INTRODUCTION TO EDWARD DE BONO'S THINKING PROGRAMS FOR STUDENTS

PRESENTED AT THE THIRTEENTH INTERNATIONAL CONFERENCE ON THINKING

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By

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The Cover

Research has shown that in the period between entering kindergarten and leaving university a student loses approximately 90% of their creativity. This is not to say that the education system is responsible for all of this loss. Many great thinkers including Leonardo Da Vinci practiced using their imaginations. One exercise for this is to give students a sheet of paper with some small patches or a few lines drawn on it. And ask them to look at the pattern and see how many things it reminds them of. Encourage students to increase the number of things they can think of with different patterns each week and invite them to draw one of them. Preferably in colour. The cover is an example created by a 9-year-old student from Hong Kong. You will notice that older students do not like this exercise which is probably why they should be doing more of them!

Remember that Professor Einstein said that “Imagination is more important than knowledge”.

Presenter:

Ian D. Robertson

Ian was born in New Zealand and holds formal qualifications in Civil engineering and management. He spent 35 years engaged in engineering, general management, and management consulting. During the last 4 years, he has followed his passion of introducing thinking programmes to educators in Hong Kong, China, and the Philippines.
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Introduction

Although our experience in using the Edward De Bono Thinking Programs for Students has been fairly brief, the results that we have observed from teaching the programs to over 700 students have convinced us of the effectiveness and the enormous value of the programs. Our experience confirms the opinions of many prominent people who have used the programs in schools in many countries including UK, USA, Israel, Malta, Australia, and New Zealand. It has been challenging to educate parents and educational authorities in the value of the program and we introduce the program first as extra-curricular activities at international schools and are pleased to announce that we are in the preliminary stages of piloting the program in ten local schools with the cooperation of the education and manpower bureau of the HKSAR Government.

Need For Thinking

Most educators understand the need to teach students life skills such as thinking which includes the skills of identifying problems or opportunities gathering information, creating new ideas, evaluating alternatives and taking decisions.

The need for the teaching of these thinking skills to form a significant part of the school curriculum has been exacerbated by the rapid growth of the internet which makes the teaching and memorizing of information almost redundant. At the same time the accelerating pace of change in the business environment requires large numbers of people with thinking and innovation attitudes and skills. Information technology in the office and robots in manufacturing reduce the need for human robots. Fortune Magazine predicts that by the year 2013, 60% of the job content on average will be thinking.

What Thinking is Needed?

At school, students need to decide what subjects to study, what to do about a bad relationship, how to collaborate with other students in project work, how much study to do, whether to experiment with alcohol, cigarettes and other drugs, etc.

At home, we need to decide where to live, whether to get married, whether to invest in property or shares, how to resolve family issues without argument, etc.

At work, we need to decide what career to take, whether to start a business, which person to employ, whether to fire a person, what profit margin to put on selling prices, whether to give credit or not, etc.

Note that unlike most thinking problems given at school, there are no right or wrong answers to these questions or indeed to most of the opportunities and problems that we face in our daily lives.
**Our Experience**

While these programs have been used in thousands of schools worldwide, there is no central repository of results. Getting this evidence has taken us 3 years and at the same time we have been teaching approximately 700 Hong Kong students in extra curricula classes at 16 International Schools and at training centres.

A number of schools in Hong Kong have introduced or are introducing the Six Thinking Hats program into their curriculum and we are working with other schools to assist them in implementing the CoRT program. We have conducted training for lecturers at City University and for staff at Shatin College and for educational psychologists at the International Centre for the Gifted and Talented.

**Benefits**

Extensive experience of teachers and parents worldwide has consistently shown improved results for students. Including more ideas improved self esteem, independent thinking, higher emotional intelligence (happier), more responsible behaviour and improved school results.

Quotes from prominent people, parents, students, and teachers as well as a summary of results of experiments carried-out in the UK are given later in this presentation.

**CoRT Program**

You may be familiar with the Six Thinking Hats program developed by Dr. Edward de Bono and widely used by corporations around the world to improve individual and collaborative thinking. In 1970, IBM funded a project for Dr. de Bono to develop a program to teach children how to think. The program is called CoRT (Cognitive Research Trust) and was developed at Cambridge University, England.

Dr. Edward de Bono’s model of the human brain explains our limitations in thinking caused by ego, confusion and poor perception. David Perkins, Senior Professor of Education at Harvard Graduate School, says that 80~90% of all errors in thinking are errors of perception. The CoRT Thinking Tools designed to help avoid these limitations.

An introduction to CoRT and the first ten lessons are given later in this presentation.
CoRT and DATT

Note that some of the tools in CoRT have been used in a program called DATT (Directing Attention Thinking Tools) which is widely used by leading corporations. Maria Dacre and Donna Price, two New Zealand teachers who have trained 80 other teachers in New Zealand using DATT. And their comments shown later in this presentation. You may notice the use of two thinking tools from DATT which are not included in the first ten lessons of CoRT. But are included in later lessons, namely KVI (Key Values Involved), RAD (Recognize. Analyze, and Divide).

Transferable Processes

Normally, we are not aware of the thinking process we used in a particular thinking situation and we reinvent the process for each thinking situation. The process used is usually not the optimum process, resulting in confusion, procrastination and poor decisions. CoRT thinking tools facilitates the directing of attention at specific areas, resulting in improved perception and less egocentric output. By using the short abbreviation for the thinking tools, a thinking process learnt in one situation can be carried over to another situation and be modified to suit that particular situation. This saves us from having to reinvent the process for each situation. The short labels given to each of the thinking tools make the tools part of our everyday thinking language and their recall or use immediately causes the brain to focus clearly on the particular aspect of thinking (it is difficult for the brain to recognize and analyze things that do not have a name and short names create stronger focus than long names).

Universally Applicable

From what we have seen from tests conducted in other countries and our own experience we are convinced of the value of the programs. The programs work equally well with students of all abilities: One of our students won a prestigious prize for gifted students in Hong Kong and the parents of an autistic student are convinced that the program has helped their son. We have not found a comparable program that matches the simplicity, effectiveness and user friendliness of these methods.

Teaching Aid

In order to be most effective and be available to all students, the programs should be integrated with other curricula subjects (not a difficult task). The use of these directing attention tools actually makes teaching easier!
**Teaching Method**

The thinking tools must become habits. The lessons should be fun and no judgment should be made of student’s outputs. We wish to encourage participation and the focus should be on the application of the tools, and not on the content nor the correctness of the output. It is better to have students form a habit of using PMI for example, than to be vaguely familiar with a lot of the tools. Keep the times for each thinking task short (1-5 minutes) in order to keep concentration and energy up and boredom down.

**Our Vision**

Our vision is that all students leave schools and universities with these thinking skills as habits that they will use in their personal, business and societal activities, and we are committed to helping others who are interested in this purpose.
References

Teaching Thinking by Dr. Edward De Bono
Teach Your Child How to Think – Dr. Edward De Bono
Smart Schools, by David Perkins

www.edwdebono.com (CDs containing materials and copyright authorization obtainable)
www.debonothinkingsystems.com/home.htm (CoRT Teaching Packs available)

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Acknowledgments

- The Six Thinking Hats, CoRT, and DATT are trademarks of Edward De Bono
- Edward De Bono for his brilliant thinking methods.
- Dr. Peter Low for teaching us the CoRT tools
- Peter De Bono for documenting CoRT and for sharing his wide experience
- Graeme Allan for sharing his experience using CoRT in schools for over 30 years
- Susan Mackie (De Bono Institute of Australia) for her support and encouragement
- Maria Dacre and Donna Price for their recent contributions from New Zealand schools


APPENDIX A

Quotes from those whose Views Matter

Dr Paul MacCready, inventor of the world’s first human and solar-powered aircraft and car, was asked what he would do if he could change education worldwide. His answer:

“First, I would introduce Edward de Bono’s thinking courses in all schools.”

David Perkins from Harvard Graduate School of Education researched de Bono’s CoRT program and noted in his book Outsmarting IQ: the emerging science of learnable intelligence. (The Free Press pg 195):

“It is reasonable to conclude that CoRT has considerable impact on thinking...Also, there can be some impact on general measures of intelligence and on school performance...CoRT is straightforward, ingenious, and quite easy to apply. Intelligence can be taught by CoRT.”

Sheldon Lee Glashow, (Nobel prize laureate for physics), after a convention for Nobel Prize Laureates in Korea in 1988 chaired by Dr. de Bono, wrote this reference in the book I am Right, you are Wrong. (Penguin / Viking 1990 / Penguin 1991 Foreword pg XVII):

“Dr de Bono’s innovative thinking methods have been tried and tested by many pupils and professionals, and they do seem to help people to be more creative and original. I saw the system in action at an impasse during a seminar of Nobel laureates. When a Random Word (another of Dr. de Bono’s thinking tools) was injected into the discussion, the problem was quickly resolved.”
APPENDIX B
Quotes from Students in Hong Kong

Student from Clearwater Bay School who we taught 1.5hrs per week as extra-curricula during P5 and P6 years (We have edited the English but have not added any words:

“It makes me think more about things. Before I learned CoRT I just said anything I wanted to. But now before I do anything I will think about it first and it really makes me more happy. I really learned a lot in CoRT - teamwork, imagination, logic, more ideas - and now I can see from a new point of view and think in a different way and it makes my decisions much better then before. The truth is that I was very quiet before I join CoRT but in CoRT I found my confidence. It will really help me a lot in secondary school and I bet it will still help me after secondary school.”

Jessica Chung, Y12 student at Chinese International School who attended the 4hr program designed for corporate executives and other professionals: “The Six Thinking Hats is a really fun program which is devised to help us learn how we think, organize our thinking and to think more efficiently.

The program linked many of these skills with real life situations which helps us practice using it in daily life. For example, in school, when we have group discussions, meetings or when we need to organize something, these skills come in handy to make the process much more effective and less troublesome. We used to have a lot of “who shouts loudest wins” situation, but with the Six Thinking Hats, we’re able to level everyone out so that we each have an organized equal opportunity to talk and participate. It removes a lot of the prejudice, bias and conflict from the picture. The program itself is extremely lively; you get to interact and meet new people and just have tons of fun! I really think that everyone should have a chance to participate in Six Thinking Hats.”

A sixteen-year old boy, from King George, V School.
When complimented on his huge improvement in confidence said “Yes, and it’s all due to CoRT.”
APPENDIX C
Quotes from Hong Kong Parents

Paradee Bowker, mother of a Kowloon Junior School student
“The Six Thinking Hats Program has opened up a whole new world of thinking for my daughter. She uses these thinking skills both at home and at school to benefit her life in many ways. I am so delighted at the results I decided to learn the programs myself and be a trainer.”

Karen Ng, mother of two Singapore International School students
“My children’s thinking has definitely improved. Unlike other programs, they enjoy the challenging and stimulating environment in the thinking classes.”

Ellen McNally, mother of a King George V student
“Just wanted to tell you that Kim found that your courses have helped her improve the quality of her work at school.”

Mrs. Tina Di Cicco, mother of two Kennedy School students
“After the Six Thinking Hats program, Dominic and Armando have become more organized in their thought process and work habits. On projects and presentations, they use the tools learned to gather and analyze information. And they love going to the lessons.”

Mrs. Laul, mother of a Glenealy School student
“Since doing the program, my son is able to think about things systematically, so he is very confident of expressing his ideas in a group.”

Mother of two Bradbury School students
“With a Six Thinking Hats poster in my kitchen, every time my son and I have a discussion, I can just point to the poster. We can do Six Hats on the problem and arrive at a mutually agreeable solution.”
APPENDIX D
Recent Comments from Two Teachers in New Zealand

Maria Dacre is a primary school teacher and Donna Price is a secondary school teacher.

Behaviour Management – Both Donna and I have seen the benefits of teaching the C&S tool as it gives the benefit of ‘foresight’ rather than ‘hindsight’.

Example one: The school had sent home many truancy letters to no avail. The truancy officers made several visits but this had not made any difference to this year 10 student’s attendance. The threat of prosecution was also not a deterrent. Donna sat down with this student on a rare appearance in class and did a C&S on what was going to happen if he continued down this path e.g. life in the gutter. Although it is early days, since this time the student has had full attendance for the past month.

Example two: Many of my students use a C&S in the playground to make a decision about what to do e.g. right choices. One day after break time a student came into class and said he was going to do something (that was inappropriate) but he did a quick C&S in his head and thought – no this is not worth it!

Literacy: In daily instructional reading at all levels of school life once the reading of text has been completed we use DATT as the ‘tool’ to deepen comprehension and understanding. We apply specifics tools to each text we plan so that students gain that deeper level or higher order thinking. Tools that have been especially well used in this area are: C&S, A.P.C., P.M.I., OPV and KVI. The two later particularly encourage that higher order thinking by encouraging the student to look at a topic from another viewpoint.

This has developed the student’s ability to hold onto their own belief systems but at the same time develop the ability to empathise.

In writing, we have used at all levels – from new entrants to year 11 a CAF to form the basis of all writing. Students quickly grasp this tool and have learnt to then prioritise using a FIP. The once difficult task of writing a report or essay has been totally simplified by these two tools. Essays and book reports can now be written using a P.M.I. I am still always and will remain inspired by my 7-8 year old student who capably do a CAF, followed by a FIP and then write a report on an endangered animal independently. At the other end Donna’s English students are using P.M.I. and OPV to understand and interpret novels. Once again, these students are able to organize their thoughts so that they can write an essay that is both well organized and also explores the deeper aspects of the novel.
In all areas of our teaching we have applied DATT from shared books where, for instance, we use an OPV to see the viewpoint of all the characters (not just the so-called hero). Have you ever thought about the Giant’s point of view? Not just Jack – the hero in Jack in the Beanstalk. With the OPV tool students have discovered that perhaps Jack wasn’t such a hero after all but in fact greedy thief! We have seen student’s take a C&S from the Troll’s point of view (Three Billy Goats) and have seen him wind up destitute and lining up to collect social security because he lost his job as the ‘bridge keeper’.

**Pastoral care:** One of the girls in Donna’s class had had a cousin commit suicide; she was very bitter, angry and had reached a block where she could not understand why he had left her. Donna had the opportunity to talk to this girl and together they did an O.P.V. on how her cousin was feeling at the time he made the decision to end his life. At the end of this, although the girl was still upset she had reached a space where she could understand the reasons why he had done this (very abusive home life). The student finished this with the thought wouldn’t it have been great if he could have done a P.M.I. beforehand he had made the decision to end his life.

**Math & Science:** We both use a RAD in our math and science work. We have found it extremely helpful in students gaining an understanding of something as simple as a fraction – what do you recognize about this? To something more advanced like the process of recognizing the different groups of bacteria.

More recently RAD has been used in teaching something as simple as sentence structure and identifying long and short vowels – again what do you recognize about all of the short/long vowels (short vowels have 1 vowel, long have 2 or more).

All of this teaching often does not require us to revisit it as students appear to retain this new knowledge and apply it to new situations. We have both had the experience of past students coming and sharing that they are still using the tools. A great example of this was a student running up and excitedly saying -“Hey Miss, I used that P.M.I. today!” Other examples are from teachers who have taught our students, after us and have said that they have a greater understanding of the world and how to solve problems.

Over the last two years we have run a number of what we call DATT days. These are planned around a topic that is currently relevant to their learning. Throughout the day the students will be taught the DATT tools in a variety of different problem solving situations. We have taught these days to large groups of mixed ability and aged students and they have always been hugely popular and very beneficial to all students for a variety of reasons. The days have prompted a great deal of discussion during breaks and have led to some high level debating within groups.
Thanks Ian for this opportunity to share something that we both feel very passionately about - MARIA

Dear Ian,

I am currently teaching college students with varying ability. Today in response to the news item about the new reality program in Holland that offers a kidney as a prize we completed a PMI, OPV and a KVI. I taught this to 4 classes of mixed ability and level students and every one of them completed the tasks. The activities prompted a huge range of responses and some brilliant debate. One of the classes was an accelerant class and one of them was a low ability class.

The DATT tools are without a doubt the best teaching tool I have encountered particularly when trying to make students feel good about themselves and to prove that you don't have to be a rocket scientist to be an effective thinker.

- Donna
APPENDIX E
Summary of Results of Experiments carried out in UK
Comparing CoRT trained pupils with untrained pupils
Abbreviated from “Teaching Thinking” by Edward de Bono, P.243~251

Experiment 1

Primary-school children aged ten to eleven. Eight groups, four CoRT trained (ten lessons) and four untrained.

Problem: ‘A schoolgirl wants to train to be a teacher. Her father has to live abroad for five years because of this work, and her mother is going with him. Should the girl go with them or stay with relatives or friends so that she can finish school and do the training?’

Total number of relevant points made:
Untrained Group total 18
CoRT Group total 66

Experiment 2

Village college. Mixed-ability pupils aged twelve to thirteen years. Three groups that had done twelve lessons were compared with three untrained groups from a comparable class.

Problem: ‘In order to make better use of scarce educational resources (i.e. money for education) there are two suggestions: schools in country areas should be closed – or schools should have fewer teachers. What do you think?’

Total number of relevant points made:
Untrained Group total 26
CoRT Group total 60

Experiment 3

Village college. Mixed-ability pupils, twelve to thirteen years. Chosen to represent a scatter of ability. Ten pupils had done 10 CoRT lessons; the others were untrained.

Problem: the following ten questions

A If your parents are thinking of moving away and they ask your opinion, what do you think you would say?
B Should children be allowed to do as they like at home?
C Should television last for only two or three hours as a day usually start before 8pm?
D Do you think that children should be allowed to choose which subjects they do at school?
E Do you think it was right to raise the school-leaving age to sixteen?
F If you were a headmaster, how would you choose a new teacher?
G What do you think people would say if you reported a pupil for beating up another boy?
H If your class wanted to have a trip to the seaside and the warden hadn’t time to arrange it, what would you do?
I If you were offered two holiday jobs, one in a shop and quite well paid, the other delivering newspapers, but not so well paid, which would you choose?
J A friend of yours has stolen something, but you are accused. What can you do?

Total numbers of relevant points made:
Untrained Group total 189
CoRT Group total 271

Experiment 4

Comprehensive school, mixed-ability groups, fourteen years average age. The CoRT-trained groups had done fifteen lessons. Total number of students: forty-seven.

Problem: “How would you reorganize the local bus service to improve it?’

Total numbers of relevant points made:
Untrained Group total 54
CoRT Group total 88


**APPENDIX F**

*Introduction to CoRT*

Dr. Edward de Bono’s CoRT lessons were written at Cambridge University and published by Peter de Bono with teacher notes in 1972. CoRT is an abbreviation for the Cognitive Research Trust established by Dr. de Bono at Cambridge, to research information-based pattern making in the brain.

The aim of the CoRT lessons is to teach “Thinking” as the foundational and overarching key competency. By giving thinking lessons direct attention in the classroom, the student and teacher can then apply them in a variety of settings as a ‘tool’. Of all the key competencies, Effective Thinking is one of the most immediately practical and transferable. Of all the competencies, Effective Thinking has greatest value in preparation for and implementation of life-long learning. Of all the competencies, Effective Thinking best fits the OECD recommendations for:

- Students to learn how to act autonomously
- Students learn how to apply various tools, including Thinking tools, interactively
- Students learn how to apply these tools to ensure harmony and constructive relationships in a heterogeneous social setting

The CoRT program of 60 lessons draws student and teacher’s attention to thinking processes used regularly. CoRT identifies these processes, elaborates on them, identifies their value and suggests how they can be applied in the real world. The value of effective thinking as the key competency is infinite.

Teaching Thinking by giving the study direct attention in the classroom suggests teachers are not good Thinking models. This is not so even if some teachers assume a student will best learn how to think by listening to them and observing their reactions to a variety of situations. Dr. De Bono calls this, the “osmosis” approach, the suggestion a child learns by absorbing expertise from a good model. Both students and teachers can learn from CoRT. Teachers should not assume they are naturally thinkers.

The Six Hat Thinking framework is the “next step” after the CoRT for the secondary students. Primary school often begin their relationship with De Bono Thinking, teaching and using the Six Thinking Hats Framework.

Both CoRT and STH are related in their practicality and value. Each has its own set of circumstances where it can be best applied. The focus in both is on “Operacy” the skill of “doing”, of “action”, of pro-activity rather than reaction.

Education preaches the value of Literacy and Numeracy. Insufficient attention is given to Operacy. We live in a world where teachers think it is sufficient to attain skills. Those who learn and apply the CoRT program are more inclined to focus on getting things done, on action, movement, and generating solutions to issues as they arise. This is the foundation of “design thinking” as opposed to more common analysis and judgment.
# A Review of the CoRT Lessons Achievement Objectives

## CoRT: Lesson 1-10

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Achievement objective</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lesson 1</strong></td>
<td>PMI How to treat ideas. The deliberate examination of an idea for good (Plus), bad (Minus) or the interesting possibilities. PMI use eliminates the immediate acceptance or rejection of an idea.</td>
</tr>
<tr>
<td><strong>Lesson 2</strong></td>
<td>CAF All the factors we can choose or identify that are involved in a situation help us think more effectively about the situation. Otherwise, we tend to think only about the first factors that come to mind.</td>
</tr>
<tr>
<td><strong>Lesson 3</strong></td>
<td>Rules This lesson summarises the first two lessons reminding us of the important basic principles involved.</td>
</tr>
<tr>
<td><strong>Lesson 4</strong></td>
<td>C&amp;S All actions have a consequence. Any action has either an immediate, short, medium or long term consequences. A thinker needs to be aware of these possibilities.</td>
</tr>
<tr>
<td><strong>Lesson 5</strong></td>
<td>AGO This lesson teaches the value of picking out and defining objectives. It explains how we should be clear about our own aims. It suggests we should also try and understand the aims or intention of others.</td>
</tr>
<tr>
<td><strong>Lesson 6</strong></td>
<td>Planning There are basic features and processes involved in planning. Lesson 6 draws together Lessons 4 and 5.</td>
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<tr>
<td><strong>Lesson 7</strong></td>
<td>FIP When thinking, we need to choose from a number of different possibilities and alternatives. Priorities need to be put in order before effective thinking can take place.</td>
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<tr>
<td><strong>Lesson 8</strong></td>
<td>APC A ‘generative thinker’ or action thinker is always interested in generating new alternatives and finding new possibilities. Most people are confined to the obvious ones.</td>
</tr>
<tr>
<td><strong>Lesson 9</strong></td>
<td>Decisions Because <em>De Bono Thinking</em> is about making decisions, this lesson draws together most of the principles already learned.</td>
</tr>
<tr>
<td><strong>Lesson 10</strong></td>
<td>OPV Often, we are trapped into believing our viewpoint is right. A useful thinking skill is to move away from one’s own viewpoint and listen with care and patience, considering the points of view of other people. This lesson encourages us to ask the question, “Why does that person have the point of view?” This lesson does not encourage us to say, “You are wrong / stupid / a dingbat! I am right!”</td>
</tr>
</tbody>
</table>
**Exercise Introducing some CoRT Tools**

Scenario

Your group is planning an expedition across the Sahara Desert. Use the following CoRT tools to help to plan your trip

AGO (Aims, Goals, and Objectives)

What are your five main reasons or objectives to be achieved in this venture?

AGO 1 __________________________________________________
AGO2 __________________________________________________
AGO3 __________________________________________________
AGO 4 __________________________________________________
AGO5 __________________________________________________

CAF (Consider All Factors)

What factors need to be taken into account when making your plan?

CAF 1 __________________________________________________
CAF 2 __________________________________________________
CAF3 __________________________________________________
CAF 4 __________________________________________________
CAF 5 __________________________________________________

APC (Alternatives, Possibilities and Choices)

What methods could you use for getting across the desert? (just brainstorm and get 10 ideas down as fast as possible without judging them)

APC 1 __________________________________________________
APC 2 __________________________________________________
APC 3 __________________________________________________
APC 4 __________________________________________________
APC 5 _________________________________________________
Red Hat

Time is limited for evaluation so just pick what you think are the best 2 alternatives.

Alternative A ________________________________

Alternative B ________________________________

PMI (Plus, Minus and Interesting)

Evaluate alternative A and Alternative B.

Alternative A

P1 _________________________________________________
P2 _________________________________________________
P3 _________________________________________________
M1 _________________________________________________
M2 _________________________________________________
M3 _________________________________________________
I1 _________________________________________________
I2 _________________________________________________
I3 _________________________________________________

Alternative B: P1, P2, P3

Decisions

What is your decision????

______________________________________________

C & S (Consequences and Sequel)

To a C&S to check whether there are any outcomes that you may not have foreseen.

C&S 1 _______________________________________________

C&S 2 _______________________________________________

C&S 3 _______________________________________________