Creative Problem Solving

Creative Problem

Solving Process



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| Think about the step(s) you’ve been allocated. What needs to be considered and what actions might you take at this step?  |
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| Identification |  |
| Investigation |  |
| Idea Generation |  |
| Incubation |  |
| Inspiration |  |
| Improvement |  |
| Implementation |  |

Wide Angle Lens



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| **Tip:** You are not restricted to one ‘answer’ to each “Why?” question. |

Learning Points:

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Getting to the Root

Blumbers and Company have a problem in their administration department, where too many errors are being made when keying details of orders onto customer records.

Even though the work is checked by an individual’s supervisor the number of errors has escalated by 25%.

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| What should the manager do? |

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The manager decides to use ‘Getting to the Root’ to try to identify the root causes of the problems, and the results are shown above.

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| How does this process help them? What options now become apparent? |

Learning Points

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Reframe

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|  | Consider where else this or a similar problem exists.What would you do in that situation?How can the ideas generated be related back to the original problem/situation? |  |
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Example

A top secret government think tank is targeted with resolving the problem of road congestion. They decide to use Reframe as a technique to achieve this and think about where else a similar problem exists. They decide to look at the problem of preventing problems caused by rivers flooding after heavy rain.

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| **Ideas for solving the reframed problem:*** Build dams to hold water until it can be released slowly.
* Create flood planes to allow water to spread safely.
* Build walls to stop flooding in built up areas.
* Build houses higher off the ground so less damage caused if river does flood.
* Build drains so water is drained away underground.
 | **How we could apply these ideas to road congestion:*** Keep people at home and stagger leaving times. Perhaps we could give people a time slot in which to travel?
* Allow the hard shoulders to be used by normal traffic during peak periods.
* Restrict traffic going into built up areas.
* Build flyovers.
* Build underground roads to create more space on the surface. Build an underground railway network?
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How Would You Reframe These Problems?

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| Our company runs a gym. How can we increase the number of members in the face of growing competition from the tennis club down the road? |  |
| We run a company in an area where many other companies are competing for the same staff. There aren’t enough skilled staff to go around. |  |
| Our car park is too small for the number of people who want to drive to work. |  |
| A major competitor has just opened up in the area. How will we survive? |  |
| Due to a small fire, our offices have had to be closed and we need to find a way of keeping going during the rebuilding. |  |

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Forced Connections

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|  | Pick a random object.Force a link between the object and the problem/situation you have.What ideas does this give you?Can you develop these? |  |
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Example

A top secret government think tank is targeted with resolving the problem of global warming. They decide to use Forced Connections as a technique to generate ideas and select some random objects from the toy box. Dennis selects a rubber fish and generates the following thoughts and ideas by forcing a link between it and the problem of global warming.

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| **Ideas Generated by the Fish:**Fish have adapted to the particular environments they live in. Man may need to adapt to changes in his environment that are unavoidable.Fish move in schools that seem to move as one body. People will need to work together as one body in order to achieve meaningful changes in order to limit the impact of global warming.Fish live in the sea. As sea levels rise taking more valuable land, perhaps man will need to learn to live in the sea too. Perhaps, for example, communities could live on floating platforms that preserve essential land for growing food.Fish are cold-blooded, which means their internal body temperature changes as the surrounding temperature changes. ‘Intelligent’ fabrics that managed our core temperature could reduce the need for external heating produced from burning fossil fuels.The toy fish is made of a rubber type substance. Rubber comes from the latex of rubber trees, which is also a source of environmentally friendly wood. Perhaps we should generate incentives for poor farmers to plant rubber trees – for example, as part of a carbon offsetting scheme where the wealthy West pay poor farmers elsewhere to offset their carbon use.  |

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| Notes: |

Idea Evaluation

Unlike idea generation, where allowing the mind to wander and form random links can be extremely beneficial, evaluation requires structure.

Thinking Hats

One of Edward de Bono’s many contributions to the field of creativity and innovation has been his six thinking hats.[[1]](#footnote-1) De Bono argues that one of the main difficulties with thinking is confusion. We try to do too much at once. Emotions, logic, information, hope and creativity all crowd in on us.

Certain types of thinking can be allowed to dominate the evaluation of ideas. For example, too much weight can be attached to one negative comment, effectively damning an idea before its positive aspects have even been considered. Alternatively, we can become so carried away with our enthusiasm for an idea, that we overlook or ignore the potential pitfalls.

Using CROM

The process for evaluating ideas explained on the following pages is inspired by Edward de Bono’s thinking hats, but uses just four stages.

It can be remembered as CROM:

1. Clarity.
2. Risks.
3. Optimism.
4. Modification.

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Stage One - Clarity

Stage One is about ensuring all of those involved in evaluating the idea have a clear and consistent understanding of what it is. It provides an opportunity to share any known factual information about the idea and for those owning the idea to ensure the idea has been explained clearly.

*At this stage only factual information should be shared*. This is not the time for opinions or for individuals to start identifying problems or opportunities within the idea.

List all the key information you can about the idea. To help you, ask questions like:

* What is the idea?
* What problem is the idea intended to solve?
* How was the idea generated?
* How much will it cost?
* How long will it take to implement?
* What competition exists?
* What market research has been undertaken?
* When is it intended to be implemented?
* Who will be involved/affected?
* What training will be required?

Depending upon how far the idea has been developed, you may not be able to answer all applicable questions at this stage. The important thing is that all available factual information is shared, and that everyone has a consistent understanding of what is being evaluated. Remember, at this stage it is important to retain a neutral and objective manner. Do not attempt to interpret the facts.

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Stage Two - Risks

This is the stage at which the potential pitfalls, problems or dangers within an idea are identified and highlighted. This is the time to get all the negative thoughts out into the open.

Questions you might ask at this stage include:

* What could go wrong?
* What’s wrong with the idea?
* Where are the potential dangers?
* What don’t you like?

At this stage, subjective judgements are allowed. All concerns should be recorded.

Stage Three - Optimism

This is the time for optimistic thinking, when all of the things liked about the idea, potential benefits and opportunities are identified and highlighted.

Questions you might ask at this stage include:

* What are the benefits?
* What opportunities could be created?
* What do we like about the idea?
* What’s the best thing about it?
* What could go right?

At this stage, subjective judgements are allowed, but it is very important that you don’t revert to Stage Two here, allowing negative comments to be made. The facilitator will need to ensure focus is kept on the positive.

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Stage Four - Modification

This stage provides an opportunity to refer back to Stage Two and try to identify ways in which the objections and concerns could be overcome. This is the creative stage of evaluation where suggestions for adapting or changing the idea can be made.

Questions you might ask at this stage include:

* How can we overcome the objections?
* How could the idea be made better?
* What improvements can we suggest?
* How could the idea be adapted to help avoid the pitfalls?

If you significantly change the idea as a result of Stage Four, simply go back to Stage One and repeat the process for the new idea, refining it until you reach a point where the consensus view is either that the idea is worth progressing to pilot/trial, or that it should be discarded.

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# Evaluating CROM

Clarity

1. What are the key features of CROM?
2. What rules should you follow when using it?

Risks

1. What are the disadvantages of using this approach?

Optimism

1. What are the advantages of this approach?

Modification

1. How can you manage or overcome the disadvantages?

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| Notes: |

Implementing

Solutions

It’s a promising solution,

so here’s what we are

going to do with it



Promote

Evaluate

Test

Evaluate

Roll Out

Many great ideas fall down at the implementation stage. Solutions that are badly implemented or rushed can lose credibility or fail completely.

Peter

Any implementation must be carefully planned and should follow the process outlined by the PETER model.

Promote the Idea

It is essential to build support for the change required by your solution, especially from those who will be affected by it. An imposed change that has no support is much less likely to succeed.

**A Suggested Model for Promoting Your Solution:**

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| Summarise | * Explain the objective.
* Outline the solution.
* Highlight the benefits.
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| Explain the benefits | * Detail the benefits. How will the change benefit those you are addressing?
 |
| Provide background | * Explain the process that was followed and how decisions were made.
 |
| Detail action | * Explain what will happen.
* Explain when it will happen.
* Explain who will be involved.
* Explain how it will happen.
* Explain why it will happen this way.
 |
| Invite feedback | * Invite questions, concerns, comments or suggestions.
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Evaluate

At this stage you are not so much evaluating the idea – that should already have been done. This is more to do with considering how the solution and the changes required have been embraced by those affected.

* Do you need to do more to address concerns?
* What level of support do you have?
* How can you build support?
* Who do you need to influence?
* Can you make any adjustments to the solution to overcome any strong concerns of objections?

Test

Ideally every new solution/change should be tested in controlled circumstances before being rolled out. This is not always possible, however.

A pilot gives you an opportunity to see what might happen when the change is more widely applied, and gives you a further opportunity to identify and resolve potential problems in the final evaluation. This will help to ensure that support continues after a change is fully implemented. A problematic introduction can result in any initial support vanishing very quickly.

Evaluate

This is your opportunity to evaluate with all those involved the success of the test/pilot.

The evaluation process may involve, for example:

* Obtaining feedback from those involved in the test.
* Checking that the implementation went according to plan.
* Looking to see if anything occurred that wasn't envisaged.

Roll Out

Only when you are satisfied that the test has been successful should you proceed to roll out.

*Roll out isn't the end of the process. Change is a continuous cycle – you should constantly review what you do and identify new problems and opportunities.*

Learning Points

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The Learning Journey

Your Challenge

Your challenge is to create a representation of the journey you’ve been on since you embarked on this period of learning and where it will take you in the future.

You should try to make your representation as creative and visual as possible.

It should include:

**Where You Started**

For this you might like to consider:

* How did you feel about the training before you came on it?
* What did you hope to achieve?
* Where do you feel you were then, in retrospect, compared to now?
* How far have you come since you started on this learning path?
* What feelings or beliefs did you have that have changed or adapted?

**Where You Are Now**

For this you might like to think about:

* What skills, knowledge or insights have you gained?
* How has the learning impacted you?
* What, if anything, has changed about your perspective, outlook or beliefs, including beliefs about yourself?

**Where The Learning You’ve Acquired Will Take You**

For this you might like to think about:

* How will your behaviours change as a result of this training?
* What are you going to do differently?
* How will you implement the learning back in the workplace?
* What are your short, medium and long-term goals?
* What will have changed in 12 months because of the skills, knowledge or new behaviours you’ve learnt?

Within your representation, highlight key moments in the journey. These might be lightbulb moments you’ve experienced, challenges you’ve faced, or, looking forward, challenges you’ll need to overcome in the future.

*Remember this is an opportunity to test your creativity skills and to create something that will help you remember and reflect on your learning journey in future.*

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| Notes: |

1. Edward de Bono's "Six Thinking Hats (ISBN: 0140296662) is recommended reading. [↑](#footnote-ref-1)