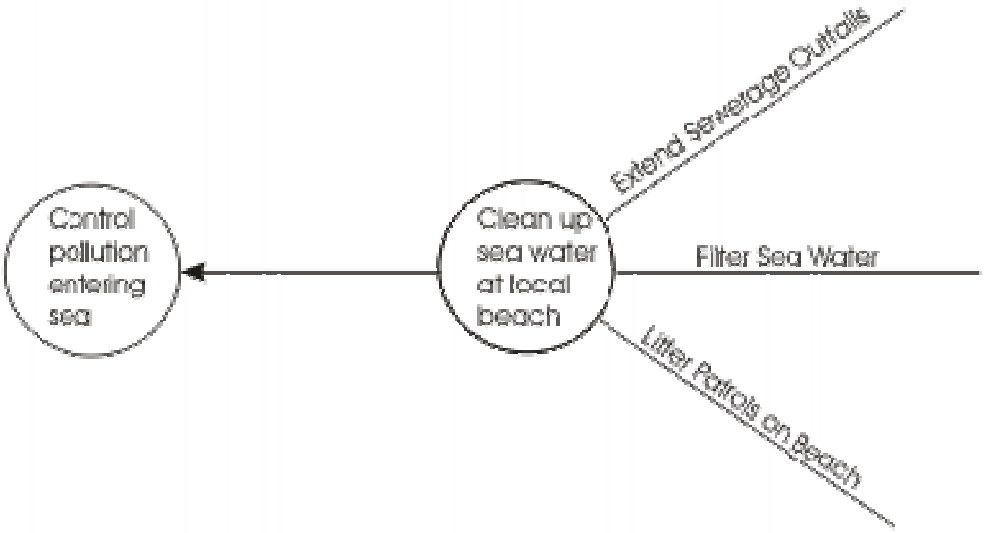


Figure 2: Broadening the Problem Definition on a Concept Fan

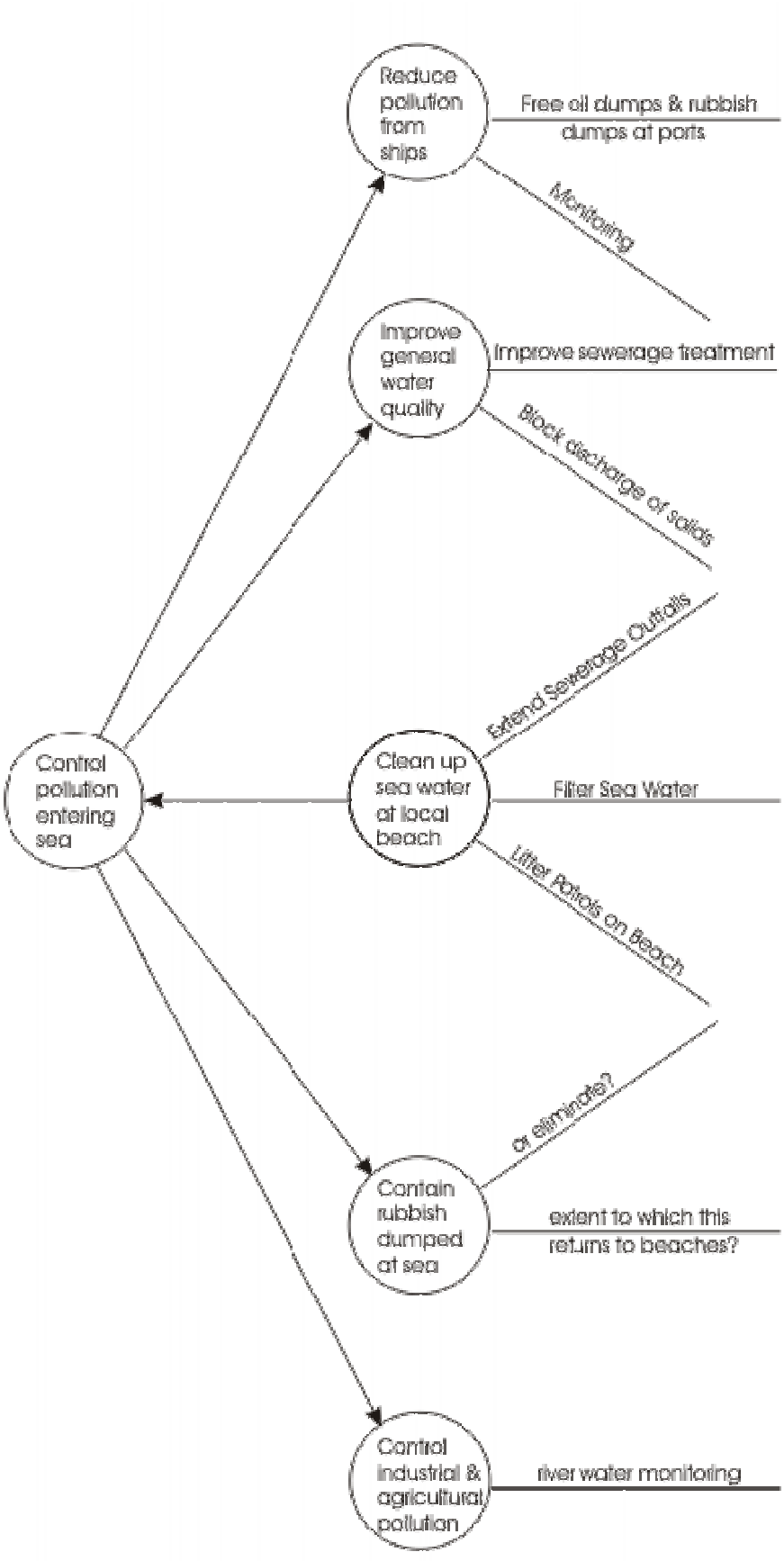


Figure 1.6.3: Radiating Ideas from the Broader Problem Definition

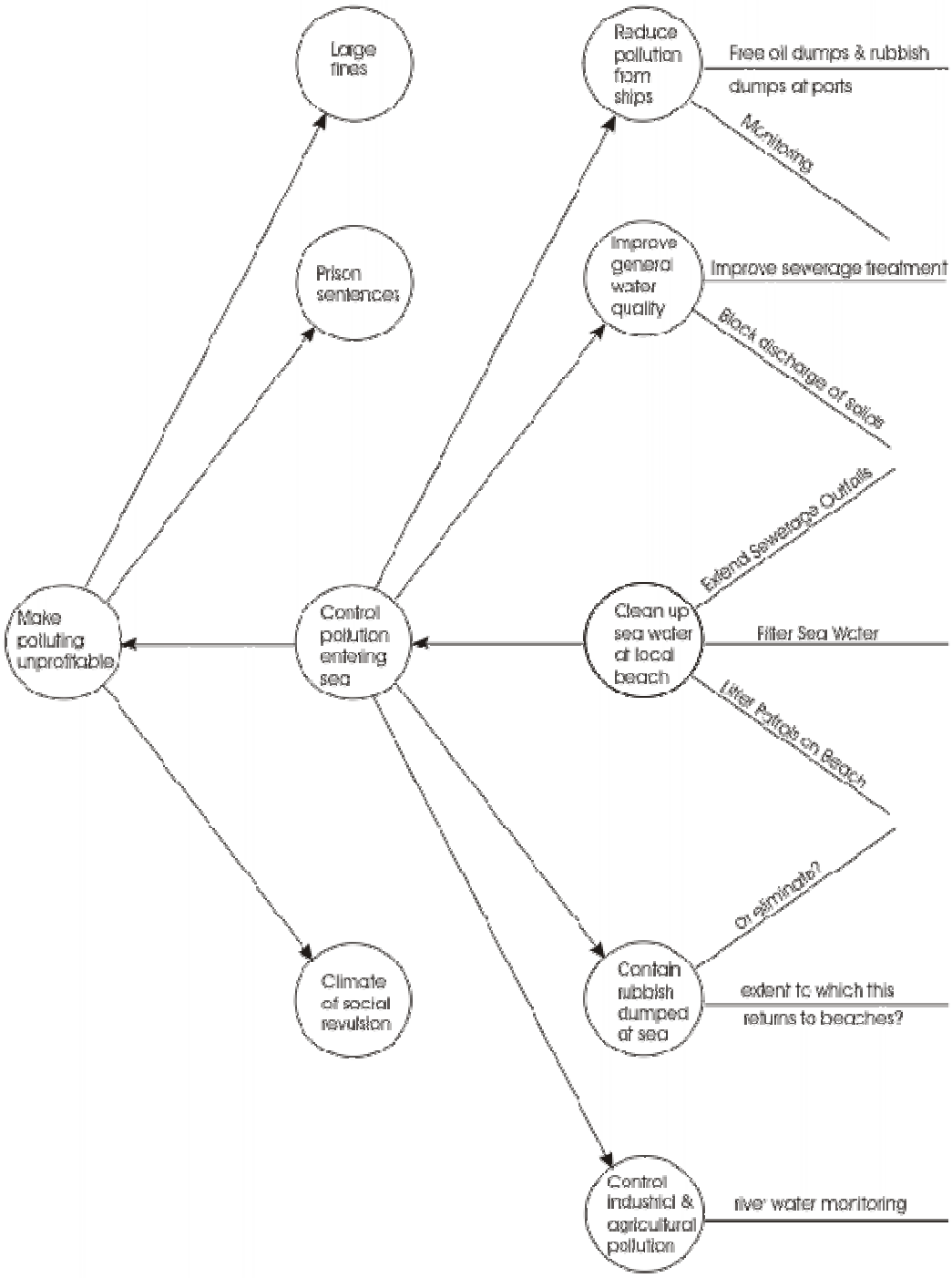


Figure 4: A Developed Concept Fan

The idea of the Concept Fan was devised by Edward de Bono in his book *Serious Creativity* - this is one of the books reviewed on right-hand side of this page. The book shows how to use many similar tools.

Key points:

The *Concept Fan* is a useful technique for widening the search for solutions when you have rejected all obvious approaches. It gives you a clear framework within which you can take 'one step back' to get a broader view of a problem.

To start a concept fan, write the problem in the middle of a piece of paper. Write possible solutions to this problem on lines radiating from this circle.

If no idea is good enough, redefine the problem more broadly. Write this broader definition in a circle to the left of the first one. Draw an arrow from the initial problem definition to the new one to show the linkage between the problems. Then radiate possible solutions from this broader definition.

Keep on expanding and redefining the problem until you have a useful solution.

Random Input

Making Creative Leaps

Random Input is a lateral thinking tool. It is very useful when you need fresh ideas or new perspectives during problem solving.

As explained in the introduction to this chapter, we tend to think by recognizing patterns. We react to these patterns based on past experience and extensions to that experience. Sometimes, though, we get stuck inside them - within a particular pattern there may be no good solution to a particular sort of problem.

Random input is a technique for linking another thinking pattern into the one we are using. Along with this new pattern comes all the experience you have connected to it.

How to use tool:

To use *Random Input*, select a random noun from either a dictionary or a pre-prepared word list. It often helps if the noun is something that can be seen or touched (e.g. 'helicopter', 'dog') rather than a concept (e.g. 'fairness'). Use this noun as the starting point for brainstorming your problem.

You may find that you get good insights if you select a word from a separate field in which you have some expertise.

If you choose a good word, you will add a range of new ideas and concepts to your brainstorming. While some will be useless, hopefully you will gain some good new insights into your problem. If you persist, then at least one of these is likely to be a startling creative leap.

Example:

Imagine that you are thinking about the problem of reducing car pollution. So far in thinking through the problem you have considered all the conventional solutions of catalytic conversion and clean fuels.

Selecting a random noun from the titles of the books in a book case you might see the word 'Plants'. Brainstorming from this you could generate a number of new ideas:

- Plant trees on the side of roads to convert CO_2 back into oxygen
- Similarly, pass exhaust gases through a soup of algae to convert CO_2 back into oxygen. Perhaps this is how an 'air scrubber' in a space craft works?
- Put sulfur-metabolizing bacteria into an exhaust gas processor to clean up exhaust gases. Would nitrogen compounds fertilize these bacteria?
- Another meaning of 'Plant' is factory. Perhaps exhaust gases could be collected in a container, and sent to a special plant to be cleaned? Perhaps you could offload these gases at the same time as you fill up with fuel?

These ideas are very raw. Some may be wrong or impractical. One of them might be original and the basis of some useful development.

Key points:

Random input is an excellent way of getting new perspectives on a problem. It often leads to startling creative leaps.

It provides an easy way of breaking out of restrictive thinking patterns. It helps you to link in whole ranges of new solutions that you would not otherwise associate with the problem.

The best words to use are concrete nouns, which may come from areas in which you have some expertise. Nouns should not, however, come from the same field as the problem you are considering - the whole idea of Random Input is to link in new thinking patterns, not to stay inside old ones.

Provocation

Carrying Out Thought Experiments

How to use tool:

Provocation is an important lateral thinking technique. Just like *Random Input*, it works by moving your thinking out of the established patterns that you use to solve problems.

As explained earlier, we think by recognizing patterns and reacting to them. These reactions come from our past experiences and logical

extensions to those experiences. Often we do not think outside these patterns. While we may know the answer as part of a different type of problem, the structure of our brains makes it difficult for us to link this in.

Provocation is one of the tools we use to make links between these patterns.

We use it by making deliberately stupid statements (Provocations), in which something we take for granted about the situation is not true. Statements need to be stupid to shock our minds out of existing ways of thinking. Once we have made a provocative statement, we then suspend judgment and use that statement to generate ideas. Provocations give us original starting points for creative thinking.

As an example, we could make a statement that 'Houses should not have roofs'. Normally this would not be a good idea! However this leads one to think of houses with opening roofs, or houses with glass roofs. These would allow you to lie in bed and look up at the stars.

Once you have made the Provocation, you can use it in a number of different ways, by examining:

- the consequences of the statement
- what the benefits would be
- what special circumstances would make it a sensible solution
- the principles needed to support it and make it work
- how it would work moment-to-moment
- what would happen if a sequence of events was changed
- etc.

You can use this list as a check list.

Edward de Bono has developed and popularize use of Provocation by using the word 'Po'. 'Po' stands for 'Provocative operation'. As well as laying out how to use Provocation effectively, he suggests that when we make a Provocative statement in public the we label it as such with 'Po' (e.g. 'Po: the earth is flat'). This does rely on all members of your audience knowing about Provocation!

Edward de Bono's book *Serious Creativity* explores this sort of technique in detail.

As with other lateral thinking techniques, Provocation does not always produce good or relevant ideas. Often, though, it does. Ideas generated using Provocation are likely to be fresh and original.

Example:

The owner of a video-hire shop is looking at new ideas for business to compete with the Internet. She starts with the provocation 'Customers should not pay to borrow videos'. She then examines the provocation:

- *Consequences:* The shop would get no rental revenue and therefore would need alternative sources of cash. It would be cheaper to borrow the video from the shop than to download the film or order it from a catalogue.
- *Benefits:* Many more people would come to borrow videos. More people would pass through the shop. The shop would spoil the market for other video shops in the area.
- *Circumstances:* The shop would need other revenue. Perhaps the owner could sell advertising in the shop, or sell popcorn, sweets, bottles of wine or pizzas to people borrowing films. This would make her shop a one-stop 'Night at home' shop. Perhaps it would only lend videos to people who had absorbed a 30 second commercial, or completed a market research questionnaire.

After using the *Provocation*, the owner of the video shop decides to run an experiment for several months. She will allow customers to borrow the top ten videos free (but naturally will fine them for late return). She puts the videos at the back of the shop. In front of them she places displays of bottles of wine, soft drinks, popcorn and sweets so that customers have to walk past them to get to the videos. Next to the film return counter she sells merchandise from the top ten films being hired.

If the approach is a success she will open a pizza stand inside the shop.

Key points:

Provocation is an important lateral thinking technique that helps to generate original starting points for creative thinking.

To use provocation, make a deliberately stupid comment relating to the problem you are thinking about. Then suspend judgment, and use the statement as the starting point for generating ideas.

Often this approach will help you to generate completely new concepts.

DO IT

A Simple Process for Creativity

How to use tool:

DO IT is a process for creativity.

Techniques earlier in this chapter focus on specific aspects of creative thinking. DO IT bundles them together, and introduces formal methods of problem definition and evaluation. These help you to get the best out of the creativity techniques.

DO IT is an acronym that stands for:
D - Define problem

O - Open mind and apply creative techniques
I - Identify best solution
T - Transform

These stages are explained in more detail below:

1. Define Problem

This section concentrates on analyzing the problem to ensure that the correct question is being asked. The following steps will help you to do this:

- Check that you are tackling the problem, not the symptoms of the problem. To do this, ask yourself why the problem exists repeatedly until you get to the root of it.
- Lay out the bounds of the problem. Work out the objectives that you must achieve and the constraints that you are operating under.
- Where a problem appears to be very large, break it down into smaller parts. Keep on going until each part is achievable in its own right, or needs a precisely defined area of research to be carried out. See *Drill-Down* for a detailed description of this process.
- Summarize the problem in as concise a form as possible. Robert W. Olsen suggests that the best way to do this is to write down a number of 2 word problem statements and choose the best one.

2. Open Mind and Apply Creative Techniques

Once you know the problem that you want to solve, you are ready to start generating possible solutions. It is very tempting just to accept the first good idea that you come across. If you do this, you will miss many even better solutions.

At this stage of DO IT we are not interested in evaluating ideas - we are trying to generate as many different ideas as possible. Even bad ideas may be the seeds of good ones.

You can use the whole battery of creativity techniques covered earlier in this section to search for possible solutions. Each tool has its particular strengths and benefits, depending on the problems that you want to solve. While you are generating solutions, remember that other people will have different perspectives on the problem - it will almost certainly be worth asking for the opinions of your colleagues as part of this process.

3. Identify the Best Solution

Only at this stage do you select the best of the ideas you have generated. It may be that the best idea is obvious. Alternatively, it may

be worth examining and developing a number of ideas in detail before you select one.

The *Decision Making Techniques* section of Mind Tools explains a range of excellent decision making techniques. *Decision Tree Analysis* and *Force Field Analysis* are particularly useful. These will help you to choose between the solutions available to you.

When you are selecting a solution, bear in mind your own or your organization's goals. Often decision-making becomes easy once you know these.

4. Transform

Having identified the problem and created a solution to it, the final stage is to implement this solution. This involves not only development of a reliable product from your idea, but all the marketing and business side as well. This may take a great deal of time and energy.

Many very creative people fail at this stage. They will have fun creating new products and services that may be years ahead of what is available on the market. They will then fail to develop them, and watch someone else make a fortune out of the idea several years later.

The first stage in transforming an idea is to develop an *Action Plan* for the transformation. This may lead to creation of a Business or Marketing Plan. Once you have done this, the work of implementation begins!

Key points:

DO IT is a structured process for creativity. Using DO IT ensures that you carry out the essential groundwork that helps you to get the most out of creativity tools.

These steps are:

1. Problem Definition: During this stage you apply a number of techniques to ensure that you are asking the right question.
2. Open Mind: Here you apply creativity techniques to generate as many answers as possible to the question you are asking. At this stage you are not evaluating the answers.
3. Identify the best solution: Only at this stage do you select the best solutions from the ones you came up with in step 2. Where you are having difficulty in selecting ideas, use formal techniques to help.
4. Transform: The final stage is to make an Action Plan for the implementation of the solution, and to carry it out. Without implementation, your creativity is sterile.

Simplex

A Powerful Integrated Problem-Solving Process

How to use tool:

Simplex is an industrial-strength creativity tool. It takes the approach of *DO IT* to the next level of sophistication.

Rather than seeing creativity as a single straight-line process, Simplex sees it as the continuous cycle it should be. Completion and implementation of one cycle of creativity leads straight into the next cycle of creative improvement.

Simplex uses the following eight stages:

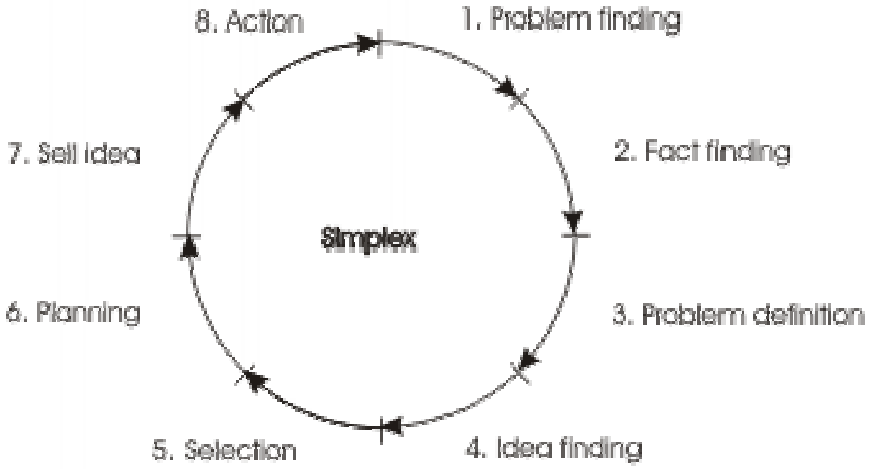


Figure 1: The Simplex Process

These are explained below:

1. Problem finding

Often finding the right problem to solve is the most difficult part of the creative process. When using Simplex, actively seek problems out - wherever they exist you have opportunities for change and improvement.

Problems may be obvious, or can be flushed out using trigger questions like the ones below:

- What would your customers want you to improve?
- What could they be doing better if we could help them?
- Who else could we help using our core competences?

- What small problems do we have which could grow into bigger ones?
- What slows our work or makes it more difficult? What do we often fail to achieve?
- How can we improve quality?
- What are our competitors doing that we could do?
- What is frustrating and irritating?

These questions deal with problems that exist now. It is also useful to try to look into the future. Think about how you expect markets and customers to change over the next few years; the problems you may experience as your organization expands; and social, political and legal changes that may affect it.

At this stage you may not have enough information to formulate your problem precisely. Do not worry about this until step 3!

2. Fact Finding

The next stage is to find out as much information relating to the problem as possible.

This gives you the depth of knowledge you need to:

- Use the best ideas your competitors have had
- Understand customers needs in more detail
- Know what has already been tried
- Fully understand any processes, components, services or technologies that you may need to use
- Ensure that the benefits of solving the problem will be worth the effort you will put into it

This stage also involves assessing the quality of the information that you have. Here it is worth listing your assumptions and checking that they are correct.

3. Problem definition

By the time you reach this stage, you should know roughly what the problem is and should have a good understanding of the facts relating to it. From here the thing to do is to crystallize the exact problem or problems you want to solve.

It is important to solve a problem at the right level. If you ask questions that are too broad, then you will never have enough resources to answer them effectively. If you ask questions that are too narrow, you may end up fixing symptoms of a problem, rather than the problem itself.

Min Basadur (who created the Simplex Process) suggests using the question 'Why?' to broaden a question, and 'What's stopping you?' to narrow it. For example, if your problem is one of trees dying, ask 'Why do

I want to keep trees healthy?'. This might broaden the question to 'How can I maintain the quality of our environment?'.

A 'What's stopping you?' here could be 'I do not know how to control a disease killing the tree'.

Big problems are normally made up of many smaller ones. This is the stage at which you can use a technique like Drill-Down to break the problem down to its component parts.

4. Idea finding

The next stage is to generate as many ideas as possible. Ways of doing this range from asking other people for their opinions, through programmed creativity tools and lateral thinking techniques to brainstorming.

Do not evaluate ideas during this stage - concentrate on generating many ideas as possible. Bad ideas often trigger good ones.

5. Selection & Evaluation

Once you have a number of possible solutions to your problem, it is time to select the best one.

The best solution may be obvious. If it is not, then it is important to think through the criteria you will use to select the best idea. The *Decision Making Techniques* section of Mind Tools lays out a number of good methods for this. Particularly useful techniques may be *Decision Trees*, *Paired Comparison Analysis* and *Grid Analysis*.

Once you have selected an idea, develop it as far as possible. It is then essential to evaluate it to see if it is good enough to be worth using. It is important not to let your ego get in the way of your common sense. If your idea does not give big enough benefit, then either see if you can generate more ideas, or restart the whole process. You can waste years of your life developing creative ideas that no-one wants.

There are two excellent techniques for doing this. One is Edward de Bono's *6 Thinking Hats*, which is an excellent tool for qualitative analysis. The other is *Cost/Benefit Analysis*, which gives you a good basis for financially based decisions.

6. Planning

Once you have selected an idea, and are confident that your idea is worthwhile, this is the time to plan its implementation.

The best way of doing this is to set this out as an Action Plan, which lays out the who, what, when, where, why and how of making it work. For large projects it may be worth using more formal planning techniques.

7. Sell Idea

Up to this stage you may have done all this work on your own or with a small committee. Now you will have to sell the idea to the people who must support it. This might be your boss, a bank manager or other people involved with the project.

In selling the project you will have to address not only the practicality of the project, but also things such internal politics, hidden fear of change, etc.

8. Action

Finally, after all the creativity and preparation, comes action! This is where all the careful work and planning pays off.

Once the action is firmly under way, return to stage 1, Problem Finding, to continue improving your idea.

Min Basadur's book, The Power of Innovation, explores this process in much more detail - the book is reviewed on the right hand side bar.

Key points:

The Simplex Process is a powerful, sophisticated approach to innovation. It is suitable for projects and organizations of almost any scale.

The Process is an eight stage cycle. On completion of the eight stages you start it again to find and solve another problem. This helps to ensure continuous improvement.

Stages in the process are:

1. Problem finding
2. Fact finding
3. Problem Definition
4. Idea Finding
5. Selection and Evaluation
6. Planning
7. Selling of the Idea
8. Action

By moving through these stages you ensure that you solve the most significant problems with the best solutions available to you. This process can help you to be intensely creative.

End of Section 5