CREATIVE AND PARTICIPATIVE PROBLEM SOLVING
- THE ART AND THE SCIENCE

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PREFACE

Creativity is an act of revolution. It is an anarchist
revolt against ideology, power and Society's
norms that block for people's freedom.

In many professions the point of departure is a mess or a problematic situation. A mess is usually defined as a confused, dirty, or offensive condition, or as a disordered situation resulting from misunderstanding, blundering, or misconception. A mess is usually composed of a complex mix of problems. Along these lines we could define a professional as a problem solver within a specific field. Managers, system scientists, computer scientists, operational researchers, system workers, designers, architects, engineers, innovators, medical doctors, lawyers, sociologists, social workers, action researchers, educators, innovators, artists, etc., are primarily dealing with messes in their professional praxes.

Most of these disciplines have developed concepts, approaches, methods and tools to deal with complex problems but there are usually presented in very specific terms related to their specific context. I am quite certain that much of these knowledge and experience have a more general applicability to other fields and that there is a lot to gain by discussing problem solving in more general terms. In other words, this book can be considered as an essay to create a new discipline: *The art and science of problem solving.*

In this new field rational, critical and creative approaches as well as their interplay, will be emphasised when dealing with problematic situations. Moreover, knowledge and experience coming from both theory (the professionals or experts) and practice (the users or clients), will be central in this field enhancing participation and dialogue. The final validity of our problem solving approaches will be their usability, what works in the real world is valid.

Another characteristic of the work of modern professionals is the change from experts to facilitators. The users or clients are the problem solvers; the professionals support or facilitate this group problem solving process.

> This book is focusing primarily in participative and creative approaches to problematic situations faced by communities, organizations, firms or public institutions.

This book is composed of the following eight chapters:

1. Fundamental Concepts
2. The Vision Conference
3. The Art of Facilitation
4. Group Work
5. Creative Tools
6. The Future Workshop
7. Participative Problem Solving
8. Enhancing your Creativity

The first chapter gives an overview of the contents and themes of the whole book. The following chapters discuss a specific topic or method for further study. Each chapter can be studied independently of the others. Each chapter starts with a real life case study, introducing concepts, methods and tools in a simple way. Then the contents will be more theoretical and reflective, ending with references to central contributions from the literature.

This book collects my experiences as a facilitator for many different communities and organizations and as a teacher at the Technical University of Denmark for the courses Creativity and Problem Solving and Systemic Operational Research. Several of the chapters has been used in my lecturing activities in Denmark and abroad. The target groups for this book are people and professionals from communities, organizations, and ad-hoc groups facing problematic situations that have to be solved in an innovative way.

All constructive comments and suggestions are mostly welcomed. It is my hope that the contents of this book will be improved by the contributions of the readers.

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Myths about creativity:

1. Creative outputs depend on a few often flamboyantly different individuals.
2. Either you are born creative or you are not.
3. Creativity is a solitary process.
4. Intelligence is more important than creativity.
5. Creativity cannot really be managed.
6. Creative groups are found only in “the arts” or in high-technology companies.
7. Creativity is relevant only to big ideas.
8. Creativity only involves coming up with new ideas.
9. Group creativity does not work in practice.
10. Artists are the creative while scientists are the rational.

CHAPTER 1

FUNDAMENTAL CONCEPTS

Creativity is an act of liberation. It is the escape from the jail of routine.

1. Introduction

The main purpose of this chapter is to give a holistic view and an introduction to the different elements of modern problem solving based on some concepts from creative thinking and systemic problem solving. Modern frameworks, concepts, approaches, methods and tools will be introduced in an interdisciplinary manner. These themes will be the subjects of the following chapters of this book.

Social intervention with the purpose of problem solving can be regarded as a performance. The scene with the different actors, the problematic situation and the problem solving approaches, as well as their interaction will be presented in Section 2. What is central in this framework is the focusing on social processes. Some real-life examples illustrate the main concepts. The problem solving process outlined in Section 2 is a *participative social intervention* that can be carried out in different forms; three of these forms are discussed in Section 3.

In Section 4, three different problem solving approaches are outlined. In addition the role of creative thinking and creative methods in these approaches are also enhanced. Research on creativity within several disciplines has been intensified during the last two decades. First, in Section 5, the concept of creativity will be elucidated, and then in Section 6, an outlook of creativity research relevant to the theme of this book will be depicted. In this section, the concept of group creativity will also be discussed. Group creativity is an essential element in all the approaches and tools discussed in this book.

The facilitation of group work in creative problem solving is a central theme in this book. Therefore, the anatomy of group work is outlined in Section 7 while the art of facilitation is presented in Section 8. Some simple but very useful creative tools are Brainstorming, Mind Mapping, and SWOT analysis; these will be introduced in Section 9. In Section 10, the creative methods to be discussed later in this book are shortly outlined. The last section, Section 11, is devoted to sketch some barriers to creative work.

2. The Scene

The point of departure in our discussions is the concept of an *organisation*. An organisation can be a family, a group of people, a community, a corporation, or a public institution. What characterises organisations is that there are purposefully designed and specialised to achieve a task. Thus an organisation in a community could be a centre designed to enforce the development of the region, while firms are organisations providing some products and profits, and institutions are organisations designed to provide some services.

The evolution of organisations is conditioned by external and internal factors, and sometimes organisations are experiencing *problematic situations or messes.* These are complex situations where some purposeful action is demanded to achieve some goals and visions. Problematic situations are usually related to the introduction of new technology, the re-design of the organisation, the development of new strategies for the organisation, the formulation of new visions for the future, or problem solving in general.

In such a situation, the organisation will usually appoint *a work group* to deal with the problematic situation. The *task* of this group is to analyse the mess and answer the question: What is to be done? In other words, to propose an *action plan* to be approved by the *decision-makers* of the organisation. In small organisations the decision-makers (managers) are usually part of or identical to the work group. Related to these persons we have the so-called *stakeholders*, those individuals outside or inside the organisation that can either affect or be affected by the action plan, see Figure 1. Let us see two examples to clarify the above-mentioned concepts.

Example 1: A small firm
The organisation in question is a small firm in a retail business. The problematic situation is to what extent to engage in e-businesses as demanded by the bigger partners in the supply chain and what will eventually be the configuration of the technological platform to be used (to develop an IT strategy). The situation is also problematic because the organisation has neither the technological background to identify different technological alternatives nor the experience and knowledge for dealing with problematic situations. Management (the decision- makers) has appointed a work group to deal with this mess in a creative way. The stakeholders are: the shareholders, the suppliers and the different type of purchasers.

Example 2: Community work
The organisation in question is a Development Centre in Odsherred (DCO), a vulnerable local region of Denmark. This is an autonomous non-profit organisation which main objectives are to strengthen, develop, and inspire to all type of cultural, social, environmental, and commercial activities in the region. Local innovators, in close co-operation with the relevant stakeholders of the region, carry out projects. These projects as well as the DOC itself are financed through a mix of sources: public funds, private funds, sponsors, business activities, and LEADER+, an EU-program that supports development in vulnerable regions of the countries that are members of the EU (see further Chapter 2).

The problematic situation is the development of common images of ideas, projects, visions, and objectives for the region in question. These visions and objectives will be used to select the projects to be supported by the LEADER+ program. The DOC's board (the decision-makers) appointed a work group to deal with this situation. The stakeholders are: NGO's from the region, the business community, trade unions, local innovators and officials from the different municipalities of the region.

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To deal with messes, it is recommendable for the work group to hire *a facilitator*. A facilitator will support the group in the *creative problem solving process*; he or she will secure that the problem solving process ends with an action plan. The facilitator is usually the manager of the problem solving process. The facilitator could also give some expert know-how or find out if some experts have to be hired to give specialised advice. Often, the facilitator is a professional that has some technical expertise, for instance within information technology, so that he or she could also be the expert.

To perform his job as process manager, the facilitator uses some *approaches, methods and tools* that he/she finds suitable for the given situation. The problem solving approaches could be quantitative (hard), qualitative (soft), participative (critical), innovative (creative) or a combination of them (multi-methodology), see further Vidal (2006). To facilitate groups demand the ability to both design and mange problem solving processes, creating a pro-active atmosphere and synergetic effects. Fig. 1 summarises all the elements and concepts discussed above, these will be further elaborated in the rest of this chapter.

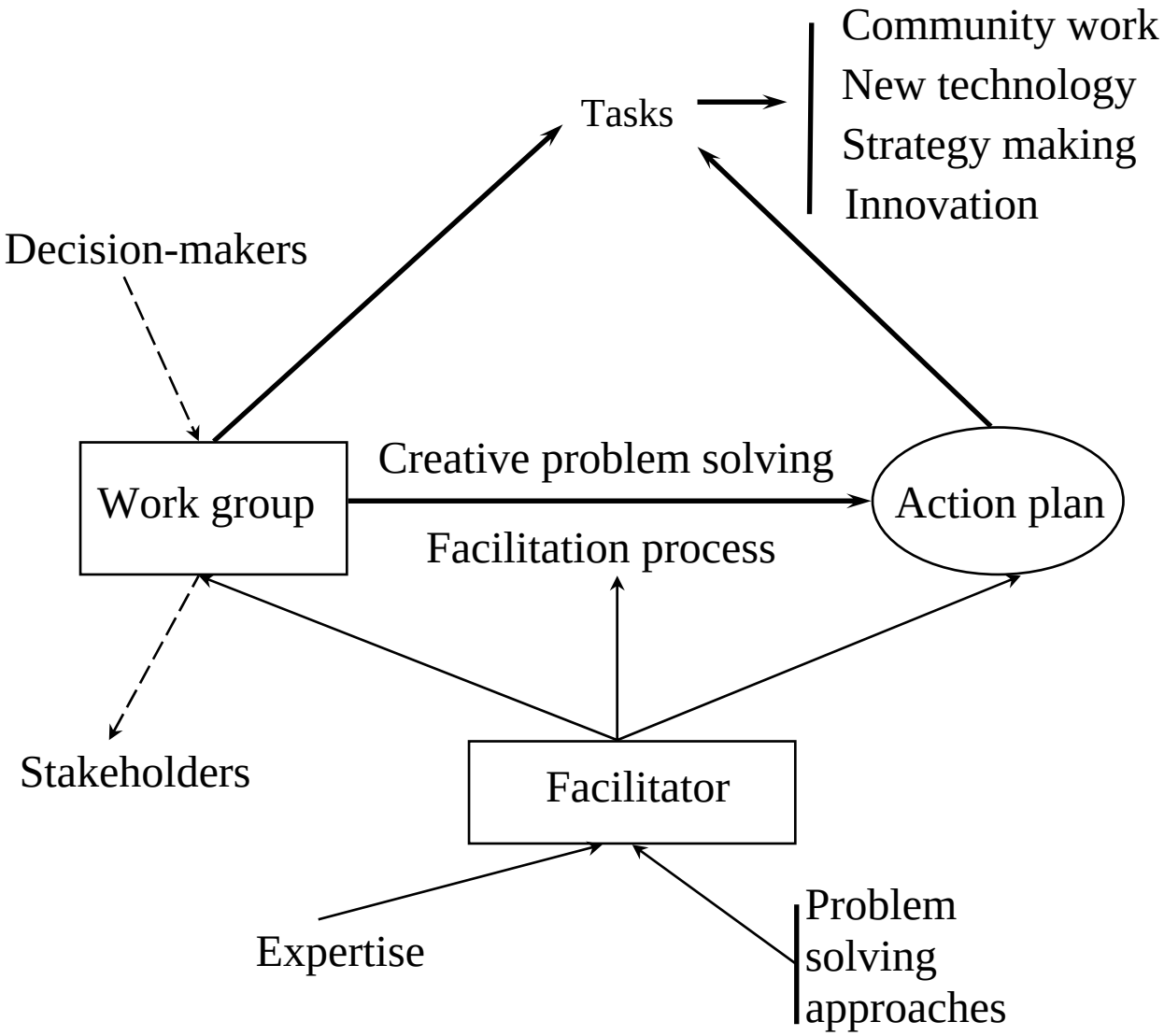

Figure 1. A framework for participative problem solving

Example 1 (continued)
In the above-mentioned example the facilitator was a student working in his MSc thesis to obtain a degree in Computer Engineering and Operational Research. The facilitator was also the technical expert. The problem solving process had duration of around 3 months. The facilitator used several soft approaches during the problem solving process. The final product was an action plan elaborating the different realistic alternatives and a proposal for the decision-makers. The whole case study has been reported in Sørensen, Vidal, and Engström (2003).

Example 2 (continued)
The director of DOC contacted the author of this book to support in the organisation and facilitation of a Vision Conference. The purpose of this conference was both:

- To generate visions and projects that will create a sustainable development of the region, and
- To learn how to facilitate groups, a tool that will be used during the implementation process of the LEADER+ program.

The facilitator designed and managed the Vision Conference where a creative process and several creative techniques were used. The final result was a long list of potential projects for the future. This portfolio will be used in the debates of the DOC's board while allocating funds to some selected projects. This case study will be further discussed in Chapter 2.

3. Social Interventions
In the two examples mentioned above, we have in principle two different kinds of social interventions. In the first one, denominated *research-driven intervention*, it is the facilitator as a researcher that takes the initiative to find a real-life case study for his MSc thesis. His objective is to test a problem solving approach and to evaluate the applicability of some methods. Obviously, the client or user will benefit by learning about the problematic situation, but there are not doubts about whose needs are ultimately driving the inquiry and helping process. This kind of intervention is quite similar to the type of interventions carried out under the name Action Research, a sociological school introduced by Lewin (1948). When he first formulated Action Research it was clearly a case of the researchers wanting to figure out how to be more successful in implementing some changes that the researcher desired. He found that by involving the targeted population in the research process, they became more amenable and committed to the desired change. But the initial drive came from the change agent and it was the change agent's goals that were driving the intervention. This research practice involves the client system in the researcher's agenda even though the client system might ultimately be the beneficiary. But the client did not initiate the process and it was not the client's needs that drove the process. It was the researcher's choice to involve the client in his research process.

The second example illustrates what is known as a *user-driven intervention*. The work group was composed of professionals covering different disciplines and with experience in problem solving within their own fields. In this case study, it is the client's needs that

is driving the inquiry and supporting process. During the problem solving process the work group will need support from experts, as for example the organisation of a conference and the teaching of facilitation tools. In this mode of intervention learning is a very important aspect of the problem solving process, because next time the users will organise a similar conference without an extern facilitator and facilitation will become a tool in their future work. This form of intervention is usually found in the praxis of many consulting disciplines as for instance Systems Sciences, Management Sciences, Computer Sciences, and Operational Research.

A third mode of intervention is denominated *participative intervention*, where both the work group and the facilitators co-operate and collaborate from the very beginning in the design of a creative problem solving process to deal with the problematic situation. This form of intervention is usually necessary when there is a need of both the practical experiences of the work group and the methodological and other expert knowledge from the facilitators. This mode of intervention can be regarded as a synthesis of the other two modes described previously.

Example 3: Organisational design
In March 2001, a group of tapestry weavers in Denmark decided to take the initiative for creating an organisation to develop and implement a strategy that can give their profession a badly needed innovation and produce new impulses to give the profession visibility and better working conditions in the whole Europe. They wanted to create an organisation of tapestry weavers in Europe: The EUROPEAN TRAPESTRY FORUM (ETF for short), a European umbrella forum based on the national organisations. ETF should support both permanent and recurrent activities financed by the European countries and the EU. This organisation was designed at a workshop conducted in March, 2001, for a group of tapestry weavers from North Europe, and facilitated by the author of this book. This was an example of facilitated participative intervention to be further discussed in Chapter 3.

4. Problem Solving Approaches
In 1981, Ackoff (1981) published a paper entitled: *The art and science of mess management.* He argued that there are three actions that can done about problematic situations:

- The *clinical or intuitive approach*, where you select actions that are good enough, that *satisfies*; it relies heavily on past experience, it is qualitatively oriented, and it is rooted deeply in common sense making use of subjective judgements and intuition. This approach can be supported by soft or qualitative methods.
- The *research or rational approach*, where you select actions that are the best possible outcome, which *optimizes*; it is largely based on scientific methods; it is quantitative oriented, and it makes use of mathematical and computer models aspiring to complete objectivity and rationality. This approach is usually supported by hard or quantitative methods. And
- *The design or creative approach*, where you seek to change the nature, and the environment of the problem so as to remove the problem, it *dissolves* the problem; it *idealizes* rather than satisfies or optimizes because its objective is to change the

> system involved or its environment in such a way as to bring it closer to an ultimately desired state, one in which the problem cannot or does not arise; it is innovative oriented and it make use of creative and participative approaches aspiring dissolution in the containing whole.

The last approach is based on interaction of the two first approaches, practical experience and scientific based approaches, but he adds design, invention, creativity, participation, and facilitation. This is the art and science of problem solving. The facilitator is both the artist and scientist supporting a group to deal with a mess. As a scientist, he will be using when needed scientific approaches, experimentation, simulation and mathematical modelling in the problem solving process. As an artist, he will metaphorically speaking be like a painter who combines colours and shapes (the participants in the process) to create an art work (the problem solving process). Or, the facilitator is the director of a theatre performing a piece of art. Several case-studies will be presented in Chapter 7.

Creative thinking and creative methods might be used in all three approaches, but they are necessary elements in the design approach. Referring to Figure 1, creativity thinking and creative tools can be present in:

- The group work,
- The problem solving process, and
- The facilitation process.

5. Creativity

E. Paul Torrance (Millar, 1997) was a pioneer in creativity research and education for more than 50 years. Torrance sees creativity as a process and has developed a battery of tests of creative thinking abilities. He believes that all individuals are creative and that creativity can be enhanced or blocked in many ways. He considers creativity *developmentally*, opposite to those who believe that a persons creativity was established at an early age (two or three years old), however his research has shown that creativity does not develop linearly and that it is possible to use activities, teaching methods, motivation and procedures to produce growth, even in ageing. Torrance asserts that creativity is an infinite phenomenon; you can be creative in an endless manner.

What is creativity?
"Creativity defies precise definition. This conclusion does not bother me at all. In fact, I am quite happy with it. Creativity is almost infinite. It involves every sense - sight, smell, hearing, feeling, taste, and - even perhaps the extrasensory. Much of it is unseen, nonverbal, and unconscious. Therefore, even if we had a precise conception of creativity, I am certain we would have difficulty putting it into words."

E.P. Torrance (1988)

E. Paul Torrance, born on a farm in Milledgeville, Georgia in 1915, received his undergraduate degree from Mercer University. He went on to receive his master's degree from the University of Minnesota and his doctorate from the University of Michigan. He began his professional career as a high school and junior college teacher, counsellor and administrator, developing his first creativity test at Georgia Military College. In 1945, he became a counsellor of disabled veterans at the University of Minnesota Counselling Bureau. He was inducted in the U.S. Army and served as a psychiatric social worker and psychologist where he interviewed, tested and counselled men who had been court marshalled. Upon his discharge, Torrance joined the counselling bureau at Kansas State University and later became dean of men, counselling bureau director and professor of psychology. In 1951, he became director of the Survival Research Field Unit of the U.S. Air Force Advanced Survival School. In 1958, he returned to the University of Minnesota and served as director of the Bureau of Educational Research until 1966.

Torrance also spent time in the world of academia, serving in the Department of Educational Psychology at the University of Minnesota and the University of Georgia, the latter of which he chaired. As UGA professor of educational psychology, he invented the benchmark method for quantifying creativity and arguably created the platform for all research on the subject since. The "Torrance Tests of Creative Thinking" helped shatter the theory that IQ tests alone were sufficient to gauge real intelligence. The tests solidified what heretofore was only conceptual – namely that creative levels can be scaled and then increased through practice.

In addition to developing the most widely used tests of creativity, Torrance also created the Future Problem Solving Program, and developed the Incubation Model of Teaching. He authored dozens of books and more than 2,000 published articles on creativity during the course of his career, making him one of the most published faculty members in UGA's history.

He remained prolific after his retirement, writing several new books on creativity. Some of his best-known books are *Guiding Creative Talent, Rewarding Creative Behavior, The Search for Satori and Creativity, The Incubation Model of Teaching,* and *Mentor Relationships and Why Fly?* His most recent books are such co-authored works as *Gifted and Talented Children in the Regular Classroom, Multicultural Mentoring of the Gifted and Talented, Making the Creative Leap Beyond,* and *Spiritual Intelligence: Developing Higher Consciousness*. Torrance's 2001 book, *Manifesto: A Guide to Developing a Creative Career*, includes the results of his 40-year longitudinal study of creativity – the only one of its kind

The Torrance Center for Creative Studies, based in the College of Education's department of educational psychology, UGA, was established after Torrance's retirement in 1984 to continue his scholarly inquiry into the study, development and evaluation of gifted and creative abilities in individual from diverse age groups, cultures, and economic backgrounds. Torrance died on July 12, 2003.

You find creativity in many apparently different areas: humour (ha-ha), science (aha) and art (ah). Koestler (1976) presents the theory that all creative activities - the conscious and unconscious processes underlying artistic originality, scientific discovery, and comic inspiration have a basic pattern in common, he calls it "*bisociative thinking*" - a concept he coined to distinguish the various routines of associative thinking from the creative jump which connects previously unconnected frames of references and makes us experience reality on several planes at once. Koestler introduced the concept of a "*matrix*" to refer to any skill or ability, to any pattern of activity governed by a set of rules - its "*code*". All ordered behaviour, from embryonic development to verbal thinking is controlled by the rules of the game, which lend it coherence and stability, but leave it sufficient degrees of freedom for flexible "strategies" adapted to environmental conditions. The term code is deliberately ambiguous, and reflects a characteristic property of the nervous system: to control all bodily activities by means of coded signals.

The concept of matrices with fixed codes and adaptable strategies is proposed as a unifying formula, and it appears to be equally applicable to perceptual, cognitive, and motor skills and to the psychological structures variously denominated frames of reference, associative contexts, universal discourse, mental sets, schemata, etc. Koestler has shown the validity of this formula from morphogenesis to symbolic thought. Matrices vary from fully automatized skills to those with a high degree of plasticity; but even the latter are controlled by rules of the game which function below the level of awareness.

It is difficult to give a simple and general definition of creativity. It is easier if we restrain to study creativity in relation to problem solving tasks as formulated in Section 2. Herrmann (1996) gives a short definition that encapsulates many other definitions presented in the literature:

> "What is creativity? Among other things, it is the ability to challenge assumptions, recognize patterns, see in new ways, make connections, take risks, and seize upon chance."

Let us elaborate a little more on this definition: Challenge assumptions means questioning the basis of the problem formulation; recognise patterns because usually chaos and complexity are caused by simple patterns which, when recognised, lead us to the solution to the problem; see in new ways means looking for patterns from different perspectives: a rational or logical, an organisational or procedural, an interpersonal or emotional, and an experimental or holistic; make connections, or bisociate, because many creative ideas are the result of synergy occurring between two thoughts or perceptions; take risks because there always exists the probability that your ideas will lead to failure due to many factors out of your control; and seize upon a chance means to take a calculated risk in order to take advantage of an opening that will allows to move forward toward a creative solution.

The creative person

We can identify at least three types of creative persons. First, the problem solving one where the person (subject) is trying to solve a problem (object) in a creative way, this is the case of doctors, engineers, scientists, advisers, etc. that is problem solvers in general. Secondly, the artistic person (subject) who creates a new piece of art (object) usually it will be a close interaction between the subject and object, the “soul of the artist” will be in the object; this object can be a product (painting, music, film) or a process (dance, theatre, performance). And thirdly, the persons that adopt creativity as a life-style being creative at work, at home and everywhere, both in an extrovert and introvert way (inventors, artists, mode designers, etc).

Maslow (1987) distinguishes between "special talent creativeness" and "self-actualising creativeness" and he found that creativity is a universal characteristic of self-actualising people. Self-actualisation may be described as the full use and exploitation of talents, capacities, potentialities and the like. Such people seem to be fulfilling themselves and doing the best that they are capable of doing. He identified the following characteristics of self-actualising creativeness:

- Perception or fresh appreciation and wonder of the basic good of life,
- Expression or ability to express ideas and impulses spontaneously and without fear of ridicule from others,
- Childlike or innocence of perception and expressiveness, natural, spontaneous, simple, true, pure and uncritical,
- Affinity for the unknown,
- Resolution of dichotomies or the ability to synthesise, unify, integrate, and
- Peak experiences or fearless, wonderful, ecstatic experiences which change the person and his/her perception of life.

Their codes of ethics tend to be relatively autonomous and individual rather than conventional. They regard upon the world with wide, uncritical, undemanding, innocent eyes, simply noting and observing: what is the case? without either arguing the matter or demanding that it is otherwise. Self-actualising creativeness is "emitted", like radioactivity, and it hits all of life, regardless of the problems.

Individuals exhibit various degrees of creativity throughout their lifetime. Usually, we have settled into a pattern or style of creative thinking. Just as it is valuable to understand your locks to creativity, it is important to understand your own style of creativity. Each of us has different personalities, although we all have the ability to be creative, personal differences and preferences cause us to approach creative problem solving in different ways. This is very central especially while working in groups, because each person has a contribution to make due to his or her unique profile. Creative groups are very effective if different styles of creativity are combined, to stimulate our thinking in different directions and to cause us to re-think our usual approaches.

Miller (1989) has developed a questionnaire that helps persons to identify their style of creativity. It is founded in three assumptions:

- Each person has the ability to think creatively, the main issue is: How is he creative?

- Each person has equal potential for creativity, but persons have different approaches to making change when they work, and
- There is not a single style, but a combination of styles, yet still each person has a favourite style.

A person's creativity style is founded in how he uses information to stimulate his creativity. Each creativity style prefers a different method for generating and evaluating ideas. Miller's research shows that preferences for style can be classified in four categories:

- *The modifying style* likes to ask: What can we adapt to improve upon what has worked before? These people are more comfortable working with facts and making decisions. They seek solutions using methods that have worked before. They are precise, reliable, efficient and disciplined.
- *The visioning style* likes to ask: What can we realistically image as the ideal solution over the long term? These people trust in their intuition and like to make decisions. They seek solutions that focus on maximising potential. They are persistent, determined, hard working and visionary.
- *The experimenting style* likes to ask: What ideas can we combine and test? These people emphasise fact-finding and information gathering. They seek solutions by applying pre-established processes and experimental trial and error. They are curious, practical, and good team players.
- *The exploring style* likes to ask: What metaphors can we use to challenge our assumptions? These people like using their insights to guide them. They collect lots of information hoping that it will help to approach problems from different angles. They are adventurous, dislike routine, and like to be challenged.

Amabile (1983) has documented that creativity in each individual has three components:

- Expertise,
- Creative-thinking skills, and
- Motivation.

Expertise is in a few words knowledge in its many forms: technical, procedural and intellectual. Knowledge can be acquired both theoretically and practically. Learning to learn is an important tool for becoming an expert in modern Society. Creative-thinking skills determine how flexibly and imaginatively people approach problems and tasks. It demands courage to be creative because you will be changing the status quo. According to Amabile, individuals can learn to be more creative and can learn to use creative tools in problem solving. Motivation is the last component. An inner passion and desire to solve the problem at hand will lead to solutions far more creative than external rewards, such as money. This component, usually called intrinsic motivation, is the one that can most immediately be influenced by the work environment. Amabile's research has identified six general categories that support creativity: challenge, freedom, resources, work-group features, supervisory encouragement, and organisational support.

Amabile (1998), after many years of research focusing on creativity within organisations has also concluded that individual creativity gets killed much more often that it gets

supported. Mostly, it is not because management has a vendetta against creativity, it is undermined unintentionally because of the optimisation of short business imperatives: co-ordination, productivity, efficiency and control. Her research has shown that it is possible to develop organisations where both profit and creativity flourish, but you need a conscious strategy. Torrance's research has also shown that children's creativity gets killed in the primary schools and it is possible to design schools and education systems where both rational and creative work flourishes. Amabile has drawn attention to the crucial importance of intrinsic motivation in creative endeavour. Business has traditionally rewarded people extrinsically with pay and promotion but creative actions often arise out of a long-standing commitment to and interest in a particular area. She appreciates this is only one part of the equation, and that expertise in the domain concerned, and sufficient mental flexibility to question assumptions and play ideas, are also important. In addition, she points out the critical importance of challenge, for instance, matching people to tasks they are interested in and have expertise in, permitting people freedom as to how they achieve innovation, setting a sufficiently diverse team the task of innovation, along with sufficient resources, encouragement and support.

The Systems view of creativity

Creativity is usually seen as a mental process but creativity is also a cultural and social activity. Csikszentmihalyi (2001) asserts that any definition of creativity will have to recognise the fact that the audience and social environment is as important to its constitution as the individual or group who is producing novelty. This environment has two main aspects:

- The *domain*, a cultural or symbolic aspect, and
- The *field*, a social aspect.

For creativity to occur, a set of rules and practices must be transmitted from the domain to the individual. The individual (or a group) must then produce a novelty in the content of the domain. The field for inclusion in the domain then must select the novelty.

Creativity occurs when a person (or a group) makes a change in a domain, a change that will be transmitted through time. But most novel ideas will be forgotten if some group does not accept them entitled to make decisions as to what should or should not be included in the domain. These gatekeepers are the field. The field is the social organisation of the domain, those who decide what belongs to a domain and what does not. Therefore the occurrence of creativity is not just a function of how many gifted individuals there are, but also of how accessible the various symbolic systems are and how responsive the social system is to novel ideas.

Csikszentmihalyi has outlined a systems theory of creativity, relating creative effort by individuals to the state of the domain they are working in and the characteristics of those who assess the worth of the creative endeavour in the field concerned. This offers a penetrating analysis of how creative endeavour emerges within a social field. Drawing on years of research in the field, he hypothesises about the interplay between knowledge about the domain, gatekeepers in the field and creative individuals. In addition, many of the points made by him in relation to other domains apply equally well to creativity and

innovation in organisational settings. Csikszentmihalyi has drawn attention to the social context out of which creativity and innovation emerge. For example he has demonstrated the beneficial role of working at a place and time in which other individuals are engaged in related creative activities.

Creativity quotes:

- Creativity involves breaking out of established patterns in order to look at things in a different way (Edward de Bono)
- Creativity in science could be described as the act of putting two and two together to make five (Arthur Koestler)
- Creativity is a natural extension of our enthusiasm (Earl Nightingale)
- Creativity requires the courage to let go of certainties (Erich Fromm)
- The creative adult is the child who has survived (Ursula Le Guin)
- A first-rate soup is more creative than a second-rate painting (Abraham Maslow)
- Creativity is allowing you to make mistakes. Art is knowing which ones to keep (Scott Adams)

6. Creativity Research

The description of the creative process can be dated back to the description of the incubation process by the French mathematician Henri Poincaré (1854-1912) while discovering the so-called fuchsia functions. Based on these experiences the psychologist Wallas (1926) formulated a four step creative problem solving process:

- Preparation,
- Incubation,
- Illumination, and
- Verification.

Incubation involves the flashes of insight while in the process of puzzling over a problem or dilemma, mulling it over, fitting the pieces together, trying to figure it out, this the part of the creative process that calls for little or no conscious effort. The flashes of insight come while you are going to sleep, travelling, dreaming, taking a shower, reading a newspaper, relaxing or playing (Eureka experience). Research on creativity started after the Second World War. In the 1950s American psychologists started to investigate the mental origins of creativity and develop creativity tests, the works of Torrance and Guilford started at this time. In Europe, Koestler research work was carried out during the 1950s and his monumental book "The Art of Creation" was published first in 1966. Stenberg (1999) has edited a book presenting an overview of 50 years of research in the creativity field. Now-a-days creativity research work can be classified in the following five domains: the product, the environment, the personality, the process, and learning and cognition, see further Vidal (2004). In this section we will present some areas of special relevance to creative problem solving.

The creative process

This research is focusing in the way that creative solutions and products were developed. Wallas' four-stage process has given inspiration to the development of methods to be used by individuals or groups in the creative solving process. Some definitions of creativity are closely related to the process of sensing problems or gaps of information, forming ideas or hypotheses, testing and modifying these assumptions and communicating the results. In this respect creativity is the ability to see a situation in many ways (*divergent thinking*) and continue to question until satisfaction is reached (*convergent thinking*). The creative process can involve tiny creative leaps or giant breakthroughs. Both require that an individual or a group go beyond where they have gone before, embracing the unknown, the mysterious, the change, and the puzzling without fear.

The creative process may be considered as a new way of seeing, a different point of view, an original idea or a new relationship between ideas. It is the way or manner in which a problem is solved. It is the process of bringing something new into being. It is the process of combining previously unrelated ideas or perceiving a new relationship from previously unrelated ideas. Whether solving problems alone or in a group, you really must have a guided process i.e. a plan or a map of the steps to be followed. This is especially so in a group due to the need to align the capabilities of the members in a positive way. This map is usually called the creative problem solving process and under this denotation there exist a huge number of methods, tools and techniques to support the creative process. Some of them will be presented in Chapter 5.

Group creativity has not been researched as much as individual creativity. Leonard and Swap (1999) presents their process for group creativity as five linear steps for discussion, while acknowledging that in practice it would look more like a "plate of spaghetti." The five steps are (1) preparation, (2) innovation opportunity, (3) divergence: generating options, (4) incubation and (5) convergence: selecting options. This process parallels creative problem solving techniques which involve cycling repeatedly through a process of divergent and convergent thinking.

Box 1 presents some suggestions for effective creative group work. Focusing first on group composition, the concept of *"creative abrasion"* is important. Creative abrasion is descriptive of the friction that is caused when a heterogeneous group works together to develop creative ideas. It is usually hypothesised that the relationship between creative abrasion and performance has an inverted-U shape. That is to say, at low or high levels of abrasion the group is less creative while at moderate levels of abrasion performance is maximized. Creative abrasion is caused by the diversity of the team members along dimensions such as individual professional expertise, cultural heritage, dominant thinking styles, etc. To have creative abrasion groups must have diversity along those same dimensions.

The central three steps in the creative process are divergent thinking, incubation, and convergent thinking. These themes will be discussed later in several of the chapters of this book.

Suggestions to optimize group creativity:

- Group creativity is similar regardless of the magnitude of the task
- Creative individuals are not all-important for group creativity
- Motivation is an essential element in creative work
- Start creativity work with a warm-up exercise
- Creativity is a process that can be learned by groups
- Create a safe haven for new thinking: encourage innovative thinking
- Make sure the objectives are clearly formulated: articulate a clear purpose
- The right group composition is important
- Cross-pollinate your brainstorming groups: creativity thrives on diversity
- Group creativity needs a skilled facilitator: to keep the process moving
- Actively support the individuals for engaging in the process
- A creative process needs both divergent and convergent thinking
- Conclude every workshop with an action plan and an evaluation

Box 1. Effective group creativity

Learning and cognition

This research is focusing on the abilities of creative learning, thinking and cognition in relation to problem solving. All these activities are related to the physiology of thinking and therefore to the function of the human brain. Creative learning is a natural, healthy human process that occurs when people become curious or excited about understanding or knowing more. Anytime we are faced with a problem or dilemma with no learned solution, some creativity is required. Creativity, by its very nature, requires both sensitivity and independence. In our culture, sensitivity is a feminine virtue while independence is a masculine virtue. Landrum (1994) outlines some specific differences between male and female approaches to learning:

The *female approach* is base on:

- Negotiations,
- Feelings,
- Understanding,
- Personal relationships,
- Intuition, and
- Win-win outcomes

The male approach is based on:

- Aggressiveness,
- Competition,
- Ego gratifying,
- Impersonal relationships,
- Rationality, and
- Win-lose outcomes

In the creative process we use the female approach primarily in the divergent thinking and the male approach in the convergent thinking.

All people learn trough their senses: touching, smelling, tasting, feeling, hearing and seeing. According to Matte and Henderson (1995) more than half of the population in the USA are visual learners (they want to read it). The rest of the population are with fifty percent probability either auditory (they want to hear it) or kinaesthetic (they want to experience it). The understanding of different forms of cognition and creativity is related to the structure and function of the brain, a research area known as neuro-psychology that has undergone a huge expansion and that has contributed a lot to the understanding of individual creativity.

The human brain consists of two halves – the left hemisphere and the right hemisphere. Usually the left hemisphere controls the right side of the body and the right hemisphere controls the left side of the body. Each hemisphere has identifiable functions. Communication between these two hemispheres is given by a thick nerve cable called corpus callosum. Sperry (1968) found that both hemispheres use high level thinking skills, though different, both involve thinking, reasoning and complex mental functioning. According to Restak (1991) the right hemisphere is superior to the left when it comes to deal with the novel and unfamiliar, especially when there are no clues or ways to respond. You might say that the right hemisphere is the generalist and creative, with numerous approaches to problems; and the left hemisphere is a specialist and rational, with logical, linear approaches to problems. The boxes below provide a comparison of left and right characteristics Edwards (1979):

Left
Verbal
Analytic
Symbolic
Abstract
Temporal
Rational
Digital
Logical

Right
Non-verbal
Synthetic
Concrete
Analogical
Non-temporal
Non-rational
Spatial
Intuitive

7. Group Work

The ability of a group to produce a quality group project is linked directly with the group's ability to negotiate and manage the process of working as a group. Process issues concern how to create the conditions that will enable the group to get the best of each member's skills, capabilities and resources, and how to make the experience of working as a group satisfying, enjoyable and successful.

A successful group does not just happen spontaneously; rather such success is actively developed by its members. The inclusion of group work has three particular aims:

- The first is the quality of learning available through a group effort, especially in terms of the breadth and depth of coverage possible and the variety of perspectives and skills which can be investigated and incorporated toward this,
- The second is that learning group work skills is beneficial to your future work or academic career, where a group rather than individual approach is increasingly preferred, relevant or essential, and
- The third is that by acknowledging the social nature of learning, it can be more enjoyable and meaningful.

Group work has a dual nature, with both process and product objectives. Process objectives concern how the group functions as a group. Process objectives are context based, that is, they are particular to the learning and working environment of a group, rather than as an individual. Process objectives signify the fact that effective group work and group management must be learned. Product objectives relate directly to the specific group task, i.e. the academic learning and the product (essay, poster, presentation, etc) required of the group. Product objectives are content based, that is, they involve the subject matter and the unit's content objectives. Chapter 4 will focus on group work. Group work is a central activity in creative problem solving and collaborative learning in connection with workshops and conferences. This will be seen in all the following chapters of this book.

8. Group Facilitation

To facilitate is "to free from difficulties or obstacles", "to make easy or easier", or "to carry out a set of functions or activities before, during and after a meeting to help the group achieve its own objectives". The facilitator is there to ensure a productive group process whether this is brainstorming a new idea or discussing the latest employee appraisals. The role of the facilitator is to ensure that the group works as a constructive and cohesive unit. This task has three parts: leadership, referee and neutral.

To be effective in the role of a facilitator the person needs to be effective as a manager, requiring several skills and qualities to be able to guide the meeting smoothly. These are: communication, planning, leadership, empathy, education, problem identification, and consulting. In addition the facilitator has to have some personal skills and qualities: flexibility, confidence, authenticity, patience, perseverance, leadership (presence), integrity, initiative, respectability, and perceptive. The art of facilitation will be the theme of Chapter 3.

9. Creative Tools

Several simple tools can be used to support creative problem solving processes. Here three of the most used tools will be shortly presented. In Chapter 5 several other tools will be described and classified.

Brainstorming

One creative tool, which has been widely used with big success for generating many ideas, is *Brainstorming*. It was invented it for the sole purpose of producing checklists of ideas that can be used in developing a solution to a problem (divergent phase). The tool is

directed to generating unconventional ideas by suppressing the common tendency to criticise or reject them summarily. The tool tries to separate idea-evaluation from idea generation because it is believed that if evaluation comes early, it reduces the quantity and quality of the ideas produced. Therefore in a Brainstorming session no criticism is permitted and freewheeling generation of a large number of ideas and their combination and development are encouraged. Brainstorming is founded on the associative premise that the greater the number of associations, the less stereotyped and more creative the ideas of how to solve a problem will be.

According to Torrance (1979), brainstorming skills can be developed when practiced with content or when practiced solely for skill development. It is an excellent technique for strengthening fluency, the imagination and communication skills. It is my experience that brainstorm sessions in groups should always be facilitated.

Mind mapping

Mind Mapping is a visual and verbal tool used to structure complex situations in a radial and expanding way during the creative problem solving process. A mind map is by definition a creative pattern of related ideas, thoughts, process, objects, etc. It is difficult to identify the origin and the creator of this technique. It is quite probable that this tool has been inspired by research on the interplay between the left and the right hemisphere of the brain.

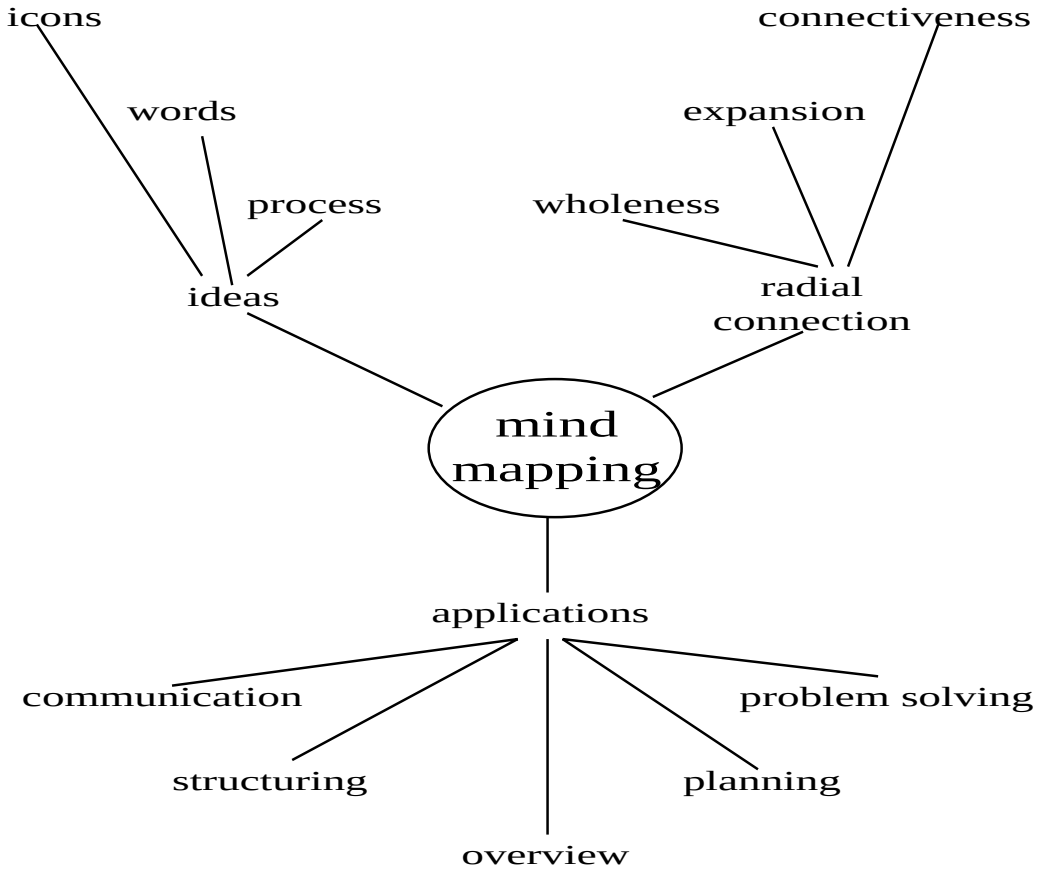

Figure 2. Mind Mapping

Mind maps can be used to structure ideas after a brainstorming session (convergent phase). Pictures, colours, icons and texts can be combined to illustrate ideas in a holistic way. Experienced facilitators are able to combine interactively brainstorming and mind mapping. Mind Mapping is one of the many mapping techniques that are available for problem structuring. It has many applications as shown in Figure 2.

SWOT Analysis

SWOT Analysis is a powerful evaluation tool for identifying Strengths (S) and Weaknesses (W), and for examining the Opportunities (O) and Threats (T) of organisations, communities, firms, projects, processes, persons, teams, or ideas.

Used in a business context, it helps you carve a sustainable niche in your market. Used in a personal context, it helps you develop your career in a way that takes best advantage of your talents, abilities and opportunities (see Chapter 7). Used in creativity and innovation work, it helps you to structure, identify, and evaluate projects. It is a must tool in the task of developing strategies for organisations and communities. A more complete presentation of this tool can be found in Sørensen and Vidal (1999).

SWOT analysis is a framework for analyzing a company's or project's strengths and weaknesses, and the opportunities and threats it is facing. This will help you to focus on strengths, minimize weaknesses, and take the greatest possible advantage of opportunities available. Table 1 depicts the SWOT matrix and some of the questions that can be answered by a facilitator that wants to improve his performance.

Strengths: What do I do well? What unique resources can I draw on? What do others see as my strengths?	**Weaknesses:** What could I improve? Where do I have fewer resources than others? What are others likely to see as weaknesses?
Opportunities: What good opportunities are open to me? What trends could I take advantage of? Looking at my strengths, how can I turn these into opportunities?	**Threats:** What trends could harm me? What are my competitors doing? Looking at my weaknesses, what threats do these expose me to?

Table 1. SWOT matrix for the facilitator

10. Creative Methods

Creative methods are approaches, procedures and tools that are designed to support the creative work of groups. In Chapter 2, The Vision Conference will be presented. This is a one-day event, workshop or conference designed for a large group of participants, supported by a group of facilitators with the purpose of creating ideas and visions for the future of an organisation, about specific themes.

In Chapter 6, the Future Workshop will be presented. This workshop is primarily used by local groups to deal with community problems and find alternative solutions to the one proposed by the establishment. Other workshops and Conferences will be presented in Chapter 2. The criteria for the selection of these methods have been their usability in creative group work, their facility to be incorporated in facilitated problem solving, and their document usability.

11. Barriers to Creativity

To be creative you have to be open to all alternatives. This open mindedness is not always possible to meet because all humans build up blocks or mental locks in the maturation and socialisation process. Some of those locks can have external causes, such as family environment, the educational system, and organisational bureaucracy. Other blocks are internally generated by our reactions to external factors or by physical factors. A key to improve your creativity is to become aware of your locks and do something about them. While everyone has blocks to creativity, blocks vary in quantity and intensity from person to person. Most of us are not aware of our conceptual blocks. Awareness not only permits us to know our strengths and weakness better but also gives the needed motivation and knowledge to break down these blocks. Adams (1986) identifies the mental locks as perceptual, emotional, cultural, environmental, and intellectual. These are shown in the box below.

Perceptual locks are obstacles that restraint us from clearly perceiving either the problem itself or the information needed to register the problem. It is well known that our eyes can deceive us in observing some figures. Our perceptions are not always accurate.

Emotional locks restrict our freedom to investigate and manipulate ideas. They prevent communicating our ideas to others. These locks are also called psychological barriers and are the most significant and prevalent blocks that impede innovation. Fear of something new is a common characteristic of many individuals in the developed world.

Cultural locks are adapted by exposure to a given set of cultural patterns. The culture of the industrialised countries trains mental playfulness, fantasy and reflectiveness out of people by placing stress on the value of efficiency, effectivity and moneymaking. Taboos and myths are predominant blocks to creative behaviour. Therefore, it needs courage to be creative in a culture that does not support creative changes.

Environmental locks are imposed by our near social and physical environment. Creative persons have usually had a childhood where they were free to develop their own potentialities.

Intellectual locks are caused by conservatism and lack of willingness to use new approaches. The same approaches, the same tools and the same persons are tackling the same problems for years. Persons with intellectual locks are usually very negative to changes and are fast to criticise new proposals.

Finally, in Chapter 8, a guideline to enhance individual and group creative abilities will be presented

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CHAPTER 2

THE VISION CONFERENCE

Empowerment is to learn collectively to perceive social, political, and economic contradictions, and to take action against the oppressive elements of reality.

1. Introduction

"Dreams, not desperation make communities survive". This slogan was written on a wall of a shantytown in the outskirts of Lima, a community that has developed from nothing to become a well-functioning town. Visions, collaboration and hard work have been the factors that have transformed a desert into a well-developed town. To create dreams about the future is an important task for many groups of individuals and organisations both in grass root activities, public institutions and small businesses. To create visions is the ability to think about the future with great imagination and wisdom.

The main purpose of this chapter is to present the principles of The Vision Conference: a one-day workshop designed for a large group of participants with the purpose of creating ideas and visions for the future about a specific theme (Vidal, 2004a). Complex situations might demand a longer duration, from 2 to 4 days. The format of The Vision Conference has been constructed based on some concepts and experiences from three areas: the organisation of Future Workshops (Jungk and Müller, 1987), group facilitation (Heron, 1999) and creative problem solving (Courger, 1995). The design and planning of a Vision *Conference* are shortly discussed in Section 2.

In Section 3, the various ideas and concepts discussed in the previous section are illustrated by presenting a real life case study: a *Vision Conference* organised by a development centre in a vulnerable region in Denmark. This was a one-day conference designed for 30 individuals and the author of this book was the main facilitator assisted by three other facilitators.

A main task of the facilitators is the organising of *The Vision Conference*. This work starts before the conference day tackling different design and planning tasks. After the conference, the facilitators have to report back and evaluate the whole experience. In Section 4, we discuss in an extensive and general form the design and planning aspects of the organisation of conferences and workshops. Workshops are conferences where the number of participants is reduced (10-12 persons). The management of such conferences or workshops will be discussed in the next chapter.

Other types of conferences and workshops have been developed and used in different contexts and countries; in Section 5 the best known approaches are outlined: *The Future Workshop, Scenario Workshop, Consensus Conference, Future Search, and Search Conference*. Finally, in Section 6 some further remarks are presented outlining other applications of *The Vision Conference*.

2. The *Vision Conference*

Vision Conferences can be conducted for a wide range of purposes. A typical purpose is to help organisations and group of individuals to create visions about the future. These visions will then be used as input to the process of strategy development. Similarly, a *Vision Conference* can be suitable for involving diverse groups affected by imminent developments in the larger systems, which include many actors such as industries, regions and communities. We have used the concept of a *Vision Conference* to support grass root innovators and organisations in relation to the task of creation of new ideas for

community work. *The Vision Conference* ideally brings together 30-60 participants representing all relevant actors. The participants must adequately and accurately reflect the groups' range of interests, but participation must be voluntary. Most of the issues discussed in this book are applicable to both conferences and workshops.

Purpose

The purpose of *The Vision Conference* is not only to create ideas and visions about the future but ideas and visions that are suitable as a basis for the process of strategy development to be carried out by the organisation in question. *The Vision Conference* is both a learning and creative experience characterised by:

- The organisation learns about the different actors' ideas, wishes and visions,
- The different actors communicate to each other their visions,
- The participants learn to work creatively, collectively, and purposefully in a large group, and
- The participants learn how to design and manage Vision Conferences.

Design and Planning

Achieving such learning outcomes depends very much on how *The Vision Conference* is designed and managed. Two critical dimensions of *Vision Conference* design are: the definition of the conference *task (content)* and the *social organisation (context) and management (leadership)* of the group. Initial definition of the task and the stages towards its completion is the responsibility of the facilitators (design-managers) of *The Vision Conference*. In consultation with the organisation responsible for *The Vision Conference* and through some prior research into the relevant issues, facilitators should first:

- Develop a tentative definition of purpose that will be meaningful to participants, and
- Suggest a program that provides both adequate direction and sufficient scope for the participants to assume control and responsibility as the conference progresses.

With their experience and knowledge, the facilitators can remain alert to possible drifts into maladaptive directions during the stages towards task completion. However, they do not claim such expertise as would make participants subordinate and passively dependent upon them. The primary purpose is to create the space and the opportunities for the participants to be positive and creative, producing their visions for the future. This is possible only if both the information and ideas come from all the participants and if the group work is organised so that progress towards task completion is accepted as the participants' as well as the facilitators' responsibility.

The Conference

The conference task and program usually take the form of some themes that the participants accept responsibility for answering in collaboration with each other while going through a creative process. The participants will usually be divided in sub-groups, each sub-group being of 7-12 persons and having a facilitator (workshops). These sub-groups will be facilitated to create ideas, visions, and objectives for the above-mentioned themes. Some creativity techniques will be used to support the creative process in each

sub-group. Plenums are planned to communicate the results achieved in each workshop to the participants of the other workshops, see Figure 1.

The Vision Conference is usually of one-working day duration. In the morning, work in sub-groups will be combined with plenary sessions with the purpose of producing as many ideas, projects, visions and objectives as possible. This is called *the divergent phase* of the conference. In the afternoon, the same combination of work in sub-groups and plenary session will be carried out, but now the work will be focused in those most promising ideas, those selected by each sub-group. This is called *the convergent phase* of the conference. Sometimes, it could be a good idea to redesign the sub-groups in the afternoon; this might be a crucial decision and should be discussed by all the participants and the facilitators.

It is not unusual to start the whole conference with an invited speaker to give the first kick-off and some inspiration to all the participants. This person should be selected based on his/her experiences with the theme of the conference and his/her ability to communicate his/her knowledge to a large audience. It is a good idea to end the conference with a short presentation by one of the facilitators to summarise the results achieved and with a final talk given by one of the representatives of the organisation organising *The Vision Conference* to outline what is going to happen in the near future.

Outcomes

After the conference ends, the facilitators prepare a report which is sent to all participants and the board of the organisation in question. This report contains:

- The complete ideas, projects, visions and objectives produced by each sub-group in both the divergent and convergent phases of the conference (the results), and
- An evaluation of the different processes and activities carried out at the conference (the learning process and group dynamics).

It is expected that the board of the organisation in question will use the reported information as input to the process of developing strategies and actions plans for their future activities. It often happens that the participants constitute a network capable in its own right of taking further initiatives and organising other vision conferences with other organisations (learning and empowerment).

The overall purpose of the conference and the proposed stages towards its completion should be presented to participants at the outset. *The Vision Conference* is a task-oriented event. Unless participants can see at each stage in the context of making progress with meaningful tasks, they are likely to become confused, uncomfortable, and impatient with the broad scope and freedom provided. Also, this is an opportunity to test with the participants the relevance and validity of the proposed conference design. The invitation and introduction to the conference should emphasise the need for participants to accept “ownership” of and responsibility for the conference proceedings and outcomes.

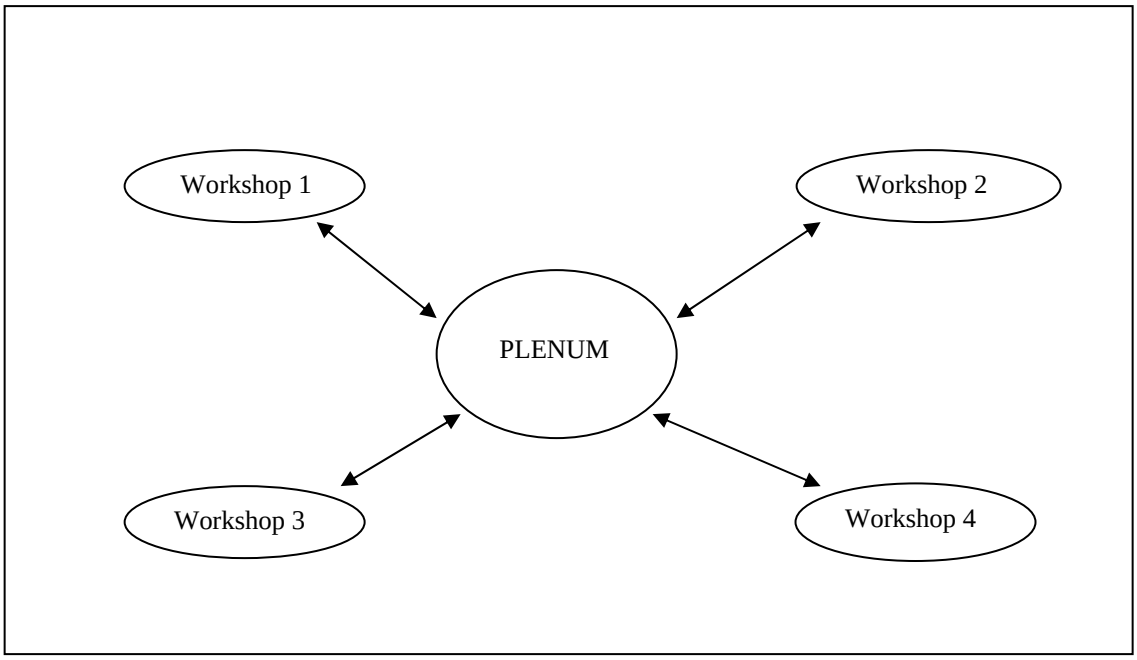

Figure 1. Communication flow in the conference

3. Case Study

The Development Centre in Odsherred, North West Zealand, Denmark, is an autonomous non-profit organisation established in March 1998. The main objectives of DCO are to strengthen, develop, and inspire all types of cultural, social, environmental, and commercial activities in the vulnerable region of Odsherred and to create co-operation with similar activities in other similar regions both in Denmark and Europe. Since its establishment DCO has focused on cultural, IT and environmental projects and activities such as: visual arts, Internet communication, dramatised cultural communication, sustainable building and design, etc. Local innovators in close co-operation carry out projects with the relevant actors of the region. This centre is financed through a mix of financing sources: public funds, private funds, sponsors, and business activities. DCO is steered by a board having a wide register of activities within development work, job-creation, education, production, sales, marketing and communication. In 1999, there were so many projects at the centre that 15 persons were employed full-time at DCO. The director of this centre has experiences in fund-raising and in supporting several types of cultural activities in the region. The director of DCO asked the author to organise a one-day Vision Conference in March 2002. This conference was the start of the LEADER+ Program in the region.

LEADER+

LEADER+ is an EU-program that supports development in particularly vulnerable rural regions of the European countries members of EU. It supports creative and innovative projects that can contribute to long-term and sustainable development in these regions. LEADER+ Program is one of the EU's structural founding programs that is planned to

run until the year 2006. A four-year program of 48 million DKr. will be administrated by the DCO, to support grass roots innovation, more information can be found in: http://europa.eu.int/comm/agriculture/rur/leaderplus/index_en.htm

The LEADER+ Program is based on the idea of a total and integrated development of a vulnerable region based on a serious analysis of the region's possibilities and limitations. This program aims - using innovative development strategies and action plans - to push the region forward based on the so-called *"bottom-up" principle*. That is, ideas and projects to be supported must be born in the local communities of the region where local organisations, local firms, innovators, fiery souls, consultants, etc. go through a creative process to identify the best qualified projects for the region. In few words, LEADER+ supports grass roots innovation. This means that the projects have to be deeply rooted in the local communities and a special committee will make the allocation of the resources, where the relevant actors will be represented. Twelve areas in Denmark were selected to receive support from LEADER+ program, with one of them being the Odsherred region.

In the application for funds from the LEADER+ Program, DCO emphasised that the projects selected should support the social and cultural capital of the region and create sustainable activities, firms and workplaces. The overall theme was: *Improvement of life quality.* In addition it is specified that support and founding will be given to projects that satisfy the following requirements:

- Are knowledge and technology based so that the local products will be both more competitive and environmentally friendly,
- Will take initiatives to facilitate access to new markets for small industries, and
- Will carry out cultural and artistic activities endeavoured to shape the image of the region.

The Vision Conference

As mentioned above, it was decided to begin the LEADER+ Program as a *Vision Conference*, to be organised by the director of DCO and the author of this paper as the main facilitator. The objective of the conference was both:

- To create a discussion forum for the different actors around the program to develop common images of ideas, projects, visions and objectives for the program, and
- To observe a *Vision Conference* in action and to study the development of the facilitation process; these experiences and approaches will be used in the future during other implementations of the program.

The theme of the conference was: *Vividly local communities* - Visions, ideas and goals for LEADER+ program in the region. *The Vision Conference* was carried out at the facilities of the Odsherreds Theatre Centre, a nice place where all the needed facilities were available. The director of DCO and the facilitators (the author and three of his students) met twice to design the conference. Two important tasks were dealt with:

- The content and goals of the conference, and
- The many practicalities related to time schedules, speakers, materials, meals, soft drinks, and other facilities that ought to be available.

The conference started 9 a.m. and ended at 4 p.m., one-hour lunch was planned in the middle of the day (see Box 1). The conference started with a presentation entitled: LEADER+ as a tool for local development. The speaker was the director of the LEADER program in Småland, Sweden. This person has a lot of experience about the possibilities and limitations of such a program in connection with community development. The intention was that this talk should give inspiration and ideas for the future creative work based on the Swedish experiences.

9.00- 10.00	Welcome by the chairman of LEADER+ West Sealand and talk: LEADER as a local development tool by Jan Johansson, Sweden.
10.00-10.15	Coffee break
10.15-11.45	Generation of ideas (divergent phase) in 4 workshops each with a facilitator
11.45-12.00	Pause
12.00-12.30	Plenum: presentation of visions and ideas
12.30-13.30	Lunch
13.30-14.45	Adaptation of ideas (convergent phase) in 4 workshops
14.45-15.00	Coffee break
15.00-15.30	Plenum: presentation of results
15.30-16.00	Conclusions with the representants of LEADER+ and the facilitator

Box 1. The program of the conference

After the main talk, the participants were split up in four sub-groups each having a facilitator. The theme for the group work was: Idea generation - suggests as many projects as possible that should be supported by LEADER+. Brainstorming was used as a technique and its four central rules were used intensively: no criticism, freewheeling, spontaneity and it is permitted to combine others ideas. This was the diverging process. After one hour of brainstorming the sub-groups met at a plenary session where all the ideas produced were outlined.

During the afternoon the same sub-groups started the work, but this time the theme was: *Idea adaptation*- select some few projects from the list generated in the morning and work further to design an application to get support from LEADER+. This was the converging phase. This was an exercise in project design and planning. After one-hour of work the sub-groups met at a plenary session to report about the selected projects. At the

end, one representative of the board of DCO gave a summary of the general results achieved and the work to be done by DCO in the near future. Finally, the facilitator gave a short outline of how the conference went forward as a learning process, and the good and bad experiences of the whole conference were discussed.

Outcomes

Two weeks later, the facilitator presented to DCO his report from *The Vision Conference*. This report contained: the background for the conference, the planned schedule, the actual schedule, the concrete results of the work of each sub-group and its evaluation by each facilitator, the final evaluation of the whole experience and some conclusions (Vidal, 2002).

The conference went ahead as planned, a small delay at the beginning and some waiting time due to the fact that the sub-groups did not end their work at the same time cause some disturbances but these things did not affect the main group work. The invited speaker was brilliant, gave a lot of inspiration, and he gave many examples of simple projects that had been implemented with success in Sweden. He emphasised the importance of supporting small industries, and the necessity of having strategies for marketing and communication.

The reports of each sub-group show that their creative processes were quite different, this is probably due to different participants and different facilitators. In spite of that, many projects were suggested in the morning by each sub-group, on average 25 projects pr. group. It was not a problem while diverging but the wild ideas were missing. In the afternoon, all the sub-groups wanted to continue diverging and had difficulty selecting one or two projects for elaborating as an application. The plenary sessions went very well, very amusing, each sub-group very engaged in their ideas and projects, it reflected a good atmosphere and it was a lot of laughter, a good sign of creative work.

There were many projects within art and culture, and ecology and tourism. However, innovative projects within small industries and IT were missing. This shows the necessity of marketing the LEADER+ program in the sector of small industries and IT. The difficulties in elaborating concrete applications by the different groups show the need for DOC to give support and advice to potential innovators in relation to formulating applications.

In summary, the facilitator concluded in the final report that "*The Vision Conference* had been a positive experience. All the participants and the facilitators learned something. This conference was a big communication event where ideas, wishes, dreams, visions, strategies, plans, and objectives interacted with each other and got closer to each other in a constructive way" (Vidal, 2002).

4. Design and Planning

Running a conference involves two complementary roles: design and planning, and facilitating. The first role involves guiding the participants through a series of events and activities during the allotted time, and ensuring that the conference has a beginning,

middle, and end that fit together as a coherent experience. The facilitating role involves using skills and behaviours to promote collaborative problem solving. In short, design and planning focus in the "building" of the conference, whereas facilitating is more concerned with the management of social processes. As a conference presenter, you are both director and facilitator at the same time. The design and planning role are addressed in this chapter and the facilitating role is explored in the next chapter. Although this conceptual distinction regarding design and planning is made here, in other parts of the book we use the term facilitator to encompass both roles.

Based on the discussions of Sections 2 and 3, it is possible to stipulate that the process of the design of a *Vision Conference* can be divided into three stages: the pre-conference planning, the conference in action, and the post-conference output.

Pre-conference

It is a common belief that detailed planning at the pre-conference stage is essential to ensure that the facilitators help to create a group work at the conference that focuses on the task and that this needs tight organisation. Moreover, it is also argued that this first stage is as important as running the group work at the conference itself because without pre-planning the chances of success will be greatly reduced. On the other hand, it is our experience that too much planning and organisation might kill spontaneity and creativity in the group work. Therefore, a suitable balance should be found, a suitable framework that gives space for the development of the rational and irrational processes, and for adaptive decision-making during the facilitation of the group work.

At this stage, it is of central importance that the facilitators discuss with the organisers of the conference the purpose, the task, the organisation and the management of the group work. Enough time should be allocated to discuss these themes thoroughly so that, at the end of this stage, the organisers of the conference and the facilitators have developed a consensus about the objectives and development of the conference. This goal compatibility is of extreme importance. In addition, the processes, tools and techniques that might be utilised during the conference should be discussed. How will the participants react to them? is a central question to be discussed at this stage.

Another important activity in the pre-conference stage is the collection of relevant information by the facilitators and the dialogue with the organisers of the conference about central topics and their possible outcome during the conference, in other words *visioning* possible processes and creating scenarios of possible outputs. The task should be deeply understood by the facilitators as well as the possible conflict areas. Previous relevant reports from the organisers and reports from similar conferences elsewhere should also be available to the facilitators.

It is also important that the facilitators use some time to outline in detail the agenda and the organisation of the conference itself. Afterwards, these issues should be discussed with the organisers of the conference to achieve consensus.

Even at this preliminary stage, the facilitators should think about the last stage where the conference will be evaluated. An outline of the final report could be elaborated and a

simple *information system* could be designed to be used and filled-up during the next two stages. Some facilitators prefer to use a personal *logbook* from the very beginning to take note of important information, events, conflicts and decisions; such book will be very valuable in the last stage of the conference.

For an experienced facilitator, it is usually sufficient to have two intensive three-hour meetings with the organisers of *The Vision Conference* to go through the pre-conference stage. At the end of this stage a short document should be prepared with the intentions, the task, the agenda, etc. of the conference to be sent to the invited participants together with the invitation letter.

Let us see from a practical viewpoint the many tasks to be carried out during the preparation of a conference or a workshop. Five separate tasks are central in the preparation process (Brooks-Harris and Stock-Ward, 1999):

1. *Collecting preliminary information.* Some key questions at this stage are:
   - Who is initiating the conference?
   - Who will be attending the conference?
   - What are the topic, the title, and the content of the conference?
   - Why is the conference being requested?
   - When will the conference be offered?
   - How long will the conference last?
   - Where will the conference take place?
   - What arrangements will be made? By whom?

   These questions have to be discussed and explored before you decide to present a particular conference to a particular group.

2. *Negotiating an agreement.* Here there are some questions to ask yourself before deciding whether to be a facilitator for a conference:
   - Am I the best person to facilitate this conference?
   - Do I have enough background knowledge? If not, can I collect it?
   - Can I design an effective intervention for this group?
   - Are my facilitation skills appropriate for this group?
   - Should I involve a co-facilitator?
   - Do I have enough time to prepare?
   - What are the expectations of the requesters? Of the participants? Of other stakeholders?
   - Is the fee or the other incentives satisfactory for you?
   - What are the consequences for you of the potential results of this conference?

3. *Determining the needs of participants* The needs of the participants should be determined within the following three areas:
   - *Knowledge:* Do all participants have the same background knowledge about the theme to be discussed? Should some material be elaborated? Should some lectures be included in the program of the conference?

- *Attitudes:* Do all participants have the same attitude to the conference? Are there differences? Can you register disagreements and conflicts?
- *Motivation:* Is the conference voluntary or mandatory? How can I increase motivation? How can I encourage participants to reflect on their own experiences? How do I create group dynamics?

4. *Setting goals and learning objectives.* A very useful way to organise your ideas and prepare for designing and planning a conference is to set goals and objectives. Goals are broad aims or purposes. A crucial question to identify goals is: Why am I facilitating a conference on this topic to this group at this time? Objectives are more specific and measurable methods of realizing goals. Objectives answer the following questions, "How will the goals be met?" and "What is the desired result?" Ideally objectives are:
   - *Positive:* "Participants will collaborate in producing innovative ideas"
   - *Realistic:* "The participants will learn to work in groups"
   - *Relevant:* "Participants will learn about innovative ideas in other areas"
   - *Specific:* "We will focus on the following themes: nature, culture, etc."
   - *Measurable:* "The result of this conference will be presentation of many innovative and usable ideas"
   - *Flexible:* The conference should be designed to permit the bending or change of the objectives during the running of the group work.

5. *Choosing additional resources.* The most important resources in a conference are the facilitator and the participants. Additional resources fall into the following categories:
   - Up-Front displays, such as a chalk or marker board, an overhead projector, or a slide projector
   - Written materials, such as handouts, papers, and worksheets
   - Multimedia resources, such as music, videotapes, or computer-generated media
   - Specialised knowledge and experience, such as invited experts, advisers, or specialists
   - Interactive resources, such as games, simulation materials, or interactive computer activities

The Conference

A crucial component of directing conferences is considering the environment you want to create. The environment is all of the physical surroundings, psychological or emotional conditions, and social or cultural influences affecting the growth and development of creative and collaborative problem solving. Five of the most important aspects of creating a positive environment are (Drum and Lawler, 1988):

1. *Physical environment is comfortable*
   The physical environment will influence the atmosphere and interaction patterns that occur within the conference. Physical arrangements communicate information about levels of both authority and formality. At one extreme is an

arrangement that enhances authority and expertise and discourages interaction and collaboration. At the other extreme is an arrangement that communicates equality and encourages interaction and participation. A list of physical environmental conditions is the following: group size, location and size of the rooms, level of authority, level of formality, seating arrangements, opportunity for eye contact/sight lines, need for a writing surface, and need for movable furniture.

2. *Relationships are encouraged*
   The participants should have relationships with: other participants, the facilitator, and with the content of the experience. As a facilitator you can choose activities in which participants interact with one another and learn from other participants. A positive relationship between the facilitator and the participants begins when the facilitator takes the time to greet participants and make sure everyone is comfortable at the beginning of the conference.

3. *Communication is multidirectional*
   In contrast to traditional settings, communication in a conference is not expected to be unidirectional. Participants should be able to listen and understand as well as express ideas. The facilitator should make sure that there is time for participants to share their ideas and for him to listen to their questions, opinions, and experiences. It is a good idea to build in opportunities for both formal and informal dialogue to occur throughout the conference. Informal dialogue with participants is a way for the facilitator to keep the conference vital and engaging as well as a way to gauge the impact of the conference.

4. *Trust and acceptance are built*
   In order for participants to be able to collaborate in a personally relevant manner, they must feel safe and they must be able to trust both the facilitator and the other participants. If the participants do not feel safe in the conference, it is unlikely that they will fully engage in active and interactive activities. The facilitator should create processes of building trust and enhancing his credibility and authenticity. Credibility is similar to expertise but also includes personal presentation and having something to offer the participants. Authenticity includes consistency and congruence, ability to admit errors, and acting as a positive role model.

5. *Encouragement is provided*
   Participating in a conference is not easy for all people. Therefore, encouragement must be provided so engagement occurs at a pace that meets the needs of the maximum number of participants. Some methods for providing encouragement are:
   - Projecting confidence that change can occur
   - Sequencing activities so they proceed from easy to more difficult
   - Using the progress of some participants to encourage others
   - Attending carefully to the attainable aspects of each participant’s goals

- Before anyone can speak a second time, everyone should have the opportunity to speak once.
- All opinions must be considered and respected.
- Be critical in a constructive way.
- Listen, no interrupting each other.
- Only one person may speak at a time.
- It is possible to agree to disagree. Identify conflicts.
- No put-downs, name calling, or personal attacks.
- Mocking is not permitted.

Box 2. Sample Conference Ground Rules

At the beginning of the conference day, it is important that the facilitators explain to the participants the purpose and the agenda of the conference, before the work in sub-groups begins. Explain that the agenda can be changed if necessary, and that the time schedules must be respected to avoid waiting times when the participants meet for the plenary sessions. We present six different events you can use to start a conference. However, most conferences will not address all six of these components. In a complex conference, it may be important to spend more time introducing the conference with goals and objectives, ground rules, and assumptions as separate concerns. These six events are:

- Facilitator introduction
- Participant introduction
- Goals and objectives
- Clarifying expectations
- Setting ground rules (Box 2)
- Clarifying assumptions

In *The Vision Conference*, some creativity tools will be used in the problem solving process. Other conferences and workshops might use other tools. The tools to be used have been selected from a huge number of well-known techniques. The facilitators should be convinced that the selected tools are the most suitable for the conference, but if during the sessions it is detected that the tools are not supporting adequately the facilitator should be capable of switching to other more appropriate tools. Chapter 5 will discuss this topic in what concerns creative tools and methods (Vidal, 2004c). One thing is crucial: the participants should feel at ease with the facilitator, the process and the techniques used, in this way true participation is ensured. Finally, as we pointed out the facilitators are also the managers of the conference; this will have some implications to be discussed in the next chapter.

Maintaining a coherent conference message is an important behaviour. A central part of the design and planning role is using the theme in a way that helps the conference fit together as a consistent and coherent package. Participants need to see and feel that sense of consistency. Referring back to a consistent theme at times of transition and reforming the theme with punch lines are ways that make the activities fit together as a package and reinforce the most important concepts.

Think about pacing and timing issues. Journeys of any length can be thought of as a series of several steps, the same is true of a conference. As you decide how to pace and time your conference activities, consider which of your goals are most important and allot your time according to these priorities. Make sure that there is enough time for the facilitation processes. However, it is also crucial to think about the impact of other daily, monthly, or annual events on your conference.

At the end of the conference, four activities are central:

- Reviewing content to consolidate the experience
- Planning for the future
- Feedback/Evaluations
- Follow-Up

Post-conference

After the conference, the facilitators have to write an accurate report of the conference/workshop. This report should include the following themes:

- An outline of the background and purpose of *The Vision Conference*,
- The results obtained at each sub-group,
- The evaluation by the facilitator of the work in each sub-group,
- The evaluation of the whole conference by the facilitators, including good and
- bad experiences, and
- What did we learn from the experience?

The fixed objectives can be used in the evaluation process to see discrepancies between our expectations and the achieved results. The facilitators should try to get some feedback on the conference from the organisers and the participants. This could be done by asking the participants to fill-in a questionnaire that focuses on the learning aspects of the experience. This is of central importance if it is planned to carry out a new conference after some period of time to produce new visions and to learn from the experience.

Measuring your performances is more important in some situations than others. Thus, different conferences call for different methods for evaluating your progress. An evaluation process seeks to determine if a goal has been accomplished. Evaluation can also be used to obtain information needed to help us to improve our performances in the future. The following four questions related to conference evaluations are central (Herman, 1987):

- *Why should you evaluate your conference?* As you begin to plan an evaluation, three questions should be answered:
    1. What is the purpose of the evaluation? Usually, we evaluate to find out how we did it and to find out our mistakes to improve our performance next time. An evaluation can also be a documentation that you are worth your fee.
    2. For whom is the evaluation been conducted? Depending on the context of the conference you are providing, different stakeholders may have an

interest in the results of the evaluation. It is often the case that for conference evaluations the role of evaluators, sponsor, stakeholder, and user are all played by the same people.

3. Who will conduct the evaluation? Before you plan your evaluation, you must decide whether you should design and conduct the evaluation yourself or if you should select an outside evaluator. Although many facilitators conduct their own evaluations, there may be situations there may be situations that call for an outsider who has more expertise or more time and resources to conduct an extensive evaluation.

- *What kind of overall strategies should guide your evaluation?* Before developing a specific evaluation plan, a conference evaluator must make three choices about evaluation strategies:
    1. Will you use a formative or a summative strategy? Formative evaluation demands collecting and sharing information for conference improvement, while summative evaluation looks at the total impact of the conference. The first one occurs in the midst of a conference in order to improve it, while the second one occurs at the end of the conference and measure the outcome. Summative evaluations at the conclusion of a conference are most common because the short-term nature of a conference makes it difficult to collect and use data for formative evaluations.
    2. Will you collect quantitative or qualitative data to evaluate the conference? Quantitative data give precise numerical measures, while qualitative data provide rich descriptive materials. Many facilitators choose to collect both quantitative and qualitative data to take advantage of the strengths of each strategy.
    3. Will you be conducting a formal or an informal evaluation? Informal evaluation depends upon causal observation, implicit goals, intuitive norms, and subjective judgement, while formal evaluation is based on controlled comparisons and objective measures. These three strategies can be combined, not all of them are realistic, and the four most commonly used are shown in Box 3.

- *What kind of variables should you measure?* Now you have decided your evaluation strategy, the next step is to determine which variables to measure or observe. Most conference evaluations target one of three types of variables: satisfaction, the accomplishment of objectives, or behaviour change.

- *What are the steps in planning an effective evaluation?* Five sequential steps are recommended to plan an evaluation: Formulating questions and standards, selecting a research design, analyzing information, and reporting information.

Informal/Qualitative/Formative
Half-way through a full-day conference, the facilitator asks for verbal feedback and presents choices for how to spend time during the rest of the session.

Informal/Qualitative/Summative
At the end of a conference, the facilitator leads a discussion about the activities used, including strengths and weaknesses of each activity. The facilitator takes notes and uses this feedback in designing her next conference on the same topic.

Formal/Quantitative/Summative
At the end of the conference, the facilitator distributes an evaluation form that asks the participants to give numerical rankings regarding the accomplishment of each objective.

Formal/Qualitative/Summative
At the end of the conference, the facilitator distributes an evaluation form that asks participants to respond to open-ended questions about each of the activities.

Box 3. Four evaluation strategies commonly used for conferences
(Brooks-Harris and Stock-Ward, 1999)

5. Other Conferences/Workshops

Several other types of conferences and workshops can be found in the literature. These have been developed and used in different contexts and countries. Let us mention some of the most popular.

The Future Workshop is very much used in North Europe. It was originally developed by Robert Jungk (Jungk and Muller, 1987) for citizen groups with limited resources who wanted influence in the decision making process related to their future life. It is a workshop or conference meant to shed light on a common problematic situation, to generate visions about the future, and to discuss how these visions can be realised. It is usually composed of five phases:

1. Preparation phase (design and planning)
2. Critique phase (critical understanding)
3. Fantasy phase (visions)
4. Implementation phase (actions)
5. Permanent workshop (group work)

The main stages are: Critique, Fantasy, and Implementation. There are many similarities in this workshop to *The Vision Conference*. In *The Vision Conference*, there is not a critique phase; the task is the creation of visions, projects and activities for the future. More details about *The Future Workshop* and its applications will be presented in Chapter 6.

Scenarios Workshops and Consensus Conferences has been developed by The Danish Board of Technology, an independent institution established by the Danish Parliament. A Scenario Workshop starts with a problem looking for solutions; A Consensus Conference focuses on Society's use and regulation of technology. The solutions can be technological, regulatory, or maybe a new way of organising and managing certain problems.

A *Scenario Workshop* is a local meeting that includes dialogue among four local groups of actors: policy-makers, business representatives, experts and citizens. The participants carry out assessments of technological and non-technological solutions to the problems, and develop visions for future solutions and proposals for realising them. Before the workshop can take place, a set of scenarios are outlined by the organisers, describing alternative ways of solving the problem. They have to be different with respect to both technical and organisational solutions presented and the social and political values embedded in them. The workshop process may last for one to two days. This process has three main phases:

1. To comment on and criticise the scenarios by pointing out barriers to realising the visions,
2. To develop the participants' own visions and proposals, and
3. To develop local plans of action.

The process is guided by a facilitator and takes place in 'role' groups, 'theme' groups and plenary sessions. Dialogue among participants with different expertise, values and experiences is essential. Various tools can be used to achieve good dialogue and the production of results in the form of identification of barriers, visions and proposals for action to be taken. Two examples of Scenario Workshops carried out by the Danish Board of Technology are: "Urban Ecology" and "The Library of the Future".

A *Consensus Conference* is a public meeting, which permits ordinary citizens to be involved in the assessment of technology. The conference is a dialogue between experts and citizens. It is open to the public and the media. Usually, it is attended by some members of the Danish Parliament and other politicians. *The citizen panel* plays the leading role, it consist of around fourteen individuals who are introduced to the topic by a facilitator. The citizen panel formulates the questions to be discussed at the conference, and participates in the selection of experts to answer them. The panel has two weekends for this preparation. *The expert panel* is selected in a way that ensures that essential opposing views and professional conflicts can emerge and be discussed at the conference. Suitable experts are not only knowledgeable but also open-minded and good communicators with a broad view of their field. *An advisory/planning committee* has the overall responsibility of making sure that all rules of a democratic, fair and transparent process have been followed.

On the first day of the conference, the experts present their answers to the questions from the citizen panel, from the point of view of their field of expertise. The following morning is reserved for clarifying questions and for discussions between the expert panel, the citizen panel and the audience. The rest of the second day and the third day are

reserved for the citizen panel to produce a final document, presenting their conclusions and recommendations. Consensus on attitudes and recommendations are achieved through open discussion. Thus the final document is an expression of the extent to which the citizen panel can reach consensus. On the morning of the fourth day, the citizen panel presents the final document to the experts and the audience, including the press. The experts have the opportunity to correct misunderstandings and factual errors; at this point they are not allowed to influence the views of the citizen panel. More details about this workshop and this conference can be found in (Andersen and Jæger, 1999).

Future Search and the *Search Conference* are large group planning meetings that brings a 'whole system' into the room at one time to work on a task focused agenda. They focus on the future, articulating what it means for each participant present and working out how to influence it. *Future Search* follows a progression of events approach from the past into the future, whereas *Search Conferences* are more concerned with finding the best fit between the system and its environment.

A typical *Future Search* conference lasts 2-3 days with up to 64 persons and uses the following steps:

- *Focus on the past.* Examine a collective past from three perspectives: The individual, the organisation and society. Find patterns, trends and the direction of movement.
- *Map the present in all its messy complexity.* Examine the current events, trends and developments outside the organisation that seem to be shaping the future. Understand the strengths and characteristics of the organisation. Generate list of 'prouds' and 'sorries', the things about which people feel good and bad.
- *Focus on the future.* Developing ideal future (5-20 years) scenarios describing the state of being there, not the process of getting there. Find common ground and develop a shared vision.
- *Reflect, learn and act.* Prepare suggested action lists for oneself, the group, and the whole organisation in order to bring closer the future that has been described.

This conference has been broadly used in the USA. Details about *Future Search* can be found in (Weisbord and Janoff, 2000).

The Search Conference brings together from twenty to thirty-five people who work together as a group to develop strategies plans for a system they share. *The Search Conference* has the following content over 2-3 days:

- *Learning about our turbulent environment.* Identifying the changes affecting the future of the system and imagining the probable and desirable global future.
- *Learning about the system.* Developing a picture of the system's functioning and creating a list of what to keep and change.
- *Action planning.* Taking the strategic objectives for the system and developing implementation plans.

This conference has been broadly applied in Australia. Details about *The Search Conference* can be found in (Emery and Purser, 1996).

6. Further Remarks

The Vision Conference was formatted as a strategy to develop visions in the form of ideas or projects for developing an organisation or a community. The design of the conference task embodies the principles of creative problem solving while the social organisation of the group expresses the principles of facilitation of responsible participative democracy.

The Vision Conference is characterised by three main aspects:

1. The focus on group dynamics while other approaches focus on methods or on approaches for task solving as the steering factor,
2. The Vision Conference is based on modern concepts of creativity and the facilitation of creative problem solving processes, and
3. The Vision Conference emphasises collective work and collaborative learning through the interaction of the participants with the aim of learning how to build, sustain, and develop responsible participative communities.

We have learned to design, plan, and evaluate Vision Conferences; the next task is to try to answer the question: What did we learn from this experience? This is the field of the systematisation of praxis. To systematise is to describe, structure, and reflect analytically on the development of a practical experience, see further (Vidal, 1991, 2004b).

Since year 2002, DOC has evolved to LEADER+ West Zealand, an autonomous NGO. This organisation has as its main objective to give support to cultural, social, environmental, industrial, and commercial projects in the region. It is economically financed by EU's development program for vulnerable regions. This organisation has adopted *The Vision Conference* and similar workshops as a main tool in its strategy making work. The author has been facilitator of the following Vision Conferences in West Sealand:

- Odsherred, West Zealand 2025 – A Vision Workshop, April 2001
- LEADER+ West Zealand – A Vision Workshop, March 2002
- National and International Cooperation under LEADER+ Program, November 2003
- Development in West Zealand (2007-2013), August 2005.

In addition, before applying for economical support to a project this organisation recommends that the group of initiators of the project organise a workshop to clarify ideas and visions. The fees of the facilitator will be paid by LEADER+ West Zealand. In the next chapter, we will mention some of these projects where we have been facilitating their workshops.

The Vision Conference has been applied to other situations. I have conducted conferences and workshops for small firms, consulting firms, schools and small public institutions. Some of these organisations have adopted this conference as a permanent approach in their strategically work. I have even use this approach to design and planning of a family party with big success. My students have been very creative in finding applications of this form of collective work. Traditional meetings in trade unions, clubs, schools, and other

organisations have been transformed to conferences and workshops following some of the principles outlined in this chapter.

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CHAPTER 3

THE ART OF FACILITATION

A small group of thoughtful, empowered and committed citizens can change the world.

1. Introduction

"The facilitator was as the director of a performance (theatre, music), where each participant played a central role. By the end of the workshop, so much synergy has been created that all the participants exploded in a rush of happiness and pleasure. It was such a fantastic experience of working creatively and collectively to achieve some goals. It is the similar feelings that football players experience after winning a match, where the victory has been the result of a combination of individual creativity, collective hard work and suitable facilitation".

This metaphorical description was written down by a journalist after the finish of a 3-days workshop that can be characterized as a success. One essential activity was the facilitation, support and guidance of the different social processes occurring during the workshop, this was art. In the last chapter, we characterised the role of the facilitator in a conference or a workshop as being two-fold: designer and planner, and a manager.

Facilitation as design was discussed in the last chapter. The main purpose of this chapter is to focus on facilitation as the management of social processes in groups. The essences of group facilitation will be introduced in this chapter as well as some guidelines for facilitators. This chapter will end with a discussion of the facilitation of community development.

Obviously, the type of mess or problematic situation the organisation or community is confronting, the experience and maturity of the work group, and the adopted strategy for change, will set the boundaries for the type of facilitation to be carried out. The academic world often focuses on abstract concepts, methods, and technologies instead of on the *context* in which they are used. But methods and technologies cannot initiate or create an organisational change process on their own. In community development the person or agent supporting this change process is usually called facilitator, animator, coach, catalyst or mediator. These different names express the different roles this actor is playing in the change process. We call this agent of change a *facilitator*.

In Section 2, a first introduction to the task of facilitating a group in a problem solving process and his/her different roles he/she can play as facilitator are presented. Thereafter, a real-life case study related to organisational development will be extensively discussed. This was the case of the establishment of the European Tapestry Forum at a workshop conducted in March, 2001, for a group of tapestry weavers from North Europe, and facilitated by the author of this book. In Section 3, the design and planning stage of this workshop is presented, then in Section 4 the conduction of the workshop is depicted focusing on the facilitation process and the achieved results. Then, in Section 5 this workshop is evaluated.

A more profound discussion of the art of facilitation and some guidelines for "good" facilitation will be presented in Section 6. In Section 7, further discussions of the task of facilitating communities and small organisations for change are elaborated. Finally, the last section adds some further remarks.

2. Group Facilitation

Webster's dictionary defines to facilitate as: to promote, to aid, to make easy, or to simplify. In other words a group facilitator is a person who supports the group (or team) during the task solving process. A team is a very experienced group where each individual can be the facilitator. In a workshop a distinction is made between *content* (the theme under discussion), *approaches* (the way a problem is tackled), and *social processes* (group interaction and communication). Facilitation focuses primarily on approaches and processes. That is, the facilitator does not need to be particularly expert about the theme being discussed. Too much or too little knowledge on the subject matter might actually hinder the process.

The task of the facilitator is usually compared to that of a football coach or the conductor of a symphony orchestra. As a coach, the facilitator sometimes knows very well the members of the group and he guides them to achieve some goals. As a conductor, the facilitator has to conduct an orchestra which he had not worked with previously and which will be improvising rather than performing a standard piece of music. It is precisely the need for flexibility and the unpredictability of the group processes which make the facilitation task as management so unpredictable and fascinating.

The facilitator is there to ensure fruitful group processes whether this a brainstorming session for getting new ideas or using some tool to structure a complex situation. The role of the facilitator is to ensure that the group works as a constructive, collaborative, creative and cohesive unit. This task has three elements: leadership, referee, and neutral (Schwarz, 1994).

The *leadership* role usually demands the following activities:

- *Focus*: to provide a focus for the group.
- *Stimulate*: to encourage constructive debate between the participants
- *Suppor*t: to bring out information from introverted participants and to allow new ideas to be submitted.
- *Participate*: when the group is interacting poorly or is going in the wrong direction, the facilitator must be willing to promote new discussions.
- *Team building*: to form a cohesive, interactive, dynamic and creative group.

The *referee* role usually demands the following activities:

- *Regulation*: to maintain order of the group discussion, discouraging participants from talking at the same time, or dominating the floor.
- *Protect participants*: to ensure that all contributions to the discussion are treated equally and that no-one is rebuffed for their input.
- *Deal with problems*: to control problem participants allowing everyone to participate freely.
- *Deal with conflicts*: to identify conflicts and to create space for a fruitful discussion.
- *Timekeeper*: to adhere to workshop timetable thus ensuring completion of the agenda.

The *neutral* role usually demands the following activities:

- *Pragmatic*: to take detached look at the discussion viewing each issue on its merits.
- *Encourage feedback*: to promote discussion of each selected issue, by all members of the group.
- *Impartial*: to be neutral to the discussions, this frees the facilitator to focus on the process rather than the content of the discussion and hence asking pertinent and stimulating questions.

A facilitator is *not* someone who:

- Is involved in the task or issue being examined
- Is clerical or errand person
- Is able to freely express his opinion on the issue or topic
- Has a stake in the decisions made
- Has decision making authority in the group
- Is an arbitrator or judge, the group is responsible for the decisions it makes
- Is a lecturer or a teacher
- Is necessarily an expert on the issue to be discussed
- Is the centre of attention
- Is the maid

Summarizing, we can say that a facilitator is a person who has the job of empowering the participants to learn in an experiential group. An experiential group is one in which learning takes place through an active and consciously involvement of the whole person. The facilitator has been appointed to this task by the organisers of the workshop to carry out learning and problem solving processes and the group members voluntary accept the facilitator in this role.

3. Facilitating Organisational Development – The Case of the European Tapestry Forum

From March the 2nd to the 4th, 2001, a three-day international workshop was carried out in Nykøbing Zealand, West Zealand, Denmark, supported by a facilitator. The experiences obtained during the facilitation of seventeen women, all of them tapestry weavers representing Denmark, Sweden, Finland, Norway, Island, Scotland, Ireland, Germany, Poland, and Austria, are reported here. These weavers wanted to start an organisation for tapestry weavers in Europe. They met for the first time at this workshop entitled: "Back to Basics – Tapestry in the New Millennium". This workshop had three main purposes:

- To register "the state of the art" of tapestry weaving in Europe,
- To develop activities for the strengthening of tapestry weaving in the coming years, and
- To organise European Tapestry Forum and its work to enforce European cooperation.

The workshop was organised by the Danish section of weavers, supported by the Development Centre Odsherred (DCO). DCO hired a well experienced facilitator of

workshops to conduct this event. The facilitator is also a professional visual artists being well acquainted with the problems of art and artists in modern societies. Let us first give some background of the problematic situation of the tapestry weavers.

Background

The craft and art of tapestry in Europe has a long history. Les Gobelins in Aubusson, France, are rather well-known. Tapestry weaving in the last century has been characterized by single outstanding artists but they are very few of them in Europe. This is the main reason why in most countries, they have not been able to develop their own national platforms and organisations to reproduce and develop the art tapestry profession. They have to rely on the schools of arts and crafts, the museums of decorative arts, the art halls, etc. The period 1990-200 had been very bad years for tapestry weaving in most Europe. Art schools, museums, galleries, art halls, etc. had completely disregarded this art form. They have been focusing more in design and applied art. To survive many tapestry weavers are moving to the borderlands of the craft exploring new expressions. The very few international exhibitions for textile art have moved to platforms for reflections on fine art. Moreover, two of the most important international events, the biennial in Lausanne, Switzerland, and the triennial in Helsinki, Finland, have been closed. These tendencies cause that the new generations and the public in general are not aware of the works of tapestry weavers. There is not doubt that to survive, the tapestry weavers as soon as possible have to start a process of renewal and visibility both national and at the European level.

The Danish section, a group of tapestry weavers in Denmark, decided to take the initiative for creating a forum to develop and implement a strategy that can give their profession a badly needed innovation and produce new impulses to give the profession visibility and better working conditions in the whole Europe. They wanted to create an organisation of tapestry weavers in Europe: The EUROPEAN TRAPESTRY FORUM (ETF for short), a European umbrella forum based on the national organisations. ETF should support both permanent and recurrent activities financed by the European countries and the EC. In the first letter of invitation send from Denmark by March 2000, the following activities were formulated:

- Establishment of a virtual newsletter and gallery for tapestry weavers,
- Establishment of an annual working seminar for tapestry weavers, and
- Establishment of a censored triennial exhibition for tapestry weavers.

The Danish section applied for the support of DCO. DCO should be a secretariat, adviser, sparring partner and economic liable for the cooperation. The Danish section also urges the national contacts in each country to appoint a national working group that will participate in the establishment of ETF. They also emphasized that these working groups should have “inclination and courage to be forerunner for an innovative reinforce of the profession”. Finally, the Danish weavers enhanced that “their sophisticated craft must survive their generation and that they owe the future to pass it on a viable and innovative form”

The first event in this process was the organisation by the DCO of a workshop in Denmark in cooperation with the Danish section. Based on the feedback from the first letter and other contacts, twenty tapestry weavers were invited to a three-day workshop. The expenses were covered by Scandinavian and Danish fund sources.

Two weeks before the event, the Danish section contacted the facilitator after a suggestion of the director of DCO, to support the problem solving processes on one day (Saturday). It is rather unusual to contact the facilitator so late because usually the facilitator has to be part of the pre-planning process. The problem was that the organisers had no economic resources at the moment to pay the facilitator's fee. In normal circumstances the facilitator will have refused to take the job. But he became very interested in the task due to its crucial relevance to tapestry art. The facilitator, as a visual artist, is also very concerned about the situation of art in modern societies in general and visual art in particular. The facilitator decides to take the job and demands a meeting with the Danish section before the event took place.

Two Hours Planning

The facilitator had a meeting with the leader of the Danish section one week before the workshop. At this meeting the Danish section provided information about the objectives of the workshop and the background of the participants. The objectives of the workshop were formulated as:

- Diagnosis of the situation of the craft in each represented country,
- Design actions towards visibility of tapestry weaving, and
- Establishment of a European network for tapestry weavers.

It was also informed that this workshop will be the first time the weavers met in this network and that it will be very important to achieve some results in the form of an action plan and some projects that will provide the first step in the right direction towards the establishment of a strong organisation: EFT. It was also informed that the participants are the leading tapestry weavers in Europe with no previous experience in organisational or political work.

During this meeting, it was also agreed that the facilitator should be present during the whole workshop from Friday to Sunday, and not only on Saturday as previously proposed. The facilitator argued that you cannot be part time facilitator. Then, a discussion started about the program of the workshop. It was agreed that on Friday the representatives will present the situation of the craft in their country, this will give the background information to all participants and the facilitator, specially in what concerns the level of organisation and awareness of the weavers situation in each country. This will also be a nice way to introduce the participants to each other from the beginning. The facilitator suggested if it was possible to find a person that could give a pessimistic talk about the future of tapestry weaving in Europe if nothing was done, that is if things continue as the last two decades. Unfortunately, the Danish section was not able to find such a person.

At this design and planning phase, the facilitator suggested the following idea: on Friday, when the participants arrive and receive their keys for their rooms they will get a paper asking them to write down at most five objectives that they wanted to accomplish during the workshop. They should do it very fast using at most ten minutes time. The purpose of this inquiry is to obtain some background information that the facilitator will use in the planning of the sessions on Saturday and Sunday. Moreover, this inquiry will also tune the participants into the purpose of the workshop already from the moment of arrival: to create actions to achieve some common objectives.

It was agreed that on Saturday, some specific themes and objectives for the workshop will be clearly specified. These will be formulated by the facilitator and will be presented to all the participants at the beginning of the session for general discussion and approval. Thereafter, the participants will be divided in two groups. These groups will be facilitated to produce ideas (using brainstorming) to be carried out by the ETF. Thereafter, at a plenum each group will present their ideas/projects, afterwards a prioritisation will be done by all participants. After lunch, the four ideas/projects with highest prioritisation will be selected for further discussion in four groups (five persons per group each of them having an elected facilitator). The results of each workshop will be presented at a plenum by the end of the afternoon for discussions.

The same groups will work on their projects on Sunday morning outlining action plans and appointing responsible for the implementation of the projects. Finally, at the end of the morning session on Sunday an evaluation of the whole workshop will be conducted.

This program, shown in Box 1, was accepted by the leader of the Danish section, she had great confidence of the abilities of the facilitator. The facilitator felt very free to do whatever was needed to make the workshop a success. The facilitator had the impression that the Danish section was happy to place the responsibility for the success of the workshop in the hands of the experienced facilitator. This gave a lot of responsibility to the facilitator; the workshop has to be a success. This is a challenging and important task, he expected highly motivated participants and he has to convince them of the importance of the workshop and that they will be making history, the death or survive of the craft will be in their hands.

The facilitator also emphasised that his own objective was not only to conduct a successful workshop but also to show the participants the craft of facilitation (learning by doing), so that they could use the same approach back home when organising the tapestry weavers in their home countries. Moreover, the future ETF meetings could be organised as workshops. In other words the workshop should also contribute to the empowerment of the participants.

PROGRAM

Back to Basics

Tapestry in Europe in the new millennium

Workshop in Nykøbing Sealand, Denmark the 2.-4., March 2001

2. March

16.00-18.00 Arrival to DOC. Accommodation
18.00-19.00 Dinner
19.30-21.00 Presentations: The state of tapestry in my country
21.00- ? Social gathering

3. March

08.00-09.00 Breakfast
09.00-10.15 Round table: Future of tapestry in Europe and European cooperation
10.15-10.30 Coffee
10.30-12.00 Workshops: Ideas about the future of tapestry in Europe. Quick plenum.
12.00-13.00 Lunch
13.00-15.00 Workshops: Continuation from the morning
15.00-15.30 Coffee
15.30-18.00 Plenum: Presentation of the results of the workshop. Development of an outline to develop ETF
18.00-19.00 Dinner

4. March

08.00-09.00 Breakfast
09.00-10.30 Plenum: Discussion of the content and structure of ETF
10.30-12.00 Plenum: Development of an action plan
12.00-13.30 Lunch
14.00 Departure to Copenhagen
16.00-17.30 Visit at the Danish Parliament. The artist Bjørn Nørgaard tells about his work with the newly exhibited "gobelins" at the parliament.

Box 1. The program of the workshop

4. Facilitating the Workshop

The workshop took place at the Theatre in Nykøbing Sjælland, West Zealand, Denmark. All the physical facilities were optimal. Meals, coffee, and drinks were available at a high quality level. Each participant got his own room near by the locals where the workshop was to take place. The Danish section and the DCO had really set up a perfect scene for the workshop.

Friday Evening

To the question:
Which objectives do you have with the workshop? List at most five; thirteen participants replied given in average four objectives per person. These are shown in Table 1, grouped in fourteen titles together with their scoring rate. This list shows that the participants had a great variety of motives and objectives, and that the group is rather heterogeneous.

After dinner representatives of nine countries presented the situation of the craft in their respective countries. The talks were not specifically focusing on the themes of the workshop. Much time was used to show slides of tapestries of their most well-known artists, but very little factual information was given about the situation of tapestry weaving in their respective countries.

The facilitator concluded that with exception of Norway, tapestry weavers were isolated, invisible, and had difficulty in exhibiting and selling their art in their country and Europe as a whole. Moreover, few education centres existed to train the next generation, the average age of the weavers is rather high and trade organisations do not exist.

Craft status/visibility/selling	6
Organisational development	6
Exhibitions	6
Internet	6
Socialisation/see friends	6
Inspiration/learn/hope/talk	6
Status/direction of the future	4
Define/discuss tapestry	3
Working seminars	2
Education	2
Ways to increase quality	2
Visibility/media	1
To find support/acceptance	1
Join projects	1
Total	52

Table 1. Objectives of the participants

The atmosphere of this first part of the workshop was very encouraging because most participants were very open, nice to each other, very concern about the future of their craft and many of them were convinced that something has to be done. When the facilitator went to bed, he was sure that what he has planned for the next day was not going to work. The weavers were not ready to work in a workshop to produce innovative ideas. Most of them had not participated in this kind of workshop and had no organisational experiences.

Saturday Workshop

Five o'clock in the morning, the facilitator waked up and he knew now what ought to be done. He replanned the workshop. He thought that it was needed to start in plenum to discuss and inform each other about their objectives and wishes to construct a solid basis for the new coming organisation, ETF. The idea is to attack directly the main issue. This suggestion was accepted by all the participants.

The day was started by the facilitator giving a short talk (10 minutes) about how he saw the situation of the tapestry weavers in Europe: lack of identity, lack of visibility, and lack of organisation. He concluded that the main objectives of the workshop should be focused on:

- How to develop ETF?
- How to become proactive instead of reactive? and
- How to become more extroverts in relation to other visual art professions?

In addition, the facilitator suggested that all the participants should reflect about the following question: What can I do to support the development of ETF?

Thereafter, the facilitator suggested starting in plenum with the first steps of a SWOT analysis, by enumerating the strengths, weaknesses, opportunities and threats of the new organisation, ETF. Only two of the participants knew a little about this method. The idea was to conduct this analysis in plenum from 9.15 am to 10.15 am supported by the facilitator, to ground some common basis for the later idea generation workshops. Then after a coffee break, the participants will be divided into two groups and a brainstorming session will be carried out to create ideas/projects that will develop a strong ETF. Then it was planned that after lunch the different ideas/projects will be prioritised and four will be selected for further elaboration. Afterwards, each participant will chose a project to work further on, in this way four action groups will be formed. Finally, it was planned that the results will be presented at plenum for further discussion and approval.

The whole plenum session run perfectly well but it took more time than planned. It took some time to warm-up, but thereafter it was an overwhelming engagement from most of the participants. After some discussion, consensus was achieved on the strengths, weaknesses, opportunities, and threats of ETF. These are shown in Table 2.

During this stage of the workshop, it was a very good interchange of information, experiences and opinions among most of the participants. This was a very good exercise of total communication and focused dialogue, a very good learning experience for most of the participants and the facilitator. The facilitator register that 3-4 participants were rather passive and did not contribute very much to the discussions, it was like they were in another world. Probably this was due to the fact that they were not used to this collective and collaborative form of work; they felt alienated and they preferred to talk in small groups primarily about their tapestry art.

STRENGTHS	WEAKNESSES
Enthusiasm/optimism	Too few men
Good expertise/experience	Lack of resources
Craft tradition/good teachers	The craft demands long processes
Hard working	Bad selling expertise
Creative people	Lack of organisational experience
Openness	The weavers have several jobs
Physically strong	Their work is hard for the body
International oriented	Different expectations
Visionaries	Lack of identification
Most women	High average age
Support of DCO	
Some organisational skills	

OPPORTUNITIES	THREATS
Fund rising	Art critics
Internet/global communication	Museum and galleries
Changing markets	Lack of education (schools)
Exchanging experiences	Image
Cooperation with other artist groups	New Technology
	Lack of interest in the craft
Demand for creative people	Lack of understanding of the craft
Interest in tapestry art	No sale
Master classes	Change view of the concept of “time”
Exhibitions (big, small)	Academics do not focus on tapestry
Training/education/workshops	

Table 2. The SWOT matrix

The Idea Generating Sessions were conducted in two groups. It was a very slow process. The participants were tired and they were not used to brainstorm to produce ideas and be creative in groups. The processes were characterised as lacking fantasy and intuition to generate new ideas and projects. The groups had difficulty in “thinking the impossible”, most participants were merely reproducing their own objectives, the ones they had at the beginning of the workshop, and the participants were not very cooperative in building up new ideas based on the ideas of the other participants.

It is well-known that brainstorming is a paradigm conserving technique. Probably other techniques were needed but lack of time and the desire of several participants to form action groups did not permit more experimentation. The facilitator was also convinced that the participants were not ready to utilise more advanced techniques. One group was more productive than the other; this is probably due to the fact that the facilitator of this group was guiding the group placing questions about more experimental projects. The other group did not brainstorm; the participants generated projects that obviously have to be started.

The next step was the presentation in plenum of the generated ideas. The facilitator clustered all the ideas in a group of twelve projects. Now the prioritisation of the ideas has to be done. The facilitator suggested a voting procedure; this was accepted by the participants. It was agreed to select four projects and to appoint an action group (4-5 persons) for each project. The four projects to be selected were those with the highest ranking. Table 4 shows the list of the twelve projects generated in the workshops as well as their ranking. Each participant had three votes to be placed in the projects that they gave highest priorities. Table 3 also shows the result of the rankings.

Exhibitions (small tapestries, with other artists, post cards)	13
Fund rising	11
Internet (database, chat rooms, homepage, etc.)	10
Organisation design (ETF)	6
Catalogues (no-IT)	4
More visible (contact writers)	4
Education (schools, craft schools, adults)	3
Commissions/art agency for sale	3
Cooperation with sales/marketing people	2
More members (national/European)	1
Local historical events	0
Open door system	0

Table 3. Ideas/Projects generated

The four selected projects were: exhibitions, fund rising, internet and organisation design. The participants were free to choose witch group they wanted to work with under the restriction that each group should have at least four members and at most five. The director of DCO was assigned to support the second and third groups. Most of the participants selected their action group very fast, three were not fully engaged in the process and they selected a group more as an obligation than a whish, because it was never suggested the idea of belonging to no-group.

Obviously, due to the heterogeneity of the group there were 3-4 more experienced participants that felt that the workshop went too slowly and they preferred to formulate a strategy from the very beginning. Self-organisation and empowerment is a time-consuming process because together with the problem solving process you are also learning a new way to work with other people. The facilitator felt that this learning aspect was very important because each participant has to go back to her own country to organise workshop to be carried out at national levels.

Each group elected a facilitator or leader and a reporter and they continue working independently of each other about the contents and context of their projects during the rest of the day.

Sunday workshop
After breakfast each participant worked in their groups elaborating an action plan for the implementation of each project. These action plans were to be reported at the end of the morning before lunch. Many ideas were generated at the beginning of the group work. The participants continued to brainstorm, without the facilitator.

The exhibition group worked with the idea of organising a Triennial at European level to be shown in different countries in Europe. They also worked with the ideas of conducting smaller exhibitions at national level.

The fund rising group decided to work trying to make applications for economical support from the EC. Other kinds of sponsorships were also suggested from the public and business sector. A list of firms that could be potential supporters was also elaborated.

The Internet group had already specified the demands to be made to this technological support in a form of homepages, galleries, news page, and a space for fast communication and dialogue. Sponsorship from firms was also considered.

Finally, the organisation design group proposed to appoint a coordination/leadership group of six persons that will organise ETF as a project organisation. This organisation had already three projects going on: exhibition, fund rising, and Internet. As more members will be joining ETF other projects could be started. This coordination group was also going to give support to the organising of national tapestry forums at each European country.

All these ideas were approved at the last plenum meeting with acclamation. The last words of the facilitator were: TAPESTRY WEAVERS OF THE WORLD UNITE! The last talk was given by the leader of the Danish section. After lunch, a bus brought the participants to Copenhagen to see the tapestries at Christianborg.

5. Evaluation of the Workshop
Unfortunately, it was no time to conduct a systematic evaluation of the workshop by the participants. But at the closing session the participants expressed that the workshop has been a very fruitful event and that without the support of the facilitator it could not have been possible to achieve so many positive results. This was also expressed by some few participants that were very sceptical at the beginning of the workshop. This was more warmly formulated by the leader of the Danish section, obviously as organisers they were at the beginning very insecure about the results of the workshop. During lunch time, several participants expressed personally the same positive opinion to the facilitator. This feedback was very much appreciated by the facilitator. At the last meeting he said that his job was only to create a space for creative processes, the results of these processes are the work of the participants. The facilitator was completely convinced that for all the participants the workshop has been a positive and enriching experience with good social and learning processes.

Some days later, the director of DOC communicated to the facilitator that many participants has written to him giving a positive feedback and the thanks for a well-organised and fruitful workshop. He and the facilitator agreed that this workshop was history; it was the first solid step towards the development of a strong and active ETF.

Two weeks later the facilitator delivered a report of the event (Vidal, 2001). In the conclusion he remarked metaphorically that "facilitation, as weaving, is an art and a craft, the facilitator has some knowledge and expertise about learning processes, some methods for problem structuring and some creative techniques for idea generation. These are the elements of facilitation as a craft. His raw material is the people to be facilitated through a guided social process. The art resides in the way how the craft and the raw material are interwoven. The facilitator creates a stage for a performance and instructs interactively the actors to play their own roles as a part of wholeness: the overall problem solving process. The workshop is like a play in a theatre (the workshop took place in a theatre!) where the instructor (the facilitator), the actors and the audience (the participants) are part of a dynamic total performance".

Several modes of facilitation have been used in the workshop. At the beginning *a hierarchical mode* was used where the facilitator planned and directed the whole social process (SWOT analysis). Thereafter *a co-operative mode* of facilitation was used where there was an interaction processes with the group members at the workshops and at plenum. Finally, *an autonomous mode* of facilitation was used where the action groups work without the presence of the facilitator (Heron, 1999). In the workshop presented above the positive and satisfactory results are due to a sound organisation and the devoted motivation of most of the participants.

In the above mentioned report, the facilitator added some additional comments grounded on the ideas, thoughts and self-evaluation conducted by him some days after the workshop. Let us briefly discuss some of them.

During the workshop a strategy for ETF has been elaborated in an implicit way, this is called an *emergent strategy*. This can be seen by looking at the SWOT matrix where the four prioritized projects can be localised. The first three projects are taken from the opportunities being matched to the strengths of the organisation, while some of the weaknesses and threats are being taken account of in the fourth project, organisation design. Obviously new projects should be reflected strategically on the SWOT matrix, but it is important to be aware that this matrix will change as ETF develops, therefore the need to update the SWOT matrix every time a new workshop is going to be conducted. Tapestry weavers in all the countries members of ETF should try to elaborate a similar matrix for their national organisations.

In spite of their many differences, the participants had something in common: their worry about their craft. They are highly skilful weavers, very introverted, having devoted their life to their profession, living an isolated life relying very much on themselves. Their strengths are also their weaknesses. Their own isolation has been the basis for the situation of their profession now as it has been outlined previously. This was clearly

reflected during the workshop where the ladies preferred to talk about tapestry, under very cosy atmosphere, being nice to each other, but being difficult to motivate them about the need of getting organised, and to discuss conflicting areas and politics. In practice they prefer to socialise even though they are aware of the need to organise the tapestry weavers at national and European levels to survive and to secure the continuation of the profession for times to come.

There were several conflicting themes that were not discussed at all, but formulated as strong opinions by some of the participants and commented by silence by the majority of the other participants. Probably the general attitude of the majority of the participants was to give high priority to positive themes to be able to go a step forward in the design of ETF. No doubt the participants have learned the possibilities of creative problem solving in workshops and most of the returned home empowered ready to contribute to the development of ETF and their profession.

The conflicting areas that at sometime the ETF has to create a space to go through enriching debates are related to three themes: What is tapestry art? Is ETF going to be an elite club or it is going to be a mass organisation? Which are the requirements to become a member of ETF? Difficult questions but much can be learned from other visual art organisations, they had also been confronted with such dilemmas.

At the end of his report the facilitator wrote:
"The facilitator has experienced a very fascinating and fruitful process at the workshop. As a teacher he was proud of such good motivated participants. He used in this workshop the following qualifications:

- His experience and knowledge about the facilitation of creative problem solving processes, as a craft and as an art,
- His experience in working in a participative way with people towards self-organisation and empowerment,
- His sociological knowledge about the contradictions of visual arts in modern societies, and
- His experience as a visual artist organised in a small organisation"

6. The Art of Facilitation

Based on the above described case study as well as other conferences/workshops we have conducted; we have identified and defined a core set of conditions that are fundamental to the process of successful facilitating group work. The competency and skills of a facilitator are measured by his/her ability to create and maintain these core conditions. But the context in which the facilitation takes place is of fundamental importance.

The facilitator may adopt different roles; even switch roles during the intervention. Some of these roles can be: educator, guide, coach, and leader. The *educator* teaches by showing how things are done; the primary intention is to teach the participants how to learn for themselves using their own experience as a benchmark. The *guide* provides wise counsel and appropriate advice; the underlying intention here is to enable the participants

to become able to guide themselves and to welcome responsibility. The *coach* gives direct instruction to fine tune the performance of single individuals; the underlying intention is to set high standards and to enable the participants to become self managing. In the role of *leader*, the facilitator conducts by example, exemplifies the values of the organisation and the group, and is a model of good group practice; the intention is to promote the ideal group work environment where creativity and initiative thrive. The art of facilitation resides in choosing the appropriate role at any given time. The final test of a satisfactory facilitation process is when at the end of a workshop the facilitator disappears and the group continues working, the group has become autonomous.

After deciding which of these roles to choose, the facilitator must now decide how authority will be used. In principle there are three modes of authority and power: hierarchical, co-operative, and autonomous (Heron, 1999). In *hierarchical mode*, the facilitator is in absolute control and all the participants know and accept this. The facilitator makes all decisions and decides on the suitable course of action. In *co-operative mode* the facilitator and the group make decisions together. Essentially they make decisions as peers, everyone has an equal say, and responsibility is shared and owned by all participants. In *autonomous mode*, the facilitator gives authority and responsibility to the participants to make decisions, and agrees to abide by the decision the group makes. There is not "right mode". The operating mode is dictated by the situation and context. The skilful facilitator should be able to switch between all modes easily, depending on the needs of the situation. To guide effective and for all participants satisfying group work, the facilitator must be clear about his/her intention, choose the appropriate role, option and operating mode. Many of these intentions cannot always be planned in advanced, as an artist the facilitator many times has to improvise during the performance. This is the art of facilitation.

All group work means engaging in task, procedures and social processes. The task is the activity that the group engages in, such as designing a new organisation. To achieve this task the will employ some procedures, such as budgeting, planning, resource allocation, marketing and so on. The participants, who employ the procedures to achieve the task, engage in interactive social processes with each other. An understanding of these social processes is crucial to group work and the facilitation process. The skilful facilitator supports the group to identify and tackle these processes. Box 2 shows some behaviour that the facilitator can do to support social processes in group work (Schwarz, 1994).

In connection with the group work, there are two central social processes to be managed: the problem solving process and the group process. The first process is how the work group essays to solve the task of generating ideas and visions of how the problem could be solved. The second process is related to the manner how the individuals in the group work together, how they learn, how they communicate, their social and power relationships, and how they deal with conflicts, etc. Obviously, these two processes are interrelated in various degrees; the ideal group work is the one where these two processes support each other. We talk about *group dynamics*, when energy and synergetic effects are created in the group work as a result of well-balanced processes where the task is just as important as the group's trust and identity.

In praxis, there is a third social process: the facilitation process. The facilitator is the manager of the other two processes and his main mission is to create and support group dynamics. By focusing and guiding group members' communication and decision-making processes in a structured form, the facilitator can reduce the chances of engaging in faulty processes and harness the strengths of the group.

The facilitator is constantly thinking (reflection) and (actively) listening to the deliberations in the group work in order to make suitable interventions (decision making). Interventions mean communicating with the group, given information and knowledge, and encouraging the participants to think about important topics. The facilitator should possess the following competences: Able to create empathy, being specific and concrete, being genuine, able to create respect, effective listening and hearing, and able to communicate non- verbally.

It should now be clear that the facilitator could play a crucial role in working groups. By understanding the social processes, the facilitator can intervene to support the group to maintain a problem solving orientation to its work. Understanding is based on emphatic observation of both verbal and non-verbal behaviour. The facilitator has to observe participants' roles, the manner how the members of the group communicate, and the emotional life of the group. The facilitator should be able to make inferences about issues that are not being addressed directly; this can be achieved by being attentive to overt and symbolic content, and by considering what is not said in the group. The facilitator should be sensitive to group climate and aware of his or her own feelings and reactions with the purpose of adopting an impartial role.

Let us elaborate now more theoretically about the essence of the facilitation process as opposed to its existence or its accidental qualities or in other words the attributes by means of which facilitation as management can be qualified or identified. As we have seen, facilitation is a purposeful process carried out by one or several persons that goes forward between two interacting processes:

- First, the logical/rational process carried out by a purposeful group (the problem solving group) that wants to achieve some goals. This process has been denominated as the problem solving process; this is the scene of *objectivity*.
- Secondly, the intuitive/irrational process that refers to the chaotic social process provoked by each single participant, by the participants relations to each other, or by the participants relations to the facilitator of the purposeful group, these bring into the participants own subjectivity, intuition, fantasy and feelings. This process can be denominated as the problem destruction process; this is the scene of *subjectivity*.

Reflect on experience
Learning follows action. It occurs when experience is transformed through reflection into action strategies. Time for reflection is one of the most crucial conditions for effective group work
Recognise the needs of the participants
Social needs are the demand of the participants to be seen and heard as a human being and colleague, to be treated with respect, to give and receive support, as well as fulfil the task.
The facilitator has to support motivation, commitment and loyalty of the participants.
Create a clima of co-operation
The group has to be "greater than the sum of its parts". The facilitator should seek that the group develops to a collaborative team. Perceiving and responding to the group's dynamic is essential.
Welcome conflict and work towards resolution
Satisfying ways to tackle conflicts leads to greater commitment and can release a great deal of initiative and creativity. The facilitator should know who to deal with conflicts.
Value communication and dialogue
The facilitator should create a space where the participants share their thoughts, views and ideas, creating a culture where people can freely speak.
Share ownership of the vision
The facilitator should commit regular time to develop and enhance with the participants the vision of the workshop, to reflect upon, to review and to refine the vision collectively and co-operatively
Create trust
Trust is a reliance on truth. The facilitator creates trust by being truthful with your group and being sensitive to the feelings of individuals. Effective and empowered groups have a very high trust factor.
Work in the open
Decisions, values, and outcomes should be public knowledge. Good and bad news should be shared. Assess areas where interaction and collaboration can be increased. Plans can be changed according to development of the work, but do it openly.
Timing
This is the "sixth sense" of the facilitator. This is the ability of the performer who knows when to stop a process, and when to start a new.
Active listening
It is important to listen to the explicit meaning of the words and their tone and implicit meaning. The facilitator usually speaks less than anyone in the group.
Use appropriate tools
The facilitator should use approaches, for example creative, visual and mapping techniques, to co-ordinate members' thinking.

Box 2. Supporting social processes

The facilitation process will move in the grey zone between the scene of objectivity and the scene of subjectivity. The rational and the irrational processes are fighting one to another; the one wants to impose over the other. They are in conflict to each other, but they need each other because while the problem solving process seeks to achieve realistic

solutions, the irrational process will be the basis for the production of new ideas. Rationality needs chaos, and chaos needs rationality. Due to this contradiction, rationality versus chaos, we can stipulate that facilitation is a *dialectical process*.

Let us also emphasise that facilitation is a purposeful intervention in a social process, a designed process. Facilitation is not a necessity for the evolution of the problem solving process but it is designed to support the problem solving process. The facilitation evolves very dynamically in a grey zone essaying to construct a bridge between the traditional/conservative problem solving (business as usual) and the new/revolutionary power to change. The purpose of facilitation is to seek that the two above-mentioned processes do not destroy each other, but on the contrary support each other. In this way, traditional problem solving develops to creative problem solving. This dialectical conceptualisation of group creativity is a generalisation of a neuro-psychological model of the brain's function while thinking creatively; see further (Damasio, 1995).

The facilitation process can be managed in different manners, as there are several management styles. The facilitators are the managers of this process. Note that if the group can manage itself, there is no need of a facilitator. That is the group can learn to facilitate itself. As in any management process, it is a good idea to develop a strategy and design an action plan for the facilitation process and the whole problem solving process.

Management also involves three other central factors: *Power*, *communication,* and *learning*, (Gaventa and Cornwall, 2001). These aspects are always present in any facilitation process and should be reflected and articulated before, during and after the intervention. Facilitation becomes an art when a synergetic effect is achieved due to the constructive interaction between the rational and the irrational processes. The facilitator then becomes the director of a performance, where each participant plays a central role.

Summarising, we can state that the purpose of facilitation as management is not only to solve the task, but other additional goals could be:

- Each participant is a potential facilitator, therefore the importance of the learning dimension;
- Empowerment and self-organising, the participants learn to be more self-confident and learn to work creatively in a group (creativity is an act of liberation from the jail of our own routines); and
- Praxis, the facilitators should be able to learn from the experience therefore the importance of the evaluation of the processes and the systematisation of praxis, see further (Vidal, 2004b). In addition learning from failure is a good principle for any facilitator.

Recently, (Rough, 2002) has introduced the concept of *dynamic facilitation*. He asserts that rather than seeking to manage change, the facilitator should elicit, sustain, and enhance the self-organising dynamic of change. The dynamic facilitator works more completely with self-organising change than the traditional facilitator.

The dynamic facilitator supports people make progress in jumps, creative insights, and spontaneous changes of heart, in few words, the dynamic facilitator supports people to do transformational changes using some of the following principles: Assures choice-creating rather than decision-making, supports people attend to the problem, supports the group assume ownership of the problem, listen and reflects actively, supports the structuring of the conversations, protect people from all forms of judgement, go with the flow, supports divergent and convergent processes, supports group creativity, creates a positive atmosphere, and summarises progress.

7. Community Facilitation (Vidal, 2004a)

We have seen that he role of the facilitator is manifold and subtle, but nevertheless significant. During initial discussions, the facilitator attempts to draw out community members – to encourage full expression of ideas and opinions without imposing his agenda. If community statements are recorded, if he is the interviewer, he agrees on the parameters set by the community spokesperson and avoids asking leading questions. He acts as a resource providing information to the community about whatever decision making processes are relevant, making them aware of sources of power and points of influence.

Most importantly, the facilitator strives to bolster the self-confidence of the community by focusing on its competencies instead of how his expertise is going to compensate for what is lacking in the community. The person assisting the community is a "social inventor" rather than an "interventionist". After more than three decades of working as a practitioner, teacher and researcher in community facilitation, I have developed some general principles that I use to provide a theoretical framework to my work.

The focus of community facilitation is on organising and mobilising the competencies of the community members with the purpose of enabling them to act on their own behalf. It promotes the development of decision making skills along with the necessary changes of attitude that make the community better able to use those skills (learning). Community facilitation focuses on the process of change, on organising and mobilising the competencies of people, instead of the resolution of an issue or a task as an end in self.

Most professional consultants focus on the short-term resolution of specific problems or issues. Once the problem is corrected through the institution of a programme or successful political action, they have done their job. While specific programmes may result from the co-operative efforts of the facilitator and the community, they are not seeing as ends in themselves – only the means to an end. The end or goal is for people to gain a sense of their own collective strength. The experience of developing the power of the group and exercising that power is the ultimate product of the community facilitation process (empowerment) (Freire, 1981). The process itself is the "product". There may be a need for outside assistance, but it will be a collaborative rather than an expert-client relationship.

From the very beginning of the social facilitation process, the facilitator makes a formal commitment to be accountable to the community during each stage of the planning,

implementation, and evaluation processes. He agrees that it is the community (not himself, or employer, or decision makers) that will identify priorities, determine solutions, and establish time frames. This will be enacted through open-ended community spokespersons, and individual and community editing rights. Because the facilitator's commitment is spelled out so clearly, any attempt to manipulate the community or impose an agenda will be more easily recognised. He will lose credibility at a more profound level than would a consultant who never made such promises.

The accountability of the local leaders is established and maintained by the democratic selection of community "opinion leaders" and by community review an approval of the "opinion leaders" statements. These mechanisms prevent leaders from getting too far ahead of the general community or straying too far from the initial community position.

The process respects people and responsible decision makers by giving both parties the opportunity to present their views in a direct manner, without the distortion that often results from the use of an intermediary, a consultant. The community facilitation process is founded on a respect for the potential of people and decision makers that avoids the convenient stereotypes. Giving people the opportunity to communicate directly with decision makers conveys a strong belief in their ability to express themselves, to listen and understand the decision maker's point of view, to differentiate between the responsible decision maker and the manipulative decision maker, and to respond accordingly.

For decision makers, direct communication with their constituents humanises the sometimes abstract issues, provides a richer and more complex picture of people opinions, encourages accountability, and offers a mechanism for unencumbered expression of their viewpoints. It acknowledges their potential for responsible action, rather than assuming they will automatically greet people input with hostility. It would be naïve and presumptuous to imply that direct communication between people and decision makers will always lead to positive change. It does, however, make both parties less vulnerable to distorted interpretations and provide the best opportunity for mutual understanding (communication).

Encouraging a sense of collective power

Communities seeking outside support are usually all too aware of the unequal relationship between themselves and government decision makers. They realise that the decision maker's access to the elements of power – information, organisation, and resources – is much greater than their own. This knowledge frequently results in a debilitating sense of powerlessness and frustration, which inhibits effective action.

Without denying the inequalities of the situation, the community facilitation process helps communities to discover their own sources of power by giving them the experience of exercising control over the facilitation process itself. Exercising collective power within the community through a series of progressive stages, beginning with the process of transcending factions, established priorities, and selecting opinion leaders, builds the self-confidence necessary for the community eventually to act outside itself.

When the community moves to the stage of proposing solutions, it identifies and exerts control over the local elements of power. Previously unrecognised sources of information within the community are acknowledged and utilised. The community learns that its existing organisational structures – be they families, clans, or interest groups – can serve as the foundation for co-operative efforts. The community identifies local resources in the form of funds, individual skills, or materials, and determines how these can be applied to the problem at hand. The entire process provides a visible and unambiguous experience of collective power that transcends the inequalities or limitations of individual community members.

Methods and technologies, when sensitively used, enhance the feeling of collective power. The community has not only access to them, but more important, it controls the methods and technologies as well as the professionals associate with them. For example, the experience of learning to use and control information and communication technologies in practical problem solving empower the community's capability to deal with the extern world, a case study is presented below.

Building coalitions with other communities

A successful community organisation always begins at the local level, with the needs and problems an individual community has identified. Even when an issue has broad regional or national implications, the facilitator must proceed slowly and cautiously, allowing the initial community to develop a clear focus on the problems and potential solution and avoiding the temptation of overwhelming the community with his global insights. A significant amount of time must be spent in developing the high degree of mutual trust and respect, which underpins the community facilitation process. Any attempt by the facilitator to speed up the process or to introduce someone else's agenda will only result in a dilution of the community's energy and action plans.

After the community moves to the action stage, forming coalitions with other communities having similar interests and needs comes naturally and is encouraged – provided that such coalitions are strategically necessary in order to strengthen the community's impact on decision makers and are not merely ends in themselves. The use of methods and technologies are particularly helpful in the coalition-building stage. When shown to interested communities, the initial community achievement becomes the focus and point of departure for discussion. Each interested community is encouraged to add its views and opinions using these new approaches, thereby increasing the strength of the initial community's statements.

Alliances with decision makers can also work to the community's benefit and are an integral feature of the community facilitation process. Such alliances can take several forms. For example, if local decision makers are responsive but unable to satisfy the needs of the community or coalition, they can form an alliance with the community to influence state and national decision makers. If the local decision makers are un-cooperative, the state and national decision makers can be approached directly by the community, and together they can exert pressure on the local officials.

This approach fosters the development of community-initiated solutions, not just descriptions of problems or complaints, thus providing mature and constructive information to respond to. By generating its own solutions to problems, the community derives several benefits. It enhances its credibility in the eyes of decision makers who have neither the time nor the energy to come up with creative solutions to all of the problems they are confronted with. The chances of obtaining an acceptable plan of action are increased since many bad programmes result from lack of knowledge of the local situation, rather than malicious intent.

Finally, the community is better equipped to enter into process of negotiation and compromise on which governmental agencies are founded. By taking the time to consider a variety of solutions, community members learn to appreciate the complexities of problem solving that decision makers must deal with and thus are less likely to take an all-or-nothing stance. The community facilitation process acknowledges the many layers and forms of leadership existing in the community. While it strives to allow the opinion leaders to emerge, it does not ignore or circumvent the formal leaders, such as council members, mayors, etc. The formal leaders, whether or not they are also opinion leaders, have numerous levers of power that can be used for or against the facilitation process.

For this reason, the community facilitator must thoroughly explain the open-ended nature of the process to the formal leaders and obtain their approval and maybe their co-operation. Once they have understood the process, they are less likely to be threatened by the emergence of opinion leadership and will be less likely to interfere when events move beyond them. One can assume that they will try to control the process initially, but having agreed to the terms of community consensus, they can pursue their own agenda only at great expenses to their political status. Faced with a difference of opinion over community priorities, they will usually succumb to popular consensus and seek to maintain their power by taking credit for introducing the process to the community.

The role of professional experts

When professional experts are called into a community, the relationship is frequently one-sided. The expert defines the problem according to the narrow limits of his particular discipline and proposes solutions that utilise the tools he is familiar with. The engineer sees bridges to be built, the doctor diseases to be cured, the agricultural expert new crops to be introduced, and so on. If citizen input is sought, it is usually obtained on the expert’s terms and is of secondary importance to the expert’s opinion.

The community facilitation process recognises the important contribution that professional experts can make to the solution of community problems, but it allows for the contribution to be made within the framework of a collaborative relationship between community and expert. Instead of the expert driving the system, the community to meet its self-defined needs uses his expertise. For this reason, experts are not brought in until the community has had time to work out its own definition of the problem and to discuss possible solutions.

The community decides if it requires specialised assistance and how that assistance will be used. Discussions with the expert may result in a redefinition of problems and may generate additional solutions, but these adjustments will be made within the larger context provided by the community facilitation process – looking at the community as a whole instead of viewing it as a series of discrete problems.

A collaborative relationship between community and expert requires alterations in typical patterns of behaviour. The expert must spend more time in a community and be willing to open himself up to the give and take of a dialogue between equals. He does not need to denigrate his expertise in order to obtain acceptance by the community. Nor is he required to forfeit the attainment of professional objectives. For example, a participatory action researcher can still have his research published, but he alters the way in which the research is conducted. Community members have to assume a more active role instead of relying on the expert to produce a magical cure. They must acknowledge and articulate their own competencies and give equal recognition to the expert's specialised knowledge. The facilitator's responsibility is to provide a forum that will allow such an exchange to take place.

The flexible nature of the community facilitation approach lends itself to a variety of applications – as an alternative to the public hearing process, participatory research, organisational development, conflict resolution, urban-rural development, and development communication. While this approach can be learned, it is not an ideology or technique that can be memorised and then applied universally in a series of rigidly defined steps. It is not a formula. It is a process, in time, to be used in an open-ended and responsive manner according to the requirements of varying circumstances. Adaptation and evolution are inherent to the community facilitation approach and remain key determinants of its success.

8. Final Remarks

Group work to deal with problematic situations has become a central activity in modern societies. We have seen that group work is not only a problem solving process but also interrelated to communication, learning and empowerment processes. These processes can be suitable conducted by a facilitation process. Effective and rewarding group work needs facilitation. Especially in situations where the participants do not know each other or are not very experienced in group working.

To become a good facilitator is like in sport or art; you have to practice and to train your self. You will not become a good sportsman or artist just by reading books. If you are in a meeting at your local club, at your community, at work or any other organisation you belong to, try to convince people to organise those meetings as facilitated conferences and workshops.

In my teaching activities related to creativity, problem solving, and systems thinking, the students have to be a member of a group to follow the course. By the end of the course each student should be able to work in groups, to facilitate groups and to use some tools and methods. The results obtained in these courses are overwhelming positive for all the

students and myself, especially taking into consideration that for most of them it is the first time they are working in groups.

Facilitating communities is also an important activity in the poor regions of the World (Freire, 1972). The facilitation expertise can be a suitable support to the already going work on participative action research (Whyte, 1991).

Let us end this chapter by continuing with the story of ETF. The ETF steering committee has now been working together for four years and they are about to realise many of the goals outlined in the workshop. The structure of the ETF has been set up, a pan-European forum for professional tapestry artists. This organisation has been set up by tapestry artists for tapestry artists to encourage the continuing development of the art of tapestry weaving in Europe. ETF is becoming strong and has many members.

In 2005-2006 ETF presented, ARTAPESTRY, a juried international exhibition of contemporary tapestries from Europe to be shown in Ålborg, Denmark, and Krefeld, Germany, (Cronenberg, 2005). This is ETF's first large exhibition. Next, the website with the showcase gallery TAPESTRY MASTERS will be improved. The first full meeting of EFT members will be held in Denmark in the summer of 2006: Plans are also underway to give ETF a home base where seminars, workshops and artist-in residence programmes can be held.

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CHAPTER 4

GROUP WORK

It takes time for a group to learn to work
and take decisions in a democratic way.

1. Introduction

Groups include families, classrooms, workplaces, back-fence get-togethers, bar scenes, gamers, net-chatters, legislatures, sports, etc., they are everywhere. We spend much of our lives in groups. There are many useful perspectives on the psychology and sociology of groups, and many experiences that an individual or group can go through something about groups, but usually it is on a level we do not think about, and sometimes we are just repeating habitual patterns (withdrawal from conflict, no participate in meetings, assigning blame to a scapegoat, etc.). We can learn from having some conscious experience with groups. Anyone can learn to pay attention to the dynamics in a group to help us understand how we behave in the group and possibly what we can do to help ourselves and the group itself work better, and to help us understand other groups. The first skills involved are usually listening and reflecting.

This chapter looks at the basics of group work, tries to understand it, and suggests ways to achieve rewarding group work in connection with problem solving in workshops and conferences. This chapter also examines the group process and how it can best be facilitated. The key is that the group should be viewed as an important resource whose maintenance must be managed just like any other resource and the final objective is that this management should be undertaken by the group itself so that it forms a normal part of the group's activities.

In Section 2, a first introduction to group work and an outline of a theory on individual's personality will be outlined. Then, in Section 3 a real-life case study of creative group work will be presented. This was a workshop facilitated by the author for eight persons creating international projects within the theme: young entrepreneurship.

A classical five stage model for group development and the concept of communities of practice will be presented in Section 4. Dealing with conflicts in group work is the theme of Section 5. An essential tool in group work is dialogue as a fundamental communication process. The facilitation of group work enhancing dialogue processes is the topic of Section 6.

The facilitation of focus group work is discussed in Section 7. This kind of group work involves organised discussion with a selected group of individuals with the purpose of obtaining perspectives about the same topic. Finally, the last section presents the final remarks.

2. Groups

A group of people working in the same room, or even on a common project, does not necessarily invoke the group process. If the group is facilitated in a totally autocratic manner, there may be little opportunity for interaction relating to the work; if there is fractioning within the group, the process may never evolve. In simple terms, the group process leads to a spirit of communication, cooperation, coordination and commonly understood procedures. If this is present within a group of people, then their performance will be enhanced by their mutual support (both practical and social.

Groups are particularly good at combining talents and providing innovative solutions to possible unfamiliar problems; in cases where there is no well established approach/procedure, the wider skill and knowledge set of the group has a distinct advantage over that of the individual. An ideal group can be seen as a self managing unit. The range of skills provided by its members and the self monitoring which each group performs makes it a reasonably safe recipient for delegated responsibility. Even if a problem could be decided by a single person, there are two main benefits in involving the people who will carry out the decision:

- Firstly, the motivational aspect of participating in the decision will clearly enhance its implementation, and
- Secondly, there may well be factors which the implementer understands better than the single person who could supposedly have decided alone.

From the individual's point of view, there is the added incentive that through belonging to a group each can participate in achievements well beyond his/her own individual potential. Less idealistically, the group provides an environment where the individual's self-perceived level of responsibility and authority is enhanced, in an environment where accountability is shared: thus providing a perfect motivator through enhanced self-esteem coupled with low stress.

When people work in groups, there are two quite separate issues involved:

- The first is the *task* and the problems involved in getting the job done. Frequently this is the only issue which the group considers, and
- The second is the *process* of the group work itself: the mechanisms by which the group acts as a unit.

However, without due attention to this process the value of the group work can be diminished or even destroyed. With an explicit facilitation of the process, it can enhance the worth of the group to be many times the sum of the worth of its individuals. It is this *synergy* which makes group work attractive in organisations and communities despite the possible problems (and time spent) in group formation.

Working with a group on a problem-solving project can be a pleasure and a rewarding experience, especially if synergetic effects have been created. Working with a group can also be a frustrating and a time wasting experience. Experience shows that the product of a well functioning group work has better odds for success than does the product of single individuals. In modern life most individuals spent time working in cooperation and collaboration with others. Group work has demonstrated to be generally superior to individual work due to five main reasons shown in Box 1.

1. Members can offer complementary and supplementary information, experiences, perspectives, and opinions, making the pooled knowledge greater than the sum of its parts.
2. For many persons, the simple presence of others even without interaction motivates them on to think harder and more creatively.
3. Within groups, the most confident, conscientious, and creative members tend to prevail.
4. Errors made by the group are more likely to be detected by a member than individual errors are to be detected by an individual.
5. Several individuals involved with the problem are better that just only one, in case of a person leaving the community.
6. Group dynamics and synergy effects can be achieved.

Box 1. Advantages of group work

Good group work demands a balance between building a sense of solidarity and responsibility among members during the problem solving process, and getting the task accomplished. This demands from the members of the group not only intelligence and creativity but also social skills. *People are not born with social skills; they have to learn them.* The best way to learn them, obviously, is by working in groups (learning by doing).

Aside from the formal roles of facilitator, coordinator and recorder, most groups need and find people to play a number of other group maintenance roles essential to the health and the progress of the group, some of the helpful roles for the group are: encouragers, feeling expressers, harmonisers, group observer and commentator, compromisers, standard setter, and gatekeepers and expediter.

Some group members may select, consciously or not, to play roles that are unhelpful to the group. Some of these are: freeloaders, withdrawers, aggressors, dominators, help seeker, self-confessors, blockers, and status and recognition seekers. The common aspect among these roles is a conflict between personal goals and group interest.

In addition to group maintenance roles, which are essential in keeping the group unified and efficient, every member, will have to play several task roles, some of these are: initiators, information seekers, information givers, opinion seekers, opinion givers, clarifiers, elaborators, innovators, orienters, evaluators, energisers and summarisers.

Personality Types

A group is composed of individuals, persons with their own personality dealing with a problem. An individual's personality affects how a person sees problematic situations and problems and goes about dealing with them. If a group consists mainly of people with a single personality type, problematic situations will be seen in only one way providing fertile ground for solving wrong problems. Therefore it is very important to have different personality types in the group to challenge one another's perspectives. Moreover, some personality types are better for adopting the different roles we have mentioned above.

Jung (1921) developed the theory that each individual had a psychological type. He argued that there were two basic kinds of functions which humans used in their lives: How we take in information and how we make decisions. He believed that within these two categories, there were two opposite ways of functioning. We can *take information* via: our senses or our intuition. We can *make decisions* based on: objective logic or subjective feelings. We all use these four functions in our lives, but it is possible to identify an order of preference for these functions within individuals. The function, which someone uses most often, is *the dominant function*; the dominant function is supported by an auxiliary function, tertiary function, and inferior function. Jung asserted that individuals either extraverted or introverted (*flow of energy*) their dominant function. The dominant function is so important, that it overshadows all the other functions in determining personality type. Later, a fourth dimension has been added, which is concerned with how we deal with the external world on a *day-to-day basis*: Judging or perceiving. The combination of our four preferences defines our personality type, see Table 1. Let us elaborate a little more about these four preferences (Goldberg, 1983).

The *Sensing or Intuition* preference refers to how we obtain information. We all need data on which to found our decisions. We obtain data through our five senses. There are two distinct ways of perceiving the data we gather. The sensing preference absorbs data in a literal and concrete fashion. The intuitive preference generates abstract possibilities from information that is gathered. We all use these two preferences, but to different degrees of effectiveness and with different levels of comfort. We are sensing when we: taste food; notice a stoplight that changes; memorise a poem; follows stages in a plan; etc. We are intuitive when we: come up with a new idea; evaluate the consequences of current decisions; register underlying meaning in what people say or do; see the big picture; etc.

The *Thinking or Feeling* preference refers to how we make decisions. When we make a decision that is based on logic and reason, they are operating in thinking mode. When we make a decision founded in our value system, or what be consider being right, we are operating in feeling mode. We are making decisions in the thinking mode when we: research a product via consumer reports and select the best one; do the right thing, whether or not we like it; always make a plan, etc. We are making decisions in the feeling mode when we: buy something because we like it; avoid upsetting people; say no to a job because we do not like the work environment; move to be close to someone we care about; etc.

When we talk about *Extraversion or Introversion* preferences, we are separating the two worlds in which all us live. There is a world inside us, and a world outside of our self. When we are dealing with the outside world we are extroverting. When we are inside our own minds, we are introverting. We are extroverting when we: talk to other people; listen to what someone is saying; cook dinner; work on a car; etc. We are introverting when we: read a book; think about what we want to do or say; are conscious of how we feel; think about a problem so that we understand it; etc.

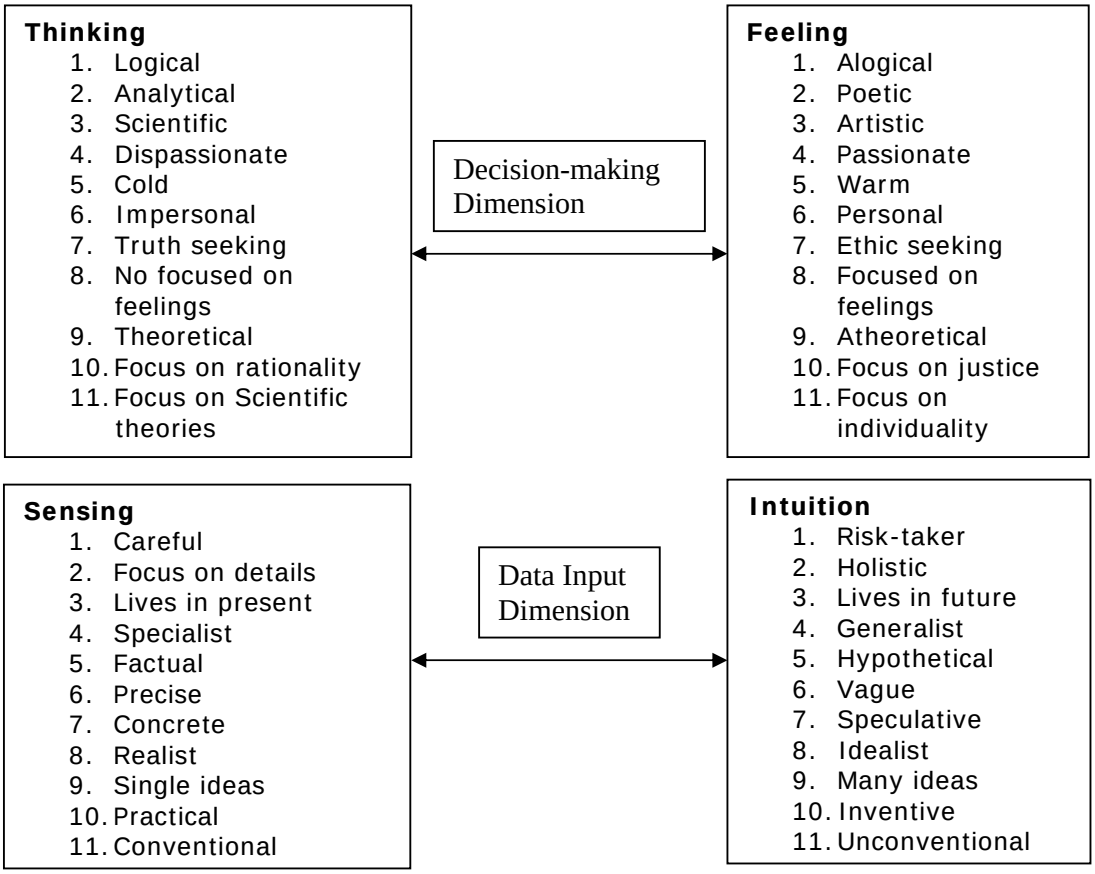

Table 1. The Jungian Dimensions (Mitroff, 1998)

Judging or Perceiving preferences refer to our attitude towards the external world, and how we live our lives on a day-to-day basis. Individuals with the judging preference want things to be neat, orderly and established. People with the perceiving preference want things to be flexible and spontaneous. Judgers want things settled, perceivers want things open-ended.

Combining the various preferences together results in sixteen different personality types, this means that in both theory and in reality, there are at least sixteen different ways of looking at and analysing any problematic situation. From a practical viewpoint, sixteen views are difficult to handle, it is easier to operate with those four more common personality types: Sensing-Thinking, Intuitive-Thinking, Intuitive-Feeling, and Sensing-Feeling, see Box 2.

Sensing-Thinking focus on technical problems, precisely defined in terms of conventional knowledge and technology. They are reductionists; decomposition is their main method. They prefer symmetry, order and control.

Intuitive-Thinking also defines problems in technical terms, but focusing in future technology and take broad systems as a whole into consideration, they use a holistic and systemic approach. They think outside the box, breaking symmetries.

Intuitive-Feeling also thinks in terms of large whole systems; but instead of technology and knowledge, they focus on people and humanity. They are concerned with broad issues related to equity, fairness, ethics and justice. They express a disdain to traditional structures and habits that cramp and inhibit feeling.

Sensing-Feeling also are reductionists, except that their units are human, not technical. They believe that only individuals and families matter.

Box 2. More common personality types

If a group has enough diversity in its members, then it can generally produce at least four different definitions of a problem, reflecting the four basic personality types. If a group is not able to examine a problematic situation, at least from these four perspectives, then this inability is one of its most basic problems.

Another important aspect in group work is related to how the individuals communicate to each other. We need to recognise two ways of communication: transactional and transformational. Transactional communication is a plain transmission of information between sender and receiver. Transformational communication, on the other hand, is a heart-to-heart experience where individuals and ideas evolve together. Let us elaborate a little more on these concepts especially in what concerns problem solving and group work.

Transactional communication is focusing in the content: *What* is said? Information is transmitted: concepts and information are exchanged, modified or evaluated. People remain the same although they improve their skills or have new understandings. Individuals remain detached from the problem they talk about and the people they talk with. The process can be programmed step by step, as with an agenda. The results (knowledge, skills, decisions, etc.) are measurable. Associated concepts are: discussion, input, training, team, compromise, agreement, and decision-making.

Transformational communication is focusing in the process: *How* is said? New information is created: concepts, information, and individuals all evolve together. People are moved by the experience, and become different in a meaningful way. Individuals are fully involved, building trust and a collectivistic sense. The process is highly dynamic: people go with the flow. Measurable results are often greater than transactional results. Associated concepts are: dialogue, involvement, learning, community, negotiation, consensus, and choice-creating (group dynamics).

Most group work is aimed at *decision-making (convergent thinking)* rather than *choice-creating (divergent thinking)*. In decision-making work style agendas are prepared, goals are defined, and stepwise methods keep people on track. However, by structuring this form of communication, thinking is narrowed, the potentialities of people are diminished and the possibilities for change limited. Choice-creating is when people confront an issue they care about seriously in a manner that allows them to be: authentic, open-minded, openhearted, learning, cooperative, engaged, respectful, creative, and efficient.

3. Case Study: Young Entrepreneurship

LEADER+ West Zealand, Denmark, has taken the initiative to take the first steps towards transnational cooperation among some leader areas in North Europe. LEADER+ areas from Finland, Ireland, Scotland, Sweden and Denmark have shown special interest about cooperation around the theme: "young entrepreneurship". Therefore, LEADER+ West Zealand, has planned, organised and carried out a workshop in cooperation with the author of this book, the facilitator.

The workshop took place at The Kalundborg Production School, Svebølle, Denmark, during the time period December the 8th to December the 9th, 2004. A group of eight persons participated at the workshop representing LEADER+ areas from: Finland, Scotland, Sweden and Denmark. Most of these persons did not know each other in advance, but they have experience in working in groups from their jobs in their respective countries.

The main objectives of this workshop were:

- To get an overview of the different local projects of the represented LEADER+ areas that can give basis for transnational cooperation around the theme: "young entrepreneurship",
- To select some concrete projects/ideas related to the theme of the workshop for further elaboration, and
- To illustrate in practice how to organise and facilitate such an event as a participative and creative group work composed of two steps, first a *divergent process* and thereafter a *convergent process*.

The planning of the workshop

The workshop was planned to start at December the 8th, 2004. The participants will arrive to The Kalundborg Production School, Svebølle, at 4.00 pm. The director of LEADER+ and the facilitator agreed in the program described below as well as the different topics to be discussed.

The workshop will start with a presentation of and sightseeing at the production school. At 6.30 pm a dinner will be served at Bromølle Kro, a nearby Inn. At this Inn the participants and the facilitator will stay overnight.

At December the 9th, the workshop will start at 9.00 am. First each representative of LEADER+ areas will present their local projects and ideas for transnational cooperation projects.

After lunchtime, served at the production school, the participants will be divided in two working groups. A facilitator will support each group. The main objective of the group work will be first to produce as many suggestions for projects as possible using a brainstorming technique. This is the so-called divergent process. This process will take around one hour. After the divergent process, all participants will meet at a plenum and each group will present their ideas about transnational projects. Then, it will be a coffee break.

Thereafter, it was planned that the groups will meet again to select at least one at most three projects for further elaboration and possible implementation. This is the so-called convergent process.

Finally at 3.30 pm, at plenum, the final projects will be presented and the most promising selected, using a votation procedure if needed. An action plan will be negotiated and the future work and responsibilities will be agreed upon.

After a short evaluation, at 4.00 pm the workshop will be closed. The facilitator will collect all the produced ideas and write a report about the workshop and the achieved results.

The development workshop
First day
The workshop started as planned with a presentation of The Kalundborg Production School by the director of the school. This school is well known in Denmark because it has worked for years to provide a varied learning space and fundamentals for young disadvantaged youngsters, not in the form of education but in supporting the young people's entrepreneurship potentialities in product development. The main principles of the school are: *learning by doing and doing marketable products*. More about the school and its entrepreneurial profile can be found in the school's website at:
www.k-p-s.dk

The director also informed that related to the school, there is the Product Development Club. This is an informal, local forum for innovators that aims to: discuss and develop new ideas, develop prototypes, and find partners. The school is a natural-born member of the Club. More information about the Club can be seen in its website:
www.produkt-klub.dk

Finally, the director of the school presented EXPO-DO, a hall located at the school that is available for exhibition of products. This hall is the physical home of the product development club. More about EXPO-DO can be seen by visiting its website:
www.expo-do.dk

At 7.00 pm, we were having a wonderful dinner at Bromølle Kro. Around four hours were expended around a table in a very cosy atmosphere, socialising, interchanging opinions and experiences. This was a real warming-up and communication process that was needed before the serious work to be done the next day. At this initial stage of the group work, in an unconscious way, roles were assigned, status relations were established, shared values were discovered and conflicts were identified. The facilitator was the central person at the table; he

was already doing his job, conducting the group through the "forming" and "storming" steps (in the next section these concepts will be defined more precisely) of group work.

Second day
As planned, we started at 9.00 am. Each LEADER+ area presented their work and activities with youngsters.

Coastland LEADER+
Coastland is located in South Findland, stretches from Bräviken in the north to Timmernabben in the south, comprising every parish district that has contact with the Baltic Sea. Coastland support projects in the following areas: Education, environmental issues, cultural promotion, local development, women's issues, activities for young people, tourist promotion and other local enterprise. Special focus is given to projects for youngsters within the areas of: entrepreneurship, nature and cultural resources, food production, etc. In this program there is special attention to create broad frameworks for a better interaction between schools and youngsters. See further Coastland website: www.kustlandet.com

Suupohja LEADER+
The sub-region Suupohja is located in Western Finland in the province (region) called South Ostrobothnia. This sub-region is composed of five local municipalities: Tuova, Teuva, Karijoki, Kaukajoki, and Isojoki.

This program supports projects that enhance:

- The use of know-how and technologies to increase competitivity, and
- The best use of natural and cultural resources.

For young people emphasis is given to create learning spaces based on motivation, entrepreneurship and a creation of a culture of self-reliance. Further information can be found in the following website:
http://leader.suupohja.net/english

Lomond & Rural Stirling LEADER+
This rural area is located in the centre of Scotland, west and north of Stirling. This program seeks to enhance the quality of life in this rural area by supporting projects, which priorities are to connect businesses, communities, and the public sector agencies, especially through projects developing new technology and connecting people to the natural assets of their area.

A working party has been recently created in order to identify and develop transnational cooperation projects. There is a special interest to cooperate with areas working towards young people and youth entrepreneurship, and also with other National Park areas, tourist areas developing their local produce outlets, local festivals, etc.

Several partners within the area are involved in projects for young people. A Scottish Charity, "Callander Youth Project", aims to increase the quality of life of the young people (15 to 25

years old) of the rural area providing advice and support to young people projects, recreational facilities, training, etc. See further the following website www.cyp.org.uk

The National Park is currently studying the feasibility of an apprenticeship support programme to encourage employers within the National Park to take on more apprentices (in the electrical, plumbing, building trades). A local high school within the rural area planned to set up a project to involve businesses with the school to develop opportunities for young people to get work experiences and practice. Transnational cooperation projects towards young people are something the Lomond and Rural Stirling LEADER+ and its local partners really wish to develop further in the next period time. Further information about the whole program can be found in the following website: www.lrsleaderplus.org.uk

LEADER+ Astrid Lindgrens Hembygd
This program covers a rural area located in Småland, Sweden, and it includes the following municipalities: Eksjö, Hultsfred, Vimmerby and Krisdala in Oskarhamns municipality. The underlying principle of this program is to give children and youngsters a good environment to grow up in. The key concept is age integration and the improvement of the rural living environment. Projects should encourage collaboration between schools and business, untraditional vocational studies, transfer of handicrafts from older people to the youngsters, etc.

Several projects in the following areas have been carried out:

- Creativity and Entrepreneurship,
- Learning spaces: open spaces, meeting places and working places, and
- Summer camps with different themes and activities.

See further this program's website:
www.astridlindgrenshembygd.se

A very interesting activity is the KUL project. KUL is an acronym for kultur (culture), ungdom (youth) and landsbygd (rural areas). KUL uses culture and the media as a motivation factor and a way to introduce the youngsters' into creative and entrepreneurial activities. Here a representative of KUL presented Rock City in Hultsfred: a creative meeting place for music and entertainment industry. A project was started to make a plan to get in contact with the youngsters outside the community, and give them a chance to get back to the community. Another project is to start a "Navigation Centre"- a place were youngsters can find inspiration and guidance, this is a meeting place were the young people can get information about study possibilities, work, travelling, etc. See further the following website:
www.rockcity.se

Divergent process
After the presentations of the LEADER+ projects the participants were divided into two groups and a facilitator for each group was appointed. The group task was to suggest themes for transnational collaboration projects using a brainstorming process.

The groups went through this creative process for around one hour. Thereafter, the obtained results were presented in a plenum. The results of each divergent process are described in Box 3 and 4.

At plenum, the facilitator classified the different proposals in three groups:
(P)……. International projects
(T)……. Teaching experiences
(S)……. Sharing resources

Convergent process
It was agreed to converge by selecting one project of each group. One participant suggested converging in plenum instead of going to work in groups again as planned. This change was unanimously accepted.

After some short discussions, the participants agreed in selecting the following projects for further development (no need of votation):

1. International project based on the experiences of Sweden organising "meeting camps" (a six days transnational happening in Sweden) (P),
2. To identify some schools in the different countries (fiery souls among teachers) to support the establishment of entrepreneurial thinking (T), and
3. To establish a web-based forum for exchanging and sharing resources, experiences, tools, techniques, information, good examples, stories, pictures, etc. (S).

The following projects were suggested:

- Booklet reporting results/achievements about entrepreneurship (S)
- International joint projects, for example each area dealing with a product (P)
- Teacher exchanges using two models (T):
  - Entrepreneurial camps during a week, and
  - Learning experiences for individuals/groups
- Join work involving several schools producing products, activities or/and processes (P)
- Presentation of good practices in the web using SMART GROUPS (S)
- Tool-box sharing creative/innovative tools and methods (S)
- New organisation forms for team-working
- Divide a project in tasks, each country focuses in a task (P)
- Support local industries (P)
- Support primary schools (T)
- International exchange week (P)

Box 3. Report of Group 1

The following projects were suggested:

- Booklet: the good story (S)
- Meeting place for creative youngsters, maybe organised as a tour (P)
- Exchange of experiences/developments between partners (S)
- Course on "The art of facilitation" (T)
- Voluntary work (European linking, shelter village) (P)
- Opening the schools /creativity, innovation, entrepreneurship) (P)
- Creative meeting points (P).

Box 4. Report of Group 2

Action plan

It was decided to work further with these three proposals looking for possible implementation. Three subgroups were established for further elaboration of the projects and action:

1. LEADER+ Astrid Lindgrens Hembygd and LEADER+ West Zealand collaborate to implement the first project (entrepreneurship camps),
2. Coastland LEADER+ and LEADER+ West Zealand collaborate to investigate on the possibility of implementing the second project (supporting schools), and
3. The Kalundborg Production School takes the initiative to establish a web-based forum.

Conclusions

This event was a very nice experience in the planning, development and implementation of a creative group work development. The facilitator had an "easy" and pleasant task due to the enormous engagement and motivation of the persons participating in this workshop. It was of vital importance that the group and the facilitator met together one day before the workshop day, the performing event. There was good time to learn to know each other and the dinner and the post dinner chat was a very fruitful warm-up process. This meant that the workshop the next day was a very productive and creative event. Having established roles, personalities, and norms, the group's time attention, focus, and energy was increasingly directed at the group task and decreasingly concerned with group maintenance, procedural questions, or personalities. The creative environment provided by the Production School was also optimal for such a workshop. The facilitator conducted several synergetic processes. The facilitator was also convinced that the participants of this workshop have learn something about organising and facilitating creative processes so that they might use these experiences in their future work and meetings.

Two weeks after the workshop, project 3 from the action plan has already been implemented. A web-based network has already been established using SMART GROUP, a web based group information system managed by The Kalundborg Production School.

One month after the workshop, sub-group 1 presented a proposition for a project: The Entrepreneurship Camp 2005. The entrepreneurship camp aims to give young people the

possibility to develop their creativity and entrepreneurship spirit. It is designed for young people in the age 14-19. This project was successfully implemented in summer 2005 and the camp was organised by LEADER+ Astrid Lindgrens Hembygd.

In addition, the created network is planning new cooperation possibilities and new ideas and projects related to young entrepreneurship in the near future.

4. Five Stages of Group Work Development

The following five stage model of group work development was first published by (Tuckman and Jensen, 1977). This model is an extension of the four stage model presented in (Tuckman, 1965).

Stage 1: Forming

In this stage, personal relations are characterized by dependence. Group members rely on safe, patterned behaviour and look to the facilitator for guidance and direction. Group members have a desire for acceptance by the group and a need to be known that the group is safe. They set about gathering impressions and data about the similarities and differences among them and forming preferences for future sub grouping. Rules of behaviour seem to be to keep things simple and to avoid controversy. Serious topics and feelings are avoided.

The major task functions also concern orientation. Members attempt to become oriented to the tasks as well as to one another. Discussion centres on defining the scope of the task, how to approach it, and similar concerns. To grow from this stage to the next, each member must relinquish the comfort of non-threatening topics and risk the possibility of conflict. Box 5 shows some ways to begin workshops.

1. Go around the room and have each member state what he/she wishes from the upcoming workshop,
2. As facilitator, share your thoughts about where the group is at, how it is progressing, ways the group might be getting stuck, etc.,
3. Ask members if they have any unresolved feelings or thoughts about the previous session: "Did anyone have any after thoughts or leftover feelings about last session?"
4. Ask: "How is each of you feeling about being here today?"
5. Have each member complete the sentence, "Today I'd like to get actively involved by",
6. Announce: "As a way of beginning, let us have a brief go-around and have each of you say what you'd most like to be able to say by the end of this session"
7. Inquire of each member: "what were you thinking and feeling before coming to the group today?" or "Whom (or what) are you most aware of in this room right now, and why?"

Box 5. Some ways to start a workshop

Stage 2: Storming
The next stage is characterized by competition and conflict in the personal-relations dimension an organization in the task-functions dimension. As the group members attempt to organize for the task, conflict inevitably results in their personal relations. Individuals have to bend and mould their feelings, ideas, attitudes, and beliefs to suit the group organization. Because of "fear of exposure" or "fear of failure," there will be an increased desire for structural clarification and commitment. Although conflicts may or may not surface as group issues, they do exist. Questions will arise about who is going to be responsible for what, what the rules are, what the reward system is, and what criteria for evaluation are. These reflect conflicts over leadership, structure, power, and authority. There may be wide swings in members' behaviour based on emerging issues of competition and hostilities. Because of the discomfort generated during this stage, some members may remain completely silent while others attempt to dominate.

In order to progress to the next stage, group members must move from a "testing and proving" mentality to a problem-solving mentality. The most important trait in helping groups to move on to the next stage seems to be the ability to listen.

Stage 3: Norming
In this stage, interpersonal relations are characterized by cohesion. Group members are engaged in active acknowledgment of all members' contributions, community building and maintenance, and solving of group issues. Members are willing to change their preconceived ideas or opinions on the basis of facts presented by other members, and they actively ask questions of one another. Leadership is shared, and cliques dissolve. When members begin to know-and identify with-one another, the level of trust in their personal relations contributes to the development of group cohesion. It is during this stage of development (assuming the group gets this far) that people begin to experience a sense of group belonging and a feeling of relief as a result of resolving interpersonal conflicts.

The major task function of stage three is the data flow between group members: They share feelings and ideas, solicit and give feedback to one another, and explore actions related to the task. Creativity is high. If this stage of data flow and cohesion is attained by the group members, their interactions are characterized by openness and sharing of information on both a personal and task level. They feel good about being part of an effective group.

The major drawback of the norming stage is that members may begin to fear the inevitable future break-up of the group; they may resist change of any sort.

Stage 4: Performing
This stage is not reached by all groups. If group members are able to evolve to stage four, their capacity, range, and depth of personal relations expand to true interdependence. In this stage, people can work independently, in subgroups, or as a total unit with equal facility. Their roles and authorities dynamically adjust to the changing needs of the group and individuals. Stage four is marked by interdependence in personal relations and problem solving in the realm of task functions. By now, the group should be most productive. Individual members have become self-assuring, and the need for group approval is past. Members are both highly task oriented and highly people oriented. There is unity: group

identity is complete, group morale is high, and group loyalty is intense. The task function becomes genuine problem solving, leading toward optimal solutions and optimum group development. There is support for experimentation in solving problems and an emphasis on achievement. The overall goal is productivity through problem solving and work.

Stage 5: Adjourning
This final stage involves the termination of task behaviours and disengagement from relationships. A planned conclusion usually includes recognition for participation and achievement and an opportunity for members to say personal goodbyes. Concluding a group can create some apprehension - in effect, a minor crisis. The termination of the group is a regressive movement from giving up control to giving up inclusion in the group. The most effective interventions in this stage are those that facilitate task termination and the disengagement process. Box 6 shows some recommendations to end workshops.

1. Ask members to tell the group briefly what they learned about themselves through their relationships with other members in that particular session.
2. Ask, "What was it like for you to be in this group?"
3. Instruct, "Let us do a quick go-around and have everyone say a few words on how the group is progressing so far and make any suggestions for change."
4. Indicate, "Before we close, I'd like to share with you some of my reactions and observations of this workshop."
5. Ask if anybody has any feedback that they would like to give another member or the facilitator.
6. Determine if here are any issues that members would like to return to or explore in the next workshop.

Box 6. Some ways to end a workshop

These five phases are not to be moved through as rapidly as possible. Problems in performing may often be traced back to insufficient storming and norming, for instance. Group discussion, while storming out some controversies, may return to issues involved in forming, redistributing responsibilities, rediscovering common values, and modifying procedures. Analogously, a group having difficulty in performing may either implicitly or explicitly, need to redefine some norms. These phases do not need to be followed linearly, these phases are considerable more fluid and interactive, as well as less deterministic, with groups moving freely between stages. Groups need to develop through different stages if they are to become high-performing teams. Most groups never reach such levels because the task does not require them to be revealing and open. But messes often require highly innovative solutions demanding a high-performance from the group.

If the members of the group are highly experienced in group work and are highly motivated for participating in the problem solving process, the facilitator can conduct the first three stages very effectively. Then focus will be placed in the performing stage. This was seen in the case study presented in Section 3.

Communities of Practice

The model described above has an individual-centred conceptualization of group development, where each person has to find its place and role in the group work. The main assumption of this model is that group development happens through adaptation of each member. Group work can also be understood from a social concept where each individual is incorporated in a socio-cultural space.

The idea that group work involves a deepening process of participation in a community of practice has gained significant ground in recent years. Communities of practice have also become an important focus within organizational development. Many of the ways we have of talking about learning and education are based on the assumption that learning is something that individuals do. Furthermore, we often assume that learning has a beginning and an end; that it is best separated from the rest of our activities; and that it is the result of teaching.

The basic argument made by Lave and Wenger (1991) is that communities of practice are everywhere and that we are generally involved in a number of them - whether that is at work, school, home, or in our civic and leisure interests. In some groups we are core members, in others we are more at the margins. As we define these enterprises and engage in their pursuit together, we interact with each other and with the world and we tune our relations with each other and with the world accordingly. In other words we learn. Over time, this collective learning results in practices that reflect both the pursuit of our enterprises and the attendant social relations. These practices are thus the property of a kind of community created over time by the sustained pursuit of a shared enterprise.

A community of practice defines itself along three dimensions:

- The content - its joint enterprise as understood and continually renegotiated by its members,
- Its functions - mutual engagement that bind members together into a social entity, and
- Its resources - the shared repertoire of communal resources (routines, sensibilities, artefacts, vocabulary, styles, etc.) that members have developed over time

The interactions involved, and the ability to undertake larger or more complex activities and projects though cooperation, bind people together and help to facilitate relationship and trust. Communities of practice can be seen as self-organizing systems and have many of the benefits and characteristics of associational life

These ideas have been picked-up most strongly within organizational and community development circles. Perhaps more significantly, the growing interest in 'the learning organization' in the 1990’s alerted many of those concerned with organizational development to the significance of informal networks and groupings. The model gave those concerned with organizational development a way of thinking about how benefits could accrue to the organization itself, and how value did not necessarily lie primarily with the individual members of a community of practice.

Communities also appear to be an effective way for organizations to handle unstructured problems and to share knowledge outside of the traditional structural boundaries. In addition,

the community concept is acknowledged to be a means of developing and maintaining long-term organizational memory. These outcomes are an important, yet often unrecognized, supplement to the value that individual members of a community obtain in the form of enriched learning and higher motivation to apply what they learn.

The notion of community of practice and the broader conceptualization of situated learning provides significant pointers for practice

Learning in groups is in the conditions that bring people together and organize a point of contact that allows for particular pieces of information to take on relevance; without the points of contact, without the system of relevancies, there is not learning, and there is little memory. Learning does not belong to individual persons, but to the various conversations of which they are a part.

There is an intimate connection between knowledge and activity. Learning is part of daily living. Problem solving and learning from experience are central processes. Facilitators need to reflect on their understanding of what constitutes knowledge and practice. Perhaps one of the most important things to grasp here is the extent to which education involves informed and committed action. These are fascinating areas for exploration and, to some significant extent, take informal educators in a completely different direction to the dominant pressure towards accreditation and formalization.

5. Dealing with conflicts (Deutsh and Coleman, 2000)

In the course of a week, we are all involved in numerous situations that need to be dealt with through negotiation; this occurs at work, at home, and at recreation. A conflict or negotiation situation is one in which there is a conflict of interests or what one wants is not necessarily what the other wants and where both sides prefer to search for solutions, rather than giving in or breaking-off contact.

Few of us enjoy dealing with conflicts-either with bosses, peers, subordinates, friends, or strangers. This is particularly true when the conflict becomes hostile and when strong feelings become involved. Resolving conflict can be mentally exhausting and emotionally draining. But it is important to realize that conflict that requires resolution is neither good nor bad. There can be positive and negative outcomes. It can be destructive but can also play a productive role for you personally and for your relationships - both personal and professional. The important task of the facilitator is *to manage the conflict*, not to suppress conflicts and not to let conflicts escalate out of control. Many of us seek to avoid conflict when it arises but there are many times when we should use conflict as a critical aspect of creativity and motivation.

You will be constantly negotiating and resolving conflict throughout all of your professional and personal life. Given that communities and organisations are becoming less hierarchical, less based on positional authority, less based on clear boundaries of responsibility and authority; it is likely that conflict will be an even greater component of organizations in the future. While negotiation is an art form to some degree, there are specific techniques that anyone can learn.

Conflict occurs when individuals or groups are not obtaining what they need or want and are seeking their own self-interest. Sometimes the individual is not aware of the need and unconsciously starts to act out. Other times, the individual is very aware of what he or she wants and actively works at achieving the goal. Conflict develops because we are dealing with people's lives, jobs, children, pride, self-concept, ego and sense of mission or purpose. Early indicators of conflict can be recognized, see Box 7. There are strategies for resolution that are available and do work. Although inevitable, conflict can be minimized, diverted and/or dissolved.

Conflict is destructive when it takes attention away from other important activities or undermines morale or self-concept. Conflicts can also polarize people and groups, reducing cooperation and collaboration. A conflict is negative when increases or sharpens differences, and when it leads to irresponsible and harmful behaviour, such as fighting or name-calling. Conflict is constructive when it results in clarification of important problems and issues and it results in solutions to problems. Conflicts are positive if they involve people in resolving issues important to them and cause authentic communication. Conflict can helps release emotion, anxiety, and stress. Conflicts can contribute to build cooperation among people through learning more about each other and joining in resolving the conflict. Conflict is also constructive when helps individuals develop understanding and skills.

- Body language
- Disagreements, regardless of issue
- Withholding bad news
- Surprises
- Strong public statements
- Airing disagreements through media
- Conflicts in value system
- Desire for power
- Increasing lack of respect
- Open disagreement
- Lack of candour on budget problems or other sensitive issues
- Lack of clear goals
- No discussion of progress, failure relative to goals, failure to evaluate fairly, thoroughly or at all.

Box 7. Conflict indicators

Conflict is destructive when it takes attention away from other important activities or undermines morale or self-concept. Conflicts can also polarize people and groups, reducing cooperation and collaboration. A conflict is negative when increases or sharpens differences, and when it leads to irresponsible and harmful behaviour, such as fighting or name-calling. Conflict is constructive when it results in clarification of important problems and issues and it results in solutions to problems. Conflicts are positive if they involve people in resolving issues important to them and cause authentic communication. Conflict can helps release emotion, anxiety, and stress. Conflicts can contribute to build cooperation among people through learning more about each other and joining in resolving the conflict. Conflict is also constructive when helps individuals develop understanding and skills.

Searching for the causes of conflict is essential to be successful in resolving the conflict. Nine possible causes of conflict include:

- Conflict with self
- Needs or wants are not being met
- Values are being tested
- Perceptions are being questioned
- Assumptions are being made
- Knowledge is minimal
- Expectations are too high/too low
- Personality, cultural, or gender differences are present.

Box 8 gives some guidelines for reaching consensus through collaboration (Lax and Sebenius, 1986)

Negotiation is a sequence of events, not an incident. There is a tendency to think about conflict or the negotiating situation as an isolated incident. It is probably more useful to think about conflict as a process, or a complex series of events over time involving both external factors and internal social and psychological factors. Conflict episodes typically are affected by proceeding and in turn produce results and outcomes that affect the conflict dynamics.

Groups often collaborate closely in order to reach consensus or agreement. The ability to use collaboration requires the recognition of and respect for everyone's ideas, opinions, and suggestions. Consensus requires that each participant must agree on the point being discussed before it becomes a part of the decision. Not every point will meet with everyone's complete approval. Unanimity is not the goal. The goal is to have individuals accept a point of view based on logic. When individuals can understand and accept the logic of a differing point of view, you must assume you have reached consensus. Follow these guidelines for reaching consensus:

- Avoid arguing over individual ranking or position. Present a position as logically as possible.
- Avoid "win-lose" statements. Discard the notion that someone must win.
- Avoid changing of minds only in order to avoid conflict and to achieve harmony.
- Avoid majority voting, averaging, bargaining, or coin flipping. These do not lead to consensus. Treat differences of opinion as indicative of incomplete sharing of relevant information, keep asking questions.
- Keep the attitude that holding different views is both natural and healthy to a group.
- View initial agreement as suspect. Explore the reasons underlying apparent agreement and make sure that members have willingly agreed.

Box 8. Reaching consensus

A negotiation usually involves a number of steps including the exchange of proposals and counter proposals. In good-faith negotiation, both sides are expected to make offers and concessions. Your goal here is not only to try to solve the problem, but to gain information that will enable you to get a clearer notion of what the true issues might be and how your "opponent" sees reality. Through offers and counter offers there should be a goal of a lot of information exchange that might yield a common definition of the problem.

Such an approach suggests the importance of perception-conflict is in the eye of the beholder. Thus, situations which to an outside observer should produce conflict may not if the parties either ignore or choose to ignore the conflict situation. Conversely, people can perceive a conflict situation when in reality there is none. Once aware of the conflict, both parties experience emotional reactions to it and think about it in various ways. These emotions and thoughts are crucial to the course of the developing conflict. For example, a negotiation can be greatly affected if people react in anger perhaps resulting from past conflict.

Then based on the thoughts and emotions that arise in the process of conflict resolution, the facilitator formulates specific intentions about the strategies he/she will use in the negotiation. These may be quite general (e.g. plan to use a cooperative approach) or quite specific (e.g. use a specific negotiating tactic).

Finally, these intentions are translated into behaviour. These behaviours in turn elicit some response from the other person and the process recycles. This approach suggests the facilitator pays particular attention to these generalisations (Fisher et al, 1997):

- Conflict is an ongoing process that occurs against a backdrop of continuing relationships and events,
- Such conflict involves the thoughts, perceptions, memories, and emotions of the people involved; these must be considered,
- Negotiations are like a chess match; have a strategy; anticipate how the other will respond; how strong is your position, and situation; how important is the issue; how important will it be to stick to a hardened position,
- Begin with a positive approach: Try to establish rapport and mutual trust before starting; try for a small concession early, and
- Pay little attention to initial offers: these are points of departure; they tend to be extreme and idealistic; focus on the other person’s interests and your own goals and principles, while you generate other possibilities

6. Dialogue (Friedman, 1992)

Dialogue is about what we value and how we define it. It is about discovering what our true values are, about looking beyond the superficial and automatic answers to our questions. Dialogue is about expanding our capacity for attention, awareness and learning with and from each other. Dialogue is a communication process leading directly to personal and organizational transformation. It assists in creating environments of high trust and openness, with reflective and generative capacities. One might think of dialogue as an approach in the development of the following organizational disciplines: continuous learning, diversity,

conflict exploration, decision making and problem solving, leadership, self-managing teams, organizational planning and alignment, and culture change (Bohm and Edwards, 1992).

One might think of dialogue as a stream of meaning flowing among and through a group of people, out of which may emerge some new understanding, something creative. Dialogue moves beyond any one individual's understanding, to make explicit the implicit, to build collective understanding, and to create a cooperative working community. It is often useful to contrast dialogue with discussion. In dialogue we are interested in creating a fuller picture of reality rather than breaking it down into fragments or parts, as happens in discussion.

Dialogue slows down the speed at which most groups' interact by employing deeper levels of *listening and reflection*. Another important aspect of dialogue is its open-endedness. This means letting go of the need for specific results. This does not mean there are no results from dialogue; in fact there are many. However, in releasing the need for certain predetermined outcomes; important issues can be allowed by surface which often goes undiscovered in agenda-based meetings.

A final important aspect of dialogue is that it creates a community-based culture of cooperation and shared leadership (communities of practice). It moves groups from the dependency, competition and exclusion often found in hierarchical cultures to increased collaboration, partnership and inclusion. David Bohm (1985) likened discussion to an activity where we *throw* our opinions back and forth in an attempt to convince each other of the rightness of a particular point of view. In this process, the whole view is often fragmented and shattered into many pieces. The intentions of dialogue and discussion in group work are quite different and are contrasted in Box 9. The facilitator should be able to switch from dialogue to discussion and vice versa, as it is needed in the process.

Dialogue	**Discussion**
• To inquire to learn	• To tell, sell, persuade
• To unfold shared meaning	• To gain agreement on one meaning
• To integrate multiple perspectives	• To evaluate and select the best
• To uncover and examine assumptions	• To justify/defend assumptions

Box 9. Dialogue vs. Discussion

Box 10 presents some behaviour and actions that can support dialogue in group work. The more consciously we use them, the more they help us to enter into and sustain the dialogue. And, all the skills are interrelated. For example, as we begin to draw aside the curtains of our judgments, we develop the capacity to speak and listen without the automatic colouring of past thought patterns. We become less reactive, more aware of the assumptions through which we filter our observations. Choosing to suspend these assumptions, we may

experiment with expanding the horizons of our perceptions, increasing the number of points of view available to us. By creating space to reflect on what we perceive, seeking the next level of inquiry, opening up our senses and listening deeply and actively, with the intention to discover, understand and learn we enter into dialogue.

7. Focus Groups (Morgan, 1997)
Focus group work involves organised discussion with a selected group of individuals to gain information about their views and experiences of a topic. Focus group interviewing is particularly suited for obtaining several perspectives about the same topic.

The benefits of focus group work include gaining insights into people's shared understandings of everyday life or work and the ways in which individuals are influenced by others in a group situation. Problems arise when attempting to identify the individual view from the group view, as well as in the practical arrangements for conducting focus groups. The role of the facilitator is very significant. Good levels of group management and interpersonal skill are required to facilitate a group successfully. Focus groups are used in social research, in market research, more recently in medical research and design of artefacts.

There are many definitions of a focus group, but features like organised discussion, collective activity, social events, and interaction identify the contribution that focus groups make to technical, social and action research. Let us define a focus group as:
A group of individuals selected and assembled to discuss and comment on, from personal experience and knowledge, the topic that is the subject of the workshop.

Focus groups are a form of group interviewing but it is important to distinguish between the two. Group interviewing involves interviewing a number of people at the same time, the emphasis being on questions and responses between the researcher and participants. Focus groups however rely on *interaction and dialogue* within the group based on topics that are supplied by the facilitator. Hence the key characteristic which distinguishes focus groups is the insight and data produced by the interaction between participants. The tapestry weavers introduced in Chapter 3 is an example of a focus group.

The main purpose of focus group work is to draw upon respondents' attitudes, feelings, beliefs, experiences and reactions in a way in which would not be feasible using other methods, for example observation, one-to-one interviewing, or questionnaire surveys. These attitudes, feelings and beliefs may be partially independent of a group or its social setting, but are more likely to be revealed via the social gathering and the interaction which being in a focus group entails. Focus groups are not natural but designed events. Focus groups are particularly useful when there are power differences between the participants and decision-makers or professionals, when the everyday use of language and culture of particular groups is of interest, and when one wants to explore the degree of consensus on a given topic.

- *Suspension of judgement when listening and speaking.* When we listen and suspend judgment we open the door to expanded understanding. When we speak without judgment we open the door for others to listen to us.
- *Respect for differences.* Our respect is grounded in the belief that everyone has an essential contribution to make and is to be honoured for the perspective which only they can bring.
- *Role and status suspension*. Again, in dialogue, all participants and their contributions are absolutely essential to developing an integrated whole view. No one perspective is more important than any other dialogue is about power with, versus power over or power under.
- *Balancing inquiry and advocacy.* In dialogue we inquire to discover and understand others perspectives and ideas and we advocate to offer our own for consideration. The intention is to bring forth and make visible assumptions, relationships and gain new insight and understanding. We often tend to advocate to convince others of our positions Therefore a good place to start with this guideline is to practice bringing more inquiry into the conversation.
- *Focus on learning.* Our intention is to learn to from each other, to expand our view and understanding, versus evaluate and determine who has the "best" view. When we are focused on learning we tend to ask more questions, try new things. We are willing to disclose our thinking so that we can see both what is working for us and what we might want to change. We want to hear from all parties so that we can gain the advantage of differing perspectives.

Box 10. Behaviours that support dialogue

The use of focus groups

Focus groups can be used at the preliminary or exploratory stages of a study inquiry or a conference, during a study, perhaps to evaluate or develop a particular programme of activities or after a programme or workshop has been completed, to assess its impact or to generate further avenues of inquiry. They can be used either as a method in their own right or as a complement to other methods.

Focus groups can help to explore or generate hypotheses and develop questions or concepts for questionnaires and interview guides. They are however limited in terms of their ability to generalise findings to a whole population, mainly because of the small numbers of people participating and the likelihood that the participants will not be a representative sample. Examples of research in which focus groups have been employed include developing HIV education in developing countries, understanding how media messages are processed, design of computerised artefacts, and distance interviewing of family doctors.

Interaction is the crucial feature of focus groups because the interaction between participants highlights their view of the world, the language they use about an issue and their values and beliefs about a situation. Interaction also enables participants to ask questions of each other, as well as to re-evaluate and reconsider their own understandings of their specific experiences.

Another benefit is that focus groups elicit information in a way which allows facilitators to find out why an issue is salient, as well as what is salient about it. As a result, the gap between what people say and what they do can be better understood. If multiple understandings and meanings are revealed by participants, multiple explanations of their behaviour and attitudes will be more readily articulated.

The benefits to participants of focus group research should not be underestimated. The opportunity to be involved in decision making processes, to be valued as experts, and to be given the chance to work collaboratively with the facilitators can be empowering for many participants. Not everyone will experience these benefits, as focus groups can also be intimidating at times, especially for inarticulate or shy members. Hence focus groups are not empowering for all participants and other methods may offer more opportunities for participants. However if participants are actively involved in something which they feel will make a difference, and focus group work is often of an applied nature, empowerment can realistically be achieved.

Another advantage of focus groups to clients, users, participants or consumers is that they can become a forum for change both during the focus group meeting itself and afterwards. For example, the participants in the workshop can experience a sense of emancipation through speaking in public and by developing reciprocal relationships with the facilitators.

Although focus group work has many advantages, as with all methods there are limitations. Some can be overcome by careful planning and facilitation, but others are unavoidable and peculiar to this approach. By its nature focus group work is open ended and cannot be entirely predetermined. It should not be assumed that the individuals in a focus group are expressing their own definitive individual view. They are speaking in a specific context, within a specific culture, and so sometimes it may be difficult for the facilitator to clearly identify an individual message. This too is a potential limitation of focus groups.

On a practical note, focus groups can be difficult to assemble. It may not be easy to get a representative sample and focus groups may discourage certain people from participating, for example those who are not very articulate or confident, and those who have communication problems or special needs. The method of focus group discussion may also discourage some people from trusting others with sensitive or personal information. In such cases personal interviews or the use of workbooks alongside focus groups may be a more suitable approach. Finally, focus groups are not fully confidential or anonymous, because the material is shared with the others in the group.

The recommended number of people per group is usually six to ten but some researchers have used up to fifteen people or as few as four. Numbers of groups vary, some studies using only one workshop with each of several focus groups, others meeting the same group several times. Focus group sessions usually last from one to two hours. Neutral locations can be helpful for avoiding either negative or positive associations with a particular site or building. Otherwise the focus group workshops can be held in a variety of places, for example, people’s homes, in rented facilities, or where the participants hold their regular meetings if they are a pre-existing group.

It is not always easy to identify the most appropriate participants for a focus group. If a group is too heterogeneous, whether in terms of gender or class, or in terms of professional and 'lay' perspectives, the differences between participants can make a considerable impact on their contributions. Alternatively, if a group is homogenous with regard to specific characteristics, diverse opinions and experiences may not be revealed. Participants need to feel comfortable with each other. Meeting with others whom they think of as possessing similar characteristics or levels of understanding about a given topic, will be more appealing than meeting with those who are perceived to be different.

The role of group facilitator

Once a meeting has been arranged, the role of group facilitator becomes critical, especially in terms of providing clear explanations of the purpose of the group, helping people feel at ease, and facilitating interaction between group members.

During the meeting the facilitators will need to promote debate, perhaps by asking open questions. They may also need to challenge participants, especially to draw out people's differences, and tease out a diverse range of meanings on the topic under discussion. Sometimes facilitators will need to probe for details, or move things forward when the conversation is drifting or has reached a minor conclusion. Facilitators have to keep the session focused and sometimes they may deliberately have to steer the conversation back on course. Facilitators have to ensure everyone participates and gets a chance to speak. At the same time facilitators are encouraged not to show too much approval, so as to avoid favouring particular participants. They must avoid giving personal opinions so as not to influence participants towards any particular position or opinion (Kreuger, 1988).

Finally, the degree of control and direction imposed by facilitators will depend upon the goals of the research as well as on their preferred style. If several facilitators are involved in the facilitation of a focus group, agreement needs to be reached as to how much input or direction each will give. It is recommended that one facilitator facilitates and the other takes notes and checks the recording equipment during the meeting. There also needs to be consistency across focus groups, so careful preparation with regard to role and responsibilities is required.

8. Final Remarks

Group work, group development and group empowerment are important issues in the facilitation of problem solving processes. Workshops and conferences for problem solving are purposeful social interventions that can be designed and facilitated in many different ways.

In Chapter 2, the facilitation of a large group was discussed where the participants will be allocated to sub-groups that will be facilitated to solve specific tasks. The tasks are not the same but interrelated, therefore discussions at plenum are also planned. The processes of the group work at each sub-group are very different due to many factors. Therefore, the facilitation processes need to be evaluated.

In Chapter 3, a less experienced group was facilitated to deal with crucial problems related to the survival of their craft an art. The facilitator had a rather complex job while conducting the

group in a developing process. During the workshop there were many conflicts and disagreements to be settled down. Fortunately, the workshop ended with fruitful results and the participants were so empowered that they were able to continue working after the workshop to achieve their visions.

Finally, in this Chapter a very experience group was facilitated in an exemplary way to generate group dynamics and usable projects to be implemented.

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CHAPTER 5

CREATIVE TOOLS

Methods are tools.
It takes people with spirit
to make them work.

1. Introduction

All of us have experience from primary school up to university that the problem solving techniques we have learned and practiced involved cases that:

- Have been solved many times,
- Have an obvious standard form,
- Have a clearly formulated goal,
- Have all the information needed,
- Have standard rules to follow,
- Have one right answer, and
- Have as a main motivation an external approval.

Creative problem solving is what millions of people use to survive every day, yet we get no practice about these skills in our structured, deterministic, safe, and supervised learning environments. Creative problem solving deals with situations where one or more of the characteristics outlined about are negated.

The creative tools presented in this chapter can support the different stages of the creative processes. They are designed to help you to devise creative and imaginative solutions to problems, and help you to spot opportunities that you might otherwise miss. The creative tools presented in this chapter have been used in practice to deal with problems such as:

- Improving products or services,
- Creating new products or services,
- Developing new strategies,
- Generating many radical ideas,
- Making creative leaps,
- Widening the search for solutions,
- Looking at problems from different perspectives, and
- Solving everyday problems.

In Section 2, a simple case study related to the design of a project by a group of students is presented. This is an example of the use of divergent and convergent thinking in problem solving. Furthermore, it is shown how these processes can be supported using the following creative tools: Brainstorming, Mind Mapping, and SWOT-analysis.

In the next section, Section 3, a set of creative tools is introduced; this can be used to support fluency, flexibility, originality and elaboration in the problem solving process. The presented tools are those that are most used in practice.

A classification of creative tools is discussed in Section 4. These tools are grouped following three categories: paradigm preserving, paradigm stretching, and paradigm breaking. A whole series of creative techniques are introduced following this classification.

The rules governing divergent and convergent thinking are further presented in Section 5. Then, in Section 6, the use of creativity in the solution of large and complex problems is

elaborated. Especially, the approach known as the Creative Problem Solving process is presented.

In Section 7, an extension of the original CPS approach known as the Simplex approach is shortly outlined. Section 8 presents the final remarks concerning CPS. Other popular creative methods are outlined in Section 9. Finally, the last section presents the final remarks.

2. Case Study: Selecting a topic for a project

Since 1998, a course entitled Creativity and Problem Solving has been offered to engineering students at The Technical University of Denmark. The main objective of this course is to create a space to discuss, reflect and experiment with creativity, creative processes and creative methods of relevance for engineering students of any speciality. We assume that this reflective and experimental approach will indirectly influence on the development of the students own creativity. In this respect, the focus will be centred on the role of the engineer as supporter or facilitator of problem solving groups.

The course has been designed for 30 students. The whole course runs for 14 weeks. We meet one morning every week from 9.00 a.m. to 12.00 p.m. In the first part of the course (7 weeks), *the introduction*, a series of lectures will be given and the students work in groups of 5 persons preparing an oral presentation of some creative approaches. In addition, two guest lectures coming from the real world will give talks about the use of creative techniques in practice and innovation in organisations, respectively.

The following 7 weeks, the students will work in groups with a practical project selected by them. The students will search for information, interview relevant stakeholders, discuss in groups, use creative techniques, and they will be supervised to write a paper about their project. The students are encouraged to integrate the activities that belong to different parts of the human brain, logical as well as intuitive, factual as well as imaginative, quantitative as well as qualitative. The course ends with a conference where every group presents the result of their work to the other students.

Let us see the creative process that the students have to go through to identify and formulate a project.

The group process of project identification and formulation is composed of the following four stages:

1. *Diverge* (one hour): using brainstorming or other creative tools the group will produce as many ideas as possible of projects. Table 1 shows an example of the ideas produced by a group of four students.

Air conditioned cloths	Animal generating electricity
Consumption.com	Smoker's system
DTU-rating.dk	Foot massage machine in malls
Heated cloths	In phone services
Interactive classrooms	MSN holograms
Meal for one	LCD in S train
Parking cars compactly	Parking cars in 2nd floor
Parking cars in water	Phone watch
Portable conveyor belt	Self cleaning shoes
Shoes providing massage	Space travel agency
Substitute candle	Video rental web

Table 1. Projects in divergent stage

2. *Converge* (one hour): the generated projects will be discussed and maybe structured using Mind Map or other technique. Then the three most promising projects will be selected, a voting procedure will be used if needed. Table 2 shows the selected projects of the above mentioned group.

• Smoker's system • DTU-rating system • MSN hologram

Table 2. Selected projects

3. *Final evaluation*: A SWOT matrix will be constructed for each of the selected projects in stage 2, based on this information a final project will be selected. Table 3 shows the results of the SWOT analysis for the selected project: Smoker's system.

Opportunities • High demand • New market • Recycling • Smoking bans • Clean air for no-smokers • Improved health • Smoke everywhere • More profit in restaurants • Changing regulations **Strengths** • Very creative students • Use resources in technical design • Good cooperation with other universities	**Threats** • No market • Un-cool • Annoyance • Law against it • Patents • Other players on the market • Cigarettes will be banned • Cigarette is a threat **Weaknesses** • No money • Limited time • Mass production

Table 3. SWOT matrix for the selected project

4. *Problem formulation:* The purpose and boundaries of the project will be specified. This is shown in Box 1 for the above mentioned group.

Our group wants to develop a system which allows the smokers to smoke in public places without disturbing non smokers. Generally, we identified three main problems. The first problem is to identify problems that smoking brings to smokers and no smokers. Next, we have to find out how the smoker's system will deal with these problems. The third problem is related to the technical elements of the system. The product will be used by smokers causing no annoyance to the no-smoking people, in countries or places where it is forbidden to smoke in public.

Box 1. Problem formulation

3. Creative Tools

A variety of abilities that characterises creative individuals or groups have been presented in Chapter 1. Four of the key abilities will be discussed in this section as well as tools to enhance them in concrete problem solving situations. These abilities are:

- Fluency,
- Flexibility,
- Originality, and
- Elaboration.

In Chapter 1, three creative tools were already introduced; in this section we will expand the previous presentation. Other tools will also be presented in this section (Vidal, 2004).

Higgins (1994) presents many other tools which are not discussed in this chapter. At the end of the list of references some Web pages are presented where many creative tools are described.

Fluency

Fluency is the production of multiple problems, ideas, alternatives or solutions. It has been shown that the more ideas we produce, the more likely we are to find a useful idea or solution. Fluency is a very important ability especially in the creative problem solving process. To have too few alternatives is not a good thing in problem solving. Especially if you have to be innovative. There are many tools for producing ideas, alternatives and solutions. Several researchers have shown that training and practice with these tools cause a better fluency.

One creative tool, which has been widely used with big success for generating many ideas, is *Brainstorming*. Osborn (1953) invented it for the sole purpose of producing checklists of ideas that can be used in developing a solution to a problem. The tool is directed to generating unconventional ideas by suppressing the common tendency to criticise or reject them summarily. Osborn tried to separate idea-evaluation from idea generation because he believed that if evaluation comes early, it reduces the quantity and quality of the ideas produced. Therefore in a Brainstorming session no criticism is permitted and freewheeling generation of a large number of ideas and their combination and development are encouraged. Brainstorming is founded on the associative premise that the greater the number of associations, the less stereotyped and more creative the ideas of how to solve a problem will be.

However, nothing in Brainstorming is directed at changing the assumptions or paradigms that restrict the generation of new ideas. This is an excellent technique for strengthening fluency, fantasy, and communication skills. It is a good idea to have a facilitator to prepare and warm-up the Brainstorming session, to lead and support the session, and to evaluate the whole process. This tool gives the possibility for the group to use more than one brain achieving a synergetic effect. Generate a multitude of ideas and some of them will be truly useful, innovative and workable. Asking individuals for inputs gives them an increased sense of importance and produces an atmosphere for truly creative and imaginative ideas to surface and be acknowledged. Brainstorming has been used for a wide diversity of problems, including not only marketing and product issues but also strategy development, planning, policy, organisation, leadership, staffing, motivation, control, and communication. However, this tool is not appropriated for broad and complex problems demanding high-qualified expertise and know-how. Some of the ideas produced may be of low quality or obvious generalities. Brainstorming is not a good idea for situations that require trail and error as opposed to judgement.

In the two boxes below, the rules of Brainstorming are formulated as well as the positive and negative behaviours in a Brainstorming workshop.

The rules of brainstorming

Rule 1: Criticism is ruled out
Rule 2: Free-wheeling is welcomed
Rule 3: Quantity is desired
Rule 4: Combination and improvement are sought

Good behaviour:

- sharpen the focus,
- playful rules,
- number your ideas,
- build and jump,
- stretch your mental muscles,
- get physical
- use a facilitator

Bad behaviour

- the boss gets to speak first,
- everybody gets a turn,
- experts only please,
- do it off-site,
- no silly stuff,
- write down all

Box 2 and 3. Brainstorming

Flexibility

Flexibility is the ability to process ideas or objects in many different ways given the same stimulus. It is the ability to delete old ways of thinking and begin in different directions. It is adaptive when aimed at a solution to a specific problem, challenge or dilemma. Flexibility is especially important when logical methods fail to give satisfactory results. Looking at modern paintings requires flexibility, they demand looking from different perspectives in order to see different objects, images and symbols. Seeing persons or objects in the clouds requires the flexibility of seeing concrete shapes in cloud formations. Flexible thinking provides for changes in ideas, detours in thinking to include contradictions, differing viewpoints, alternative plans, differing approaches and various perspectives of a situation.

A family of creative tools, known as *verbal checklists*, has been developed to enhance flexibility in the creative process. Usually this is a checklist of questions about an existing product, service, process, or other item to yield new points of view and thereby lead to innovation. Osborn (1953) has also developed a very extensive verbal checklist while he was a partner of a major US advertising firm. The idea behind the verbal checklist is that an existing product or service can be improved if one applies a series of questions to it and pursues the answers to see where they may lead. The main questions take the form of verbs such as Modify? or Combine? These verbs indicate possible ways to improve an

existing product or service by making changes to it. Then you add definitional words to the verb, for instance combine ideas, combine appeals, combine purposes, combine units, etc.

Elberle (1971) developed a short verbal checklist known as the *SCAMPER* technique to assist people in improving their flexible thinking, see Box 4. When using such checklist, you will usually follow the following steps:

- Identify the product or service to be modified
- Apply each of the verbs on the checklist to suggest changes in the product or service
- Make sure you use many definitional words for the listed verbs, and
- Review your changes to determine which one meets your solution criteria.

SCAMPER

S: Substitute
C: Combine
A: Adapt
M: Modify
Magnify
Minify
P: Put to
E: Eliminate
R: Reverse
Rearrange

Box 4. Scamper rules

Another important tool for encouraging flexibility is the use of *provocative questions*. These questions will open up a situation to a broader and deeper direction of thinking which otherwise might not be produced or considered. They encourage people to think about ideas or concepts they have not thought about previously. Some provocative questions can be: What would happen if: water tasted like whisky? Cats could bark? Women could fly? How is: A PC like a ship? A flower like a cat? A sunset like a lake? A car like a fork? What might happen if: It never was Sunday? It was against the law to be perfectionist? People were not creative? Image what might happen if: By law it was forbidden to have children? Cars could fly? Men could have children?

Originality

Originality means getting away from the obvious and commonplace or breaking away from routine bound thinking. Original ideas are statistically infrequent. Originality is a creative strength, which is a mental jump from the obvious. Original ideas are usually described as unique, surprising, wild, unusual, unconventional, novel, weird, remarkable or revolutionary. You need courage to be creative, because as soon as you propose a new

idea, you are a minority of one. Belonging to a minority is unpleasant. In addition the original thinker must be able to withstand the ridicule and scepticism, which will be directed toward his/her ideas and himself/herself. To enhance creativity we have to be respectful of unusual or crazy ideas or alternatives.

Picture Stimulation is a very popular technique used to provide ideas beyond those that might be obtained using brainstorming, see Box 5 below. The members of the group will look at a set of selected pictures and relate the information gained from the picture to the problem, otherwise the rules of brainstorming should be followed. Photo excursion uses the same principles of picture stimulation but instead of using prepared pictures for stimulation, participants are required to leave the building walk around the area with a (Polaroid or digital) camera, and take pictures of possible solutions or visual ideas for the problem; when the group reconvenes, ideas are shared. Another related technique is the Object Stimulation tool where instead of pictures a variety of different objects (e.g. a hammer, a pencil, a board game, etc.) will be used. Sometimes you can use words instead of pictures or objects, an associate them to your problem.

Picture Stimulation:

1. Select pictures from various sources.
2. Each participant describes what he/she sees in the picture.
3. The group members are then asked to relate the information gained from the picture to the problem.
4. This process is then continued until the group has run out of ideas.
5. A new picture is selected and then go to 2. until enough ideas have been developed.
6. The ideas are discussed, developed and evaluated by the group.

Box 5. Picture stimulation

There exist a number of computer programs that can be used to generate alternatives and otherwise add creativity to the problem solving process. They will include a huge amount of words and phrases together with many idea-associations that are linked to several thousand questions. The words, phrases or questions, randomly selected, will provoke ideas and associations that have to be related to the problem in question and solutions might be generated.

Originality can also be enhanced by *analogies and metaphors*. An analogy is a comparison of two things that are essentially dissimilar but are shown through the analogy to have some similarity. A metaphor is a figure of speech in which two different universes of thought are linked by some point of similarity. In the broadest sense of the term, all metaphors are simple analogies, but not all analogies are metaphors. Nature is a good source to provide analogies. Poetry is a good source of metaphors. Similes are specific types of metaphors that use the words "like" and "as" - for instance, the wind cut

like a knife; his hand was as quick as a frog's tongue, he sees like a condor and digs as fast as a mole. Similes can be used to suggest comparisons that offer ideas for solutions.

Elaboration

Mind Mapping is a visual and verbal tool usually used to structure complex situations in a radial and expanding way during the creative problem solving process. A mind map is by definition a creative pattern of related ideas, thoughts, process, objects, etc. It is difficult to identify the origin and the creator of this technique. It is quite probable that this tool has been inspired by research on the interplay between the left and the right hemisphere of the brain. It can also be dated back to the Bulgarian doctor and psychiatrist Lozanov who experimented with the brain and accelerated learning. It has been, among others, Buzan (1983) who has made Mind Mapping a well-known technique with many applications.

The principles to construct mind maps are few and easy to understand. The best way to learn it is by practice. After short time you will do it automatically. If it is difficult for adults it is because they think linearly and take notes in a linear way (using the left hemisphere of the brain). To make mind maps you have to draw ideas from the centre of the paper and move in a radial and parallel way, to do that you have to use both your creative and your logical brain. With some experience you develop your own style, your own pallet of colours, your own symbols, your own icons, etc.

A Mind Map contains usually the following elements:

- The subject or the problem that has to be studied or analysed will be placed in the centre of the paper
- Keywords (names or verbs) are used to represent ideas, as far as possible only one word is used in a line
- The keywords are connected to the centrum through a main branch and sub-branches
- Colours and symbols are used to emphasise ideas or to stimulate the brain to identify new relations
- Let ideas and thoughts flew free; avoiding too much evaluation during the period of elaboration of the map.

When I construct a mind map, I will start from left to right building main branches in a circular way. Then, I will continue drawing sub-branches moving in a circular way until the whole sheet of paper is filling up with ideas. That is, I have been moving following an expanding spiral pattern. Then, I will move in the reverse way following a contracting spiral pattern supplementing the map with new ideas and connections. These spiral movements provoke the interplay between the creative and the logical brain to be able to combine holistic thinking with particular details of the subject or the problem in question. An example of a shopping mind map is shown in Figure 1.

Figure 1. Mind Mapping for shopping

4. The Creativity Continuum

Creativity tools can be classified in many different manners. McFadzean (1998) has developed a framework for classifying creativity tools using three categories:

- *Paradigm preserving,* where neither new elements nor relationships between the elements of the problem are introduced,
- *Paradigm stretching,* where either new elements are introduced or new relationships between the elements of the problem are conceived, and
- *Paradigm breaking,* where both new elements and new relationships between the elements are introduced.

Paradigm preserving tools

We have seen that brainstorming does not create many ideas that challenge or break away from the prevailing paradigm. This is so because this tool only uses *free association,* not forcing the persons to use their fantasies to produce new ideas or to think in an expanding way. Let us see another technique within this family.

Force Field Analysis is usually used in situations related to changes. Each participant has to write two scenarios. The first one is the description of the situation if a disaster were to occur. The second scenario would be a presentation of the ideal situation. The non-ideal and the ideal scenarios will be placed on a continuum with a centre line drawn between them. The participants will be asked to list the (negative) forces that will make the situation non-ideal and those (positive) forces that will make the situation ideal. Thereafter, the group has to generate ideas to reduce the negative forces and enhance the positive forces.

The *(5W+H)* tool is simple and very useful. The five W's and the H are acronyms for Who? What? Where? When? Why? And How? It is a good tool for gathering information systematically about a mess or a problematic situation.

Word Diamond is a technique developed in order to generate ideas from the problem statement. Four words or phrases will be chosen from the problem statement. These will be placed in a diamond shape so that each word or phrase is located in a corner. The participants combine two of them and tell the facilitator the associated ideas due to the combinations. The facilitator writes on a flip chart all the ideas. This process is repeated until all the combinations are examined.

These and many other tools for creative thinking do not necessarily encourage the individuals and the group to regard the problem from different perspectives. That is the participants will tend to preserve their paradigms. These tools are valuable because they are somehow "safe", people usually feel comfortable with their use. Free association and hitchhiking is used to spark off other ideas and then produce new solutions. Paradigm preserving techniques are very popular because they are easy to use from the participant’s and facilitator’s viewpoint. In addition, these tools create usually fun and a good atmosphere and therefore they can be used as warm-up techniques before going to other more advanced tools. The use of these tools does not demand experienced groups and facilitators.

Paradigm stretching tools

These techniques will encourage the participants to regard the situation from a new perspective. They may use new relationships between new elements to develop a new element to create a new solution. This is usually called *unrelated stimulus.* Let us see some of these tools.

We have seen that the *checklists* described above are well known approaches within this family. They use unrelated stimuli to spark off new ideas. They demand more imagination and expression than paradigm preserving techniques.

Metaphor is also a tool belonging to this family. The facilitator first constructs metaphor categories, for instance: journey, nature, people, food, music, countries, and so on. Afterwards minor categories are stipulated, for example for journey: in space, on land, under sea, etc. The participants are asked to describe the problem using the metaphor category. The facilitator needs to stipulate whether the description should be at the present situation or the ideal situation. Using the descriptions developed by each person, the participants can generate new ideas. These new ideas can be related back to the problem situation.

Another technique is *Role Storming*. This tool involves the group generating ideas from someone else perspective. You could be Leonardo, Edison, Picasso, Robin Hood, Donald Duck, Bush or some Super Heroes. Each participant is asked to describe a character and together with the others, generates ideas related to the problem using the character's profile or his tools and implements. The ideas will be discussed and developed by the group.

Heuristic Ideation Technique can be used to create new concepts, ideas, products or solutions. The group will first make two lists of objects or concepts. An object from list 1 is then chosen together with one object from list 2. The participants are then asked to force a relationship between the two. For instant forcing together a telephone with a PC can give origin to the Internet. The participants continue until all ideas have been exhausted. The ideas are then discussed and developed into innovative solutions.

Reversal is a tool that can help the group to look at the problem from a different platform. Reversing the problem statement can often provide a new perspective and therefore new ideas. The participants will be asked by the facilitator to reverse in someway the problem statement. They can change the subject, the verb or the object of the sentence. For instance: how to increase production? Can be reversed to: how to decrease production. Using the reversed statement we can use another tool, for example brainstorming, to generate ideas. Continue until enough ideas have been generated. Discuss and develop the ideas into innovative solutions.

A similar tool to the last one is the so-called *Assumption Reversals* technique. Here the assumptions regarding the problem situation are stipulated. Reverse each of the assumptions and generate new ideas in a similar way as in the case of Reversal.

All these tools enhance creativity by looking at the problem from a variety of perspectives and by breaking old mind patterns and forming new connections and perceptions. De Bono (1995) called this process *lateral thinking* or moving sideways in order to try different concepts and perceptions.

Paradigm breaking tools

These techniques will encourage the participants to completely break down the paradigm. In other words the participants can regard the problem or situation from a variety of different and probably contrasting perspectives. Incorporating both new elements and new relationships to the problematic situation will create innovative solutions. Let us see some of these tools.

We have already discussed *Picture Stimulation* as a technique that enhanced the production of original ideas. This is a very popular technique that provokes visual thinking, a very important ability of creative individuals.

Wishful Thinking is another technique in this family of tools. The facilitator emphasises that everything is possible and that the participants have to use their fantasy. Each participant is asked to develop some fantasy statements about the future using formulations as: In the future, it would be nice if ... If I was the leader in this situation I shall do... The participants then examine each fantasy statement and suggest ideas and actions about how these fantasy statements could be achieved. Thereafter the new ideas are linked back to the actual problem. This can be achieved by using formulations such as: Even if it is difficult to reach, we can ... It will be possible, if ...

Another well-known technique is *Rich Pictures*. The facilitator asks each participant to draw two pictures. The pictures might be a metaphor of the situation. The first drawing should be a picture of how the participants would like to see the situation in the future. The second picture should be a drawing of how the participants see the present situation. Each participant explains first the picture of the present situation; the (5W+H) technique could be used to structure his explanation. Next, the participant describes the future in the same way. All the participants may then generate ideas of how to move from the present to the future.

Imagining is a tool that can generate many creative ideas but it will not work with very conservative groups. This tool is ideal for groups with visionary participants and for groups where the participants feel rather confident each other and like to have fun. These kinds of groups are like a dream for a facilitator. The facilitator chooses a word and one participant starts to make a story around this word. After a minute somebody else should take over the story and continue. Anybody now can jump in when they please. The participants should be encouraged by the facilitator to be as wild, exotic and colourful as possible. The richer is the description the better. Changeovers can be steered by the facilitator to introduce a factor of surprise. The images can be written down by the facilitator and then used as unrelated stimuli to create ideas relating to the problematic

situation. This technique is usually called *Wildest Ideas* if instead of a word it is used a wild idea to start with.

As we have mentioned above, these paradigm breaking tools should be used only with experienced groups or groups that feel rather comfortable with the facilitator. These tools are demanding from the participants the ability to use fantasy, intuition, and feelings and to play. Due to the above mentioned mental locks many people will be afraid and anguished to participate in such sessions. Some can react very negatively and consider the workshop a waste of time.

The continuum

Creativity tools can be located in a creativity continuum ranging from paradigm preserving tendencies to paradigm breaking tendencies as suggested by McFadzean. Paradigm preserving tools are considered to be "safe", that is they do not provoke anguish to the participants; they do not demand imagination and expressivities from the participants; they use free association to produce ideas and they do not demand experienced groups. At the other extreme, we have paradigm breaking tools that can be viewed as "unsafe"; they demand imagination; they use fantasy and unrelated stimuli to generate original ideas demand experienced groups. In the centre of this continuum are the paradigms stretching tools.

O´Dell (2001) presents a similar way to locate creativity tools in a continuum but using a different scale. At one extreme we will have the more structured tools as for instance checklists and in the other extreme are the less structured tools, for instance picture stimulation.

Creativity tools can also be classified according to the four styles of creativity suggested in Chapter 1: Modifying, visioning, experimenting, and exploring. Technical people, like engineers, prefer to use more structured or analytically oriented tools whereas behaviourally oriented participants tend to prefer less structured or intuitive tools. Research has shown that pragmatic-minded persons usually overlook paradigm breaking tools; they prefer logical or rational modes of analysis while artists are more willing to use their intuition and fantasy. Although, logical and rational type of approaches can be useful for well-structured problems, it will not work as well with most ill structured problems. Different tools are therefore useful for different types of problems. Paradigm stretching or paradigm breaking techniques may be more useful for ill-structured problems whereas paradigm preserving tools can be used to solve more structured problems or well known situations. If a problem is open-ended and ill structured, it is probably a good idea to generate a fantasy or a metaphor in order to explore a desired scenario for the situation. When dealing with ill-structured problems it is often a good idea to start with a paradigm preserving tool to warm-up and then switch to paradigm stretching or paradigm breaking techniques.

Selecting one or more creativity tools to facilitate a group in a creative problem solving process is a difficult decision-making problem where the facilitator has to reflect about three (usually incompatible) forces:

- The organisational *culture* behind the group and what they represent,
- The *task* or problem and its complexity, and
- Your *style* as facilitator and your own goals for the process.

5. Divergent and Convergent Processes

Experience has shown that it is recommendable in a creative process to start with divergent thinking to produce as many ideas or solutions as possible and thereafter to switch to convergent thinking to select the few most promising ideas. This is usually illustrated in the form of a diamond as shown in Figure 2.

Some of the rules for **divergent thinking** are:

- Imaging, reframing and seeing issues from different perspectives,
- Defer judgement (criticism or negativity kills the divergent process), be open to new experiences,
- Quantity breeds quality, to have good ideas you need lots of ideas,
- Hitchhiking is permitted, in this way a synergetic effect can be achieved,
- Combine and modify ideas, in this way you can create many ideas,
- Think in pictures, to create future scenarios you can even simulate potential solutions,
- Stretch the ideas, imagine ideas beyond normal limits, and
- Do not be afraid to break paradigms, avoid destructive criticism, and add value to the challenged concept.

Some of the rules of **convergent thinking** are:

- Be systematic, find structure and patterns in the set of produced ideas,
- Develop ways to evaluate ideas, assess qualitative and quantitative measures of ideas,
- Do not be afraid of using intuition, this is the way most important decisions are taken,
- Avoid quickly ruling out an area of consideration, take your time or better sleep on it,
- Avoid idea-killer views, try the impossible,
- Satisfy, do not expend too much time in looking for the optimal solution of an ill-structured multi-criteria problem,
- Use heuristics, use common sense and experience based rules, and
- Do not avoid but assess risk, this does not mean being blind to risks, for serious consequences be sure to have a contingency plan.

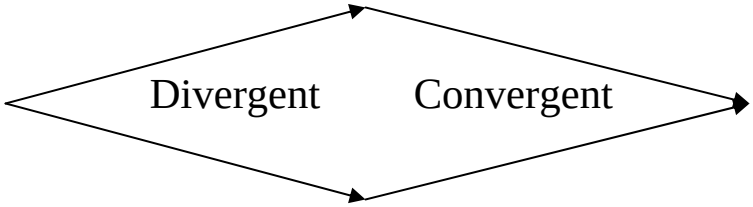

Figure 2. The creative diamond

Creative problem solving processes always contain phases of divergent and convergent thinking. Divergent thinking produces as many solutions as possible within the available time. The participants will vary in the way they prefer to produce ideas; some will do it by association, others by unrelated stimulus. Convergent thinking on the other hand requires the participants to use skills in reality testing, judgement and evaluation to choose the one or two best options from a number of possibilities. It is not unusual that in a group some members will very easily diverge, that is build a list of alternatives, while others will converge very fast by trying to select the best solution from the list and the rest will be passive not knowing what is required of them. Hence the need of a facilitator, he or she designs a clear and visible process to align the group. In Chapter 2, it was shown how these processes are included in the Vision Conference.

6. The CPS (Creative Problem Solving) Process

Osborn (1953) described several basic steps to support groups and individuals to be more successful in creative problem solving. Later, based on these proposals, several researchers have formalised and extended these ideas into a systematic approach to creative problem solving known as the CPS model or process. 4-steps, 5-steps and 6-steps models have been proposed. Here we present the most general version. It is called the 6-diamond model, where the upper part of each diamond represents the divergent sub-processes and the lower part corresponds to the convergent sub-processes:

- *Mess finding:* Identify areas of concern. Generate ideas about possible problematic situations from a holistic viewpoint. Identify the three most critical and general problems. Select one for further work,
- *Fact finding:* Observe carefully, like a video camera, while collecting information and data about the problem situation. Both objective facts and subjective experiences should be collected, explored and identified,
- *Problem finding:* Fly over the challenge or the problem by considering different ways of regarding it. Think about those possibilities,
- *Idea Finding:* Search for a variety of ideas, options, alternatives, paths, approaches, manners, methods and tools. Select potential solutions or ideas,
- *Solution finding:* Dig about the ideas in new and different ways, from other viewpoints and criteria. Assess the consequences, implications, and reactions to the selected ideas. Select ideas and solutions to develop an action plan, and
- *Acceptance finding:* Develop ideas about how to implement the action plan. Search for ways of making the ideas or solutions more attractive, acceptable, stronger, more effective, and/or more beneficial. Develop a working plan for implementation.

Project Title: Managing Community Change through CPS – A Case Study of the Burchfield-Penney Art Center (BPAC)

Rationale and Questions: Creative Problem Solving (CPS) is a proven method for facilitating change. CPS facilitators have frequently put to use the framework that guides CPS in developing action plans for large group initiatives. The outcomes of these action plans have not been well documented. This project will document how CPS was modified to approach a community-based project. The questions that will guide this study are:

- How to use CPS to facilitate change in a community-based project?
- Why was CPS perceived as being useful in a community-based project?
- What was the value of using CPS in this community-based project?
- In what ways did CPS enhance the BPAC outcomes as part of these initiatives?
- What steps need to be taken when implementing CPS in a large scale?

Statement of Significance: To enrich the success of building a new BPAC museum, curator Ted Pietrzak decided to implement the CPS process. This case study will highlight the reasons why CPS was selected as a process method to assist this project. As limited documentation is available today for community based CPS projects, this case study will serve as a research source. The breadth of this research will record the steps of the CPS process in 1) building and understanding real world community-based relationships, and 2) will follow and study the success of the CPS process with the new BPAC museum. Project results will be important as an instructional resource for the Creative Studies department and students. Documentation will be gathered from various perspectives including the college, community, architect and BPAC staff. This project will serve as a model of the CPS process for other similar projects. Finally, this research may demonstrate a process model on how-to construct a new museum utilizing CPS.

Description of the Method and Process: This qualitative case study will reconstruct the steps taken to identify what happened in the CPS process. I will analyze how CPS was implemented through a triangulation of sources including facilitators, planners and committee members. The following steps will be used:

- Participate in the meetings of a committee for experiential learning;
- Collect supporting CPS process data for planning the new BPAC including documentation and reviewing meeting / planning notes;
- Select interview participants from those who supported the use of CPS;
- Create and distribute debrief sheets to all facilitators of the process;
- Complete interviews of selected participants and facilitators; and
- Meet with the Creative Studies program director to investigate how-to create new action paths for the department from this case study.

Learning Goals: To help me gain experiential learning in the following ways:

- To understand the breadth of the CPS process in a real world intervention
- To learn how I can become a better facilitator by initially identifying the client(s) vision statements
- To become well-versed in the benefits of CPS as a practitioner

Outcomes:

- A case study report
- CD-ROM of the photographs that captured the CPS process
- A summary of usefulness to include the value of CPS application
- Ideas for a summary piece of art from the brainstorming sessions
- An Executive Summary
- Ten Creativity Based Information Resources (CBIR) annotations

Box 6. See further www.buffalostate.edu/orgs/cbir/ Readingroom/conceptpapers/Billokkc.pdf

Box 7 shows the different types of creative sub-processes that are needed at each step of the 6-diamond model.

Mess finding: Fluency, flexibility, originality, deferred judgement, and evaluation
Fact finding: Analysis and evaluation.
Problem finding: Synthesis.
Idea finding: Fluency, flexibility, analysis, originality, and deferred judgement.
Solution finding: Synthesis, elaboration and evaluation.
Acceptance finding: Synthesis, evaluation, originality, and flexibility.

Box 7. Creative sub-processes at each stage

As we can see at all these stages creativity tools can be used, but depending on the problem or the situation under study, other both "hard" and "soft" rational methods can also be applied especially in the convergent phase of each step in the CPS process.

Depending on the size and complexity of the problem the whole CPS process might take a long time. During this process the group at some stages will need a facilitator, an expert, or a supervisor to support the different types of decisions to be taken. These are some of the roles I will play as the adviser or mentor of a group of students at the university working on theses or projects. On the other hand, a very important aspect in this respect is learning. The use of creativity tools and the CPS process can be learned by every person that has a "proactive" stance to life because of their simplicity many of these tools can be used in everyday life. Children at school and elderly people can creatively empower their life by being proactive instead of reactive

In practice, as a problem solver and /or as a facilitator, you need a very important skill: Intuition (Goldberg, 1983). Intuition is usually defined as the sixth sense, the power of knowing, or knowledge obtained without recourse to inference or reasoning. It is important to emphasise that intuition is not something contrary to reason but something outside the province of reason see further Box 8.

Intuition is an unconscious form of knowledge. It is immediate and often not open to rational/analytical thought processes. Intuition differs from an opinion since opinion is based on experience, while an intuition is held to be affected by previous experiences only unconsciously. Intuition also differs from instinct, which does not have the experience element at all. Intuition is trans-intellectual, while instinct is pre-intellectual. A person who has an intuitive opinion cannot immediately fully explain why he or she holds that view. However, a person may later rationalize an intuition by developing a chain of logic to demonstrate more structurally why the intuition is valid. Intuition is one source of common sense. It can also help in induction to gain empirical knowledge. Sources of intuition are feeling, experiences and knowledge.

Box 8. From Wikipedia, the free encyclopedia

7. The Simplex CPS Approach

Simplex is a group process for finding and solving problems; identifying and overcoming challenges; and establishing and achieving goals. Use of Simplex allows individuals and organizations to be creative, innovative and to succeed in a world where fast-paced change is the order of the day. The Simplex process has been developed over a number of years by Basadur (1995) and is being used by many business and technological organizations in North America,

Simplex is a "complete" process of creative problem solving with four stages and eight discrete steps. The process provides a framework for using various tools. Simplex is represented as a wheel to reflect the circular, perennial nature of problem solving.

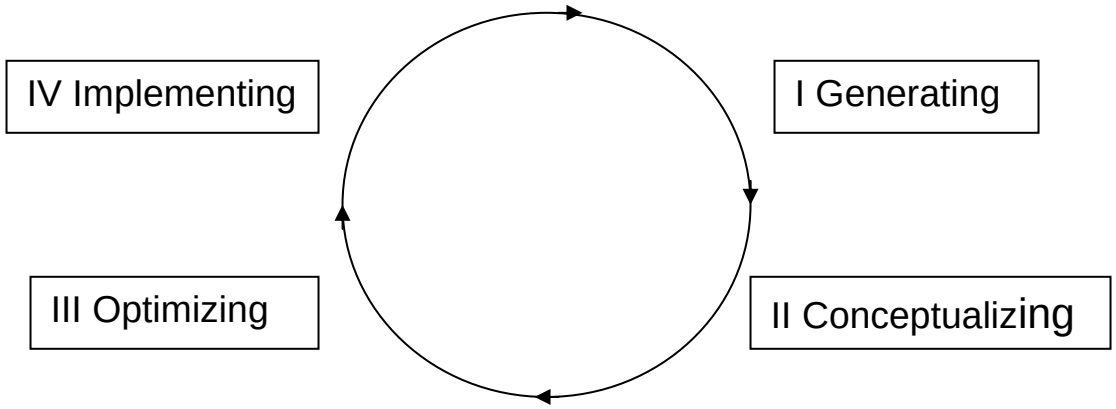

Figure 3. The Simplex creative process

Its four stages and eight steps include:

Stage I Generating: Creating options in the form of new possibilities/problems that might be solved and new opportunities that might be capitalized upon. It is composed of two steps:

- Problem finding, and
- Fact finding,

Stage II Conceptualizing: Creating options in the form of alternate ways to understand and define a problem or opportunity and good ideas that help to solve it. It is composed of two steps:

- Problem defining, and
- Idea finding,

Stage III Optimizing: Creating options in the form of ways to get an idea to work in practice and uncovering all the factors that go into a successful plan for implementation. It is composed of two steps:

- Evaluating and selecting, and
- Action planning,

Stage IV Implementing: Creating options in the form of actions that get results and gain acceptance for implementing a change or a new idea. It is composed of two steps:

- Gaining acceptance, and
- Taking action.

Three skills are required for participants to use the creative problem solving process at each stage effectively: divergence, convergence, and the deferral of judgment – the ability to consciously separate the two previous steps. And obviously, many of the creative tools we have discussed previously can be used at each step of the Simplex CPS approach.

8. Final Remarks about CPS

More than fifty years ago, Osborn (1953) introduced creative tools and a model for solving problems in creative ways. Since that time, this model, called Creative Problem Solving, has become one of the most widely used approaches for nurturing and applying creative thinking. Some early research by Torrance (1972) showed that CPS was one of the most widely adopted models in educational programs that empirically examined the extent to which creative thinking could be taught. His research also showed that CPS was the most effective method for enhancing creative-thinking skills.

Since its inception, CPS has undergone numerous revisions. Originally, this work was undertaken by Parnes (1997) and his colleagues, and more recently by Isaksen and his colleagues (Isaksen et al, 1994). CPS has also spawned other process models, such as Simplex (Basadur, 1995). Recent developments in CPS have transformed the model from a more *prescriptive* to a more *descriptive* process approach. In fact, the Simplex version of CPS possesses metacognitive attributes and thus has been referred to as the metacognitive view of CPS. As a prescriptive model, CPS had a linear aspect in which all challenges entered the process at a common front-end stage. Once into the process, work progressed, without deviation, through the same series of stages, regardless of the characteristics surrounding the challenge.

Today, as a descriptive process, CPS can be entered into at any stage, and the stages and tools are then applied in a flexible manner according to the specific needs of the task. We have seen that the Simplex version of CPS is organized into four stages and eight steps. In addition to these stages and steps, CPS contains many tools which can be used interchangeably within any of the stages. These tools are selected according to the needs of the task and are either divergent (i.e., used to generate options) or convergent (i.e., used to evaluate options).

To fully understand the metacognitive feature of CPS, it is necessary to discuss the preparation (design and planning) that precedes the use of CPS, whether applied individually or in a group. There is an explicit component that guides this preparation called Task Appraisal and Process Planning. This component adds the metacognitive feature to the CPS framework and thus, provides a departure from previous versions. To

further explore this feature of the CPS process, it may be helpful to provide a definition of metacognition.

Metacognition has been described in two ways: "knowledge about cognition" and "regulation of cognition". Knowledge about cognition refers to information about one's own or someone else's cognitive processes. Regulation of cognition refers to the planning, monitoring, and checking activities necessary to orchestrate cognition. With this definition in mind, lets us now turn to a discussion of Task Appraisal which includes four elements: (a) personal orientation, (b) desired outcomes, (c) situational outlook, and (d) CPS methodology (Isaksen et al., 1994).

Personal orientation involves determining who owns the task and the degree of ownership; desired outcomes involves defining what outcome(s) the owner(s) would like as a result of using CPS; situational outlook entails assessing the background circumstances and present environment surrounding the task; and CPS methodology includes a determination of the appropriateness of CPS for this particular task based on the previous three elements. When a facilitator uses CPS with a client, all four of these factors are explored before CPS is applied to the task.

This exploration involves extensive questioning so that the facilitator can gain a working knowledge of the client's thoughts, feelings, and desires surrounding the task. Ideally, Task Appraisal is not complete until the facilitator believes he or she has elicited both "stable and stat able information" which may be representative of the thoughts, feelings, and desires of the client. In other words, through questioning and discussion, the facilitator may gain "knowledge about cognition"; the cognition of the client. The end result of Task Appraisal is to determine if CPS is the appropriate method given the client's thoughts about the task.

Given this view, Task Appraisal appears to have features in common with the first of the two elements of metacognition. If the Task Appraisal indicates that CPS would be useful, given the client's perception of the task, then the next step for the facilitator is to engage in Process Planning. The purpose of Process Planning is to determine where to enter the CPS process and which tools to use so that the task evaluated in Task Appraisal is properly attended to. This implies adhering to the thoughts, feelings, and desires of the client. Given the explicit planning aspect of Process Planning, there appears to be a direct connection with the "planning" element within the definition of metacognition above.

However, in what ways does CPS relate to the "monitoring" and "checking" features of the given definition of metacognition? During a CPS session, the facilitator is in direct contact with the client and the work group and thus, has an outstanding vantage from which to monitor the process as it unfolds. One technique used to do this is to check in with the client to determine if the direction of options, during a divergent thinking phase, is going in the right direction. If it is not, the facilitator may suggest another approach that could assist in the proper generation of options that may be more relevant to the thoughts, feelings, and desires of the client. In this way, as well as others, CPS may

possess the "monitoring" and "checking" features of the given definition of metacognition.

9. Other Approaches

Let us shortly present other popular creative approaches to problem solving.

Synectics (Gordon, 1961)

This approach to creative thinking depends on understanding together that which is apparently different. Its main tool is analogy or metaphor. It is an advanced brainstorming. The approach, which is used by groups, can help participants develop creative responses to problem solving. It helps users break existing minds sets and internalize abstract concepts. The facilitators can use Synectics in group work by leading the participants to:

1. *Describe the Topic:* The facilitator selects a word or topic then asks the participants to describe the topic, either in small group discussions or by individually writing a paragraph.
2. *Create Direct Analogies:* The facilitator selects another word or topic then asks the participants to generate a list that would have the same characteristics as those words or phases listed in Step 1 (a direct analogy is set up to make comparisons between the two words, images, or concepts).
3. *Describe Personal Analogies:* Have participants select one of the direct analogies and create personal analogies. Participants "become" the object they choose and then describe what it feels like to be that object.
4. *Identify Compressed Conflicts:* Ask the participants to pair words from the list generated in Step 3 which seem to contradict each other. Always have the participants explain why they chose the words, which conflict. Then have the participants choose one by voting. How are auditory symbolism and personal inclination different?
5. *Create a New Direct Analogy:* With the compressed conflict pair voted upon by the participants, ask them to create a different direct analogy by selecting something that is described by the paired words. How are auditory symbolism and personal inclination like a painting, poem, movie, political party, etc.?
6. *Reexamine the Original Topic:* Return to the original idea or problem so that the participants may produce a product or description that utilizes the ideas generated in the process. They may concentrate on the final analogy or use analogies created in the other four steps.

Synectics puts into action the idea of making the familiar strange. It is a method for a group of individuals working on a problem in an unconventional manner. The technique emphasizes the non-rational elements of thinking in the anticipation that such an approach will provide a novel and a fresh outlook on a problem. The use of metaphors cultivates the employment of material which on first sight seems totally irrelevant to a problem.

Sociodrama

Sociodrama is a way of simulating what happens in life in order to: explore social issues; develop greater understanding between groups and individuals; problem-solve and make

decisions; experiment and try out new options; rehearse new roles and strategies and predict outcomes. Sociodrama is concerned with social learning and problem solving in a group by dramatic methods. A sociodramatist will base their work around an understanding of the roles people play, the systems within which they work and the social forces which impinge on the situation being examined.

By using role reversal, doubling, sculpting and role playing within a number of different scenes, sociodrama is based on many of the principles of adult learning: it draws on people's experiences; is relevant to their concerns; it engages people in the learning process and follows the learning cycle of people being involved in a learning experience, which they have time to reflect and theorise upon afterwards before planning new actions. Sociodrama is a very useful creative tool to deal with conflicts in organisations.

Sociodramatists are always concerned about the wider social, political and economic influences operating in any particular situation. The real world doesn't always work according to text book formulae. People make decisions from a combination of external and internal factors and sociodrama gives people the opportunity to explore these different facets.

In the context of education, sociodrama can be used in teaching to enable students to explore situations from a variety of viewpoints and gain a better understanding of why decisions were taken and what other options were on offer. See further Sternberg and Garcia (2000).

Storytelling Workshops

The purpose of this workshop is to use stories to build common understanding of a problem. When people participate in a common experience, many assume that there is shared meaning about that experience. We will invite participants to explore a situation from individual points-of-view with the intention of gathering collective information. Through personal stories we will build a group story about a problem. Then we can unravel the collective story to identify the underlying strands that define the problem.

The session will uncover about the problem:

- Shared history,
- Myths that exist,
- Assumptions held by individuals,
- Unique points-of-view,
- Archaeological foundations that are the underpinnings, and
- Existing/pre-existing roles.

The intended results of the session will be:

- Mindset focused on hidden problems,
- Patient listening to others' stories,
- Deepened learning/thinking,
- Talking in the "and" mode,
- Expanded examination of what a problem contains,

- Option-oriented thinking,
- Involved parties at one "table",
- Suspension of judgment, and
- Creating a container for the problem and problem solvers.

The session will create a space to learn, inquire, and reflect to enable the problem definition to emerge from the stories told. The purpose of this workshop is to use stories to build common understanding of a problem.

When people participate in a common experience, many assume that there is shared meaning about that experience. We will invite participants to explore a situation from individual points-of-view with the intention of gathering collective information. Through personal stories we will build a group story about a problem. Then we can unravel the collective story to identify the underlying strands that define the problem. See further the book of Allan et al (2002).

Disney's Strategy: For turning dreams into reality (Dilts, 1991)
According to this method a creative person should be: a Dreamer, a Realist and a Critic.

This method follows somehow the following steps:
1. Go into Dreaming Mode
Step into the space you have chosen, where you can dream away to your heart's content. Dreaming is all about pictures in your mind's eye; so you will be standing upright, and your eyes will be up - because that is where we file pictures, in our brains. The trick, in this space, is to allow your dreams to be as crazy as they want to be - this is just the dreaming space: your realist and your critic will have their turn in due course - so let your dreams run riot! When you have dreamed the ultimate dream, step out of that space, and choose another space.
2. Go into Realist Mode
In the realist's space, you are going to become the logistics expert. What is going to have to be done, in order to achieve this dream? What resources will you need to provide? What modifications need to be made to the dream, in order to make it achievable? In this space, you will be detached from the dream, and have your feet firmly on the ground. It is practical questions you are dealing with here. When you have worked out how to achieve each step, and made all the necessary modifications to the dream, step out of the realist's space, and move to the critic's space (an equal distance from the dreamer and the realist - in other words: the critics space forms the third angle of an equilateral triangle).
3. Go into Critic Mode
The critic has a very important job. He/she is there to make sure you do not make a complete fool of yourself; lose all your money; get sent to prison, and so on. The critic's advice is vital: the critic's job is to keep you safe. Most of us try to ignore our critic - which he or she may well become. Whatever you say or do, your critic will persist in trying to keep you safe, so it would seem sensible to pay attention in the first place! The critic's job is to think up everything that can possibly go wrong with your master plan; and every possible bad side effect - so that you can be prepared for anything. In critic mode, you may find you have your hand by your mouth, as you talk things through with

yourself. You may be looking down, towards the hand you do not write with, as you discuss yes/no questions with yourself. Once again, you are detached from the dream. And, most importantly, it is the dream you are criticizing, not the dreamer. Listen carefully to everything that comes up, and be prepared to modify the dream still further. For example: your realist may have worked out how to fly a pair of red knickers from the top of the church tower, but you need to pay attention to the critic's warnings that this may upset not only the church, but also your friends and neighbours. Ask yourself what your outcome is for flying the red knickers. How can you achieve this outcome without upsetting the people you do not want to upset? Then you can modify the dream accordingly. When you have dealt with everything to the critic's entire satisfaction, move on to.

4. Back into the Dreaming Space

Dream the modified dream. What does it look like? Does it still achieve what you want to achieve in its more workable form? Test it out. Dream some more: now that the original dream is more workable, what other ideas come up? Once again, allow yourself plenty of time and space. Then move on.

5. Back into the Realist's Space

Now apply your practical, logistical mind to the modified dream. How are you going to achieve it?

6. Back into the Critic's Space

The dream has been modified according to your suggestions (and maybe more has been added), and the realist has worked out how to achieve it. So what do you think of it now? Is there anything else you are not happy with? Talk it through with yourself and, once again, pay careful attention to anything that may come up. If there is anything new, go through Steps 4, 5 and 6 again, until all three of you are completely happy with the whole project. And, when this is so, move on to.

7. Getting Your Act Together

You have been playing three different people in order to separate your project into its component parts - rather than having all your thoughts swirling around your head in a muddled mass. Now is the time to get it all together. You are going to turn your triangle into a circle by walking through the three spaces four or five times, to bring each task - and the thoughts and attitudes that go with them - back into yourself. You might like to sing a song, as you walk the circle - to distract your conscious mind, and allow your unconscious mind to absorb and enjoy all the benefits you have received from your dreamer, your realist and your critic.

You are now all set to turn your dream into reality.

9. Further Remarks

Creative tools and methods can be useful in problem solving specially in situations where the problem identification, formulation and solution are found by creating options. There exist in the literature a huge amount of creative tools and methods. A complex problem in practice is the selection of the most suitable tools for a designed problem solving process.

In this chapter, the best known and most popular tools and methods have been presented and classified, enhancing their advantages and outlining some of their weakness.

Selecting a suitable method or a set of methods is a decision problem that has to be solved in a creative way. This is part of the art of problem solving.

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http://members.ozemail.com.au/~caveman/creativity/index_htm/
http://www.thinksmart.com/
http://www.creax.com/creaxnet/creax_net.php/
http://www.creativity-portal.com/

CHAPTER 6

THE FUTURE WORKSHOP

Do not go blindly into a future
shaped by a tiny elite.

1. Introduction

In general, to change or transform the actual situation of a system you can use two main approaches:

- First to criticize the actual situation, them to dream about a preferable future situation, and finally to find ways to move from the actual situation to a preferable one; or
- First depict a future preferable situation, then analyze the actual situation, and finally find ways to move from the actual situation to a preferable one.

The Future Workshop (or FW for short) belongs to the first category of approaches. It emphasizes: critique, learning, team work, democracy, and empowerment. This makes FW as a method suitable to support oppressed groups that are struggling for a better living and a better Society. FW has analogies to the sociological school known as Participative Action Research (Whyte, 1991). This can be seen in its focusing on facilitated and participative group processes to deal with real-life problems. FW has been developed as a method to support the political struggles of community groups for a better enforcement of their interests to create a better future worth to live for. The creator of this method, Robert Jungk, wanted to enable and support the development of social fantasy that should lead to conflict resolutions that can be turned against the business-as-usual and the profit-seeking of the establishment. FW seeks to support group creativity and to create group *synergy* for individuals that are in the same oppressed situation.

FW is a very popular method used in many different situations. This method has been used in communities, municipalities, NGO´s and small firms. Unfortunately, most applications have not been reported in accessible journals or publications. There is a lot of literature in German and Scandinavian languages, but in English there is only one book that is not easily accessible, Jungk and Müller (1987).
The main purpose of this paper is to give a practical and theoretical insight to FW, enhancing both practical guidelines to carry out such a workshop and methodological reflexions. The main purpose is to make this fundamental introduction so self-contended that the reader should be ready to organize or participate in a FW.

In Section 2 the origins of FW will be outlined. The five phases of FW approach will be presented in Section 3. Practical guidelines to carry out FW will be introduced in Section 4. Limitations and problems of the method will be outlined in Section 5. A real life application of the FW to discuss the future development of a small community is the theme of Section 6. Finally the last section presents some conclusions.

2. Origins

Originally the idea and approach behind FW started in the fifties. Robert Jungk (1913-1994), an Austrian writer and journalist, organized in this time structured meetings for a group of citizens with some join problems. The main purpose was to activate a basis, which through a join critique of the establishment was able to develop a proposal for a desirable future. The idea is that a group of people should cooperate to create ideas and strategies for the future. Therefore the name Future Workshops, this is a direct translation of the German name “Zukunftswerkstätten”.

Jungk, the father of FW (see Box 1), has been inspired to design this approach from three main sources. First, socialist principles related to democratic, participative, and collective decision making by critical citizens that will become emancipated individuals, becoming their own attorneys before the state. Critique exposes, reveals, and unmasks the actual situation. Therefore, FW starts with a critique phase. Jungk worked as a film producer in the Spanish Civil War where he collaborated with anarchist socialist groups in their programs to design non-hierarchical, decentralized, and collective decision-making processes. Secondly, Jungk was inspired by Alex Osborne (1953), an American researcher of creativity and innovation, and his work on creative problem solving. Osborne developed the well-know brainstorming technique, this technique is used in the second phase of FW, the fantasy phase. And thirdly, suitable methods used to create and develop new ideas. These methods are based in the activation of the intuition of individuals, synergy effects in groups and critical potentials that can contribute to the creation of an alternative. The first applications of the concept in FW were used in Germany in the seventies as a tool in the political fight of civil action groups for a better enforcement of their interests to create a future worth to live for. FW were used by community groups in municipalities, local centres, trade unions, etc., where it was experimented with this form of social activity to create social fantasy in a problem solving process.

FW has developed in the practical world and not in academia. A huge amount of real-life applications, evaluations and experiences over a long period of time has contributed to its final shape. Jungk writes (Jungk and Müller, 1987) that the first workshops were not successful. It is first when in the political arena of European democracies concepts as citizen initiatives and citizen influence were present that FW were used in practice. Jungk mentions as a good example 28 workshops carried out in Nordrhein-Westfalen with the participation of around 500 people. These workshops were organized to get ideas about the design of human-friendly information and communication.

FW is primarily used by local groups to deal with local problems and find alternative solutions to the one proposed by the establishment. FW is usually denoted as a “green” method because of its wide application to environmental issues and problems. Later, it has been introduced in innovative firms that want to practice a more democratic and creative management style. Now this method is around fifty years old, but the emancipating approach making use of creative working processes and using facilitation technique is by no means out-of date. More recently, FW has been used as a working method of self-controlled learning and a method applicable in the design of new systems, processes and artefacts. The fundamental idea that FW should be a tool in the social development of communities is still alive.

During the last years FW has been used by firms and public institutions, hierarchical and non-democratic organizations, in their planning activities. Here the concepts of empowerment and social learning are not always present. These workshops are often just legitimating the decisions already taking by the leaders of these organizations.

When Hitler came to power, Bob Jungk was a 19-year-old student in Berlin. Following the Reichstag fire he was arrested for anti-Nazi activities and deprived of his citizenship. With luck and the help of friends he was released, went to the Sorbonne in Paris, but later returned to Germany to work for a subversive press service. Before long he was forced to flee to Czechoslovakia. The fall of Prague took him to Paris and the fall of Paris took him to Switzerland. Even here he was jailed for his outspoken condemnation of the Nazis. After the war he returned to Germany, took a degree at Zurich and travelled widely.

From that time on, Jungk set his hand against oppression in all its forms. By 1952 he completed Tomorrow is Already Here, book highly critical of the emerging uses of advanced technology in America. But the focus of his subsequent work turned upon a trip to Hiroshima in the early 1950s. It was here that he met a number of people who were dying of radiation sickness. The major themes of his life's work were forcefully impressed upon him: the power and potential destructiveness of modern technologies, the corresponding need for careful foresight and the constant struggle to preserve human qualities in the brave new post-war world.

His work seems to fall into perhaps three broad phases. First was the painstaking research on nuclear issues, both military and civil, emerging in books like Brighter Than a Thousand Suns and The Nuclear State. There followed a later period spent looking for, and developing, ways of responding to the challenge. This produced The Everyman Project and, much later, Future Workshops. During this time he was one of the founders of the World Futures Studies Federation. He was the President (and one of the inspirations for) the London-based Institute for Social Inventions, now a well-established seedbed for innovative ideas.

In later years he became a kind of 'elder statesman' of the futures field, and an inspiration both to fellow futurists and many other people. In the late 80s he persuaded the city of Salzburg in Austria to support the establishment of the Robert Jungk International Futures Library. Here in elegant rooms overlooking the fast, grey river that bisects Salzburg, he founded one of the great repositories of futures material in the world. He later ran for president of Austria and suffered much personal abuse.

He did as much as any, and more than most, to identify the central dangers of this most dangerous of centuries. It is therefore no exaggeration to describe him as a kind of 'one-man' revolution.

Jungk's view was that if people use the powers that are available to them, then the future, as a 'place to live in', is far from being lost. He denied being an optimist, and claimed to be 'a pessimist who still believes that not everything has to be bad'. He felt that the important thing was to create contexts for social innovations; places where people can take ideas. 'From these seedbeds emerge the projects, the real practical changes that over time move our civilization from its present self-destructive course.'

Robert Jungk, the Austrian honorary President of the London Institute for Social Inventions, died in July 1994

Box 1. Extract from Global Ideas Bank (http://www.globalideasbank.org/)

3. FW's Phases

A "classic" FW, according to Jungk and Müller (1987), consists of five phases:

- *The preparation phase:* Here the themes, the invited participants, the methods, their rules and the time table of the workshop are settle by the organizers of the workshop and the facilitators. The room and local facilities for the workshop are settled.
- *The critique phase:* Here the problem is critically and thoroughly discussed and investigated. Brainstorming is the preferred creative technique follow up by a structuring and grouping of ideas in some main sub-themes.
- *The fantasy phase:* Here the participants try to work a utopia, to draw an exaggerated picture of the future. Brainstorming and other creative technique might be used. The social fantasies of the participants are developed in this phase.
- *The implementation phase:* Here the ideas found are checked and evaluated in what concerns their practicability. An action plan is elaborated.
- *The follow-up phase:* Here the action plan is monitored; eventually changes are performed and if needed new FW's are planned.

The preparation phase

This phase is concerned with the organization, planning and management of the workshop. This is a crucial phase because many problems that arise during the workshop are usually due to bad planning, poor organization and/or unsuitable physical environment.

Central questions in this phase are: Who are going to participate? What is their background and motivation? Should we invite some special groups? Should FW be totally open or the participants should be invited? How long time should be the duration of the workshop?

Thereafter, suitable locations and rooms should be found. It is recommended that the room is suitable adapted to the group creating a cozy, informal, and inspiring atmosphere. Different materials should be available: paper, pin boards, pencils, tape, 3M Post-It blocks, copy machine, transparencies, lab taps, projectors, toys, etc. Fruits, cakes, soft drinks, tea and coffee should be available during the pauses. This demand of a suitable working environment is not a special demand of FW, but many other forms of workshops and conferences give similar guidelines.

Another important issue is the specification of the theme or the problem that FW will be focusing on. The formulation should be carefully discussed by the organizers of the workshop and the facilitators. Ambiguity should be avoided. The question: Is FW an appropriate method to deal with the situation on hands? should be carefully discussed.

Moreover, it is important that the participants should be well-informed about the purpose and principles of FW, so that they will feel easy and positive by participating on the workshop. It is advisable just before starting the FW, to plan a simple warm-up exercise for all the participants.

A very important assumption of FW is that all the participants are equal in the democratic problem solving process. This assumption has to be checked in each situation because is

not easy to implemented in practice. Participants have usually different background, education and experiences and it is not unusual that power relations will be created that have influence in the group working process. It is the task of the facilitators to manage the democratic problem solving process.

In the year 1998, I was going to give a new course: Creativity and Problem Solving. I did not known exactly how to structure this new 14-week course of 4-hour per week. I invited 14 students to my summer house for a 3-day FW. The theme was: the design of a creativity course for engineers. I secured, with the help of two students, that all facilities, materials, food and soft drinks were available. The day we went to the summer house everybody was very enthusiastic about participating in such a workshop.

The critique phase

This phase will draw out specific issues and problems in questions; the objective is to establish a critical understanding of the theme and the problems in question. In a first step, a visualized brainstorming is carried out and a general and critical question concerning the problem is framed. The critique points will be written down in 3M-post it's or in big sheet of papers. In the classical FW all participants write down the points on a big sheet of paper lying on the ground or on a table. Later, the points are cut out and grouped. This method creates a stronger nearness than isolated note writing. Usually, this idea generation is made in groups following the brainstorming rules: criticism is ruled out, free-wheeling is welcomed, quantity is desired, and combination and improvement is sought.

In a second step, the results found are written down and systematized in clusters accordingly to topics, each cluster is entitled. The modern structuring technique known as Mind Mapping has shown to be very useful here. The whole Mind Map will be shown in a pin board or in a large wall.

In modern creativity terminology the first step is called the divergent process while the second step is the convergent process (see Chapter 5). In FW the divergent phase is supported by the brainstorming technique, but other techniques can also be used by the facilitator depending on the experience of the group and the problem in question. The convergent process can be supported by different tools as matrices, lists and maps. The advantage of Mind Mapping is that the whole situation can be visualized. Then, a topic could be taken again for a further divergent process; this will mean only the extension of the Map. All creative processes are composed of a divergent and a convergent process. It is the task of the facilitator to manage these processes and to allocate suitable time to them. Some groups do not like to diverge and want to converge as fast as possible (for instance businessman) while others do not like to converge (for instance artists).

It is always surprising to see the number of topics and ideas generated for each topic after one hour brainstorming. It is impossible to continue the workshop working with all topics and ideas; therefore a prioritization of the importance of each topic by the participants is needed. If through dialogue it is not possible to agree on a prioritization a simple votation system is recommended.

We began Friday afternoon, by going running to the forest. We ended bathing at the beach. After eating, we began with a 3-hour critique phase. All students were presenting in short form all the bad experiences they have had following courses at the university. Brainstorming was used for this divergent process. There were many ideas. They were structured using a Mind Map in the convergent process. Ideas were then categorized as: to be definitely avoided, to be avoided, or it cannot be avoided but we should find ways to deal with it.

The fantasy phase

This phase is also partitioned in two steps: a divergent and a convergent process. In the first step all participants try to create a utopia, to draw an exaggerated picture of future possibilities. Generally known solutions should be avoided and non-verbalized and intuitive knowledge should be enhanced. The participants should suggest solutions without reflecting about restrictions, traditions or other barriers, that is search for unconventional solutions. Suitable creative tools could be introduced as: fantasy trips, meditation, medial support, role plays metaphors, picture stimulations, story telling, etc. Central questions are: What would we do, if there were no constraints, plenty of resources, and no restrictive laws…? What would we do, if a fairy fulfils us all our wishes? One can also begin by turning the critique points into their opposite (negation of the negation). From this point of departure, the participants can use brainstorming techniques and creative games to discover and to reflect utopian ideas. It has been found that brainwritting can be more suitable at this step than the traditional brainstorming. The ideas and solutions found are collected and put in a bank of ideas, regardless of their practicability. It happens that ideas that are unrealistic today might be implementable in one or two years time due to radical changes in the economic, social and political environment.

In the second step, the most promising ideas have to be transformed, that is, they must be reduced to a possible and realizable core. Ideas have to be prioritized after a common analysis and evaluation. A SWOT matrix could be used to evaluated ideas strength and weakness as well as the possibilities and risks in connection to the problem to be solved. Mind Mapping could also visualize the different elements of a solution as well as its interrelation to other solutions.

On Saturday, at breakfast time, many students were talking about their dreams. Most of them have been dreaming about bad and good teaching experiences. During the morning a divergent process was carried out using different creative techniques: brainwritting, storytelling, picture stimulation. After a 2-hour break for lunch and walk out in nature, the convergent phase started. Different Mind Maps were elaborated for the best ideas. Many of the ideas were related to form, content or the structure of such new course. Some propositions were easy to implement while others demanded some extra resources. At night after dinner three groups were established one should make a performance, the second a song and the last one a game. After one-hour work all groups performed. It was really fun.

It is in this phase that the social fantasy of the participants is developed and synergy effects in the group are reached. Ideas, proposals and solutions are achieved in a creative and innovative way. These results will not have been found following a rational problem solving approach. This has a creativity promoting effect, because in FW, in a very relaxed atmosphere, far away from the stress of everyday life and profession, expression forms can be found and ideas and solutions may outcrop which could possibly not be discovered by using a direct and rational approach.

The implementation phase

Here the ideas from the last phase have to be seen with more realistic eyes and have to be adapted reality, to achieve suggestions for one or more projects that are possible to implement. This phase is composed of several steps.

First, all the ideas of the data bank are further discussed to assess the probability of that solution or idea of being implementable. If there are many ideas one has to select the most promising for further study. These are done by discussing each utopia and eventually modifying them to make them more probable to be implemented.

After these critical evaluations probably more information is required in form of expertise from different areas: economical, technical, social and political. This supplementary knowledge is added to the further evaluation of how realistic and probable is the implementation of a given project.

The next step is to formulate clearly the most promising ideas in form of maps and diagrams. Moreover, a SWOT analysis could be carried out for each project with the purpose of developing an implementation strategy. The strategies should visualize the economic aspects and the political reactions caused by the selected projects. The most promising projects are selected. Finally this step end with an Action Plan that specifies: Who does what, where, when and how?

On Sunday morning the work was concentrated in the design of the creativity course including as many ideas as possible that were suggested in the fantasy phase. The 14-week course was divided in three sections: first, introductory lectures about relevant topics with practical exercises to train some tools (4 weeks); secondly. oral presentations by the students about creative methods (4 weeks); and students work in a project whose results will be presented the last day of the course at a conference (6 weeks). It was agreed that from the beginning the students should be part of a group of 4-6 individuals. It was also suggested that some guest lecturers with some special expertise should be invited. By lunch time, a complete detailed course was designed. My role was manifold: I was going to be the teacher of the course so I could refuse to crazy or expensive ideas; I was the facilitator of the group work and I also was an expert due to my knowledge of the field creativity and problem solving processes. FW ended with an evaluation of the whole workshop and the different processes. The general conclusion was that the workshop was a very positive experience, everybody has learned something, and everybody was ready to organize another workshop.

The follow-up phase

FW should end with an agreement of the elaboration of a report that collects all the achieved results and presents the action plan. Such a report should first be send to all participants. After the conference ends, the facilitators prepare a report which is sent to all participants and the board of the organisation in question. This report contains:

- The complete ideas, projects, visions and objectives produced by each sub-group in both the divergent and convergent phases of the conference; and
- An evaluation of the different processes and activities carried out at the conference (the learning process and group dynamics).

In addition the workshop should end with an evaluation by each participant of the working process that has been gone through (see further Chapter 2). The central questions are: What was good? What was bad? What did we learn? How can wee do it better next time?

If it is needed, it is also possible to discus the idea of organizing another workshop for some specific issues. This is getting close to the idea of a permanent workshop. Another important activity is the question of communicating to the external world the achieved results; this can be done by writing about FW in the newspaper or contacting another media.

The main phases of this workshop are summarized in Box 2.

Critique phase

- Generate and collect critique issues (brainstorming)
- Structuring (clustering of ideas using Mind Mapping)
- Evaluation, Focusing, Prioritization

Fantasy phase

- Imaginative warm-up (fantasy plays, storytelling, games, meditation…)
- Turn critique into the opposite (negation of negation)
- Generate ideas (brainwritting)
- Analysis and elaboration of great ideas
- Register the ideas in a bank of ideas

Implementation phase

- Evaluate the register ideas
- Formulate in concrete terms the best ideas
- Choose the very best ideas (prioritizing)
- Action plan

Box 2. The main phases of FW and their central activities

The course on creativity and problem solving started in year 1998 following the same structure and content as developed in the workshop. Several evaluations show an enormous positive enthusiasm by the students about such a course. Some of them have for the first time experienced collective learning, team work, student's emancipation, responsibility for his own learning and a teacher being a facilitator, and expert and a supervisor. The many comments of the students have caused small improvements every year. The students are coming from many different countries from Europe and also some few outside Europe. They expressed that in their universities they did not have such a course. This multicultural aspect has given a new dynamics to the course. The structure and the contents of the course can be seen in Vidal (2003).

4. Practical guidelines

While planning and carrying out FW is important to reflect about the following practical aspects of the workshop:

- *The themes:* Reflect always about the suitability of FW to the problematic situation on hands. The most suitable themes are those with community concern, community knowledge and experience, and the participants are willing to take responsibilities for action. The projects can be real, for instance: the establishment of a youth centre; or more abstract as: the role of IT in primary schools. It is not a good idea to choose projects that are far away from the experience and the knowledge of the participants.

- *The number of participants:* Jungk and Müller (1987) recommend that for FW the number of participants should not be bigger than 15-20 persons, to secure that all will participate in an active way. If there are more participants it is a good idea to cluster the participants in groups and run parallel workshops with the same theme; then at plenum sessions ideas, solutions and projects can be presented after each main phase of FW. Workshops with 8-12 participants can become very creative, synergetic and dynamic if suitable facilitated.

- *Group work:* The success of FW is determined by the effectiveness and creativity of the group work. If the participants are invited to the conference it is recommended to use some selection criteria. It is clear that selecting the participants and distributing them into sub-groups is a very important task, which has to be solved seriously in order to develop effective group work and high quality results. A person with knowledge of the local community and experience with working together with people from the organisations involved should undertake this task. In connection with the group work in FW there are two social processes to be managed: the problem solving process and the group process. The problem solving process is the way the sub-groups in the conference act to solve the task of generating ideas and visions going through divergent and convergent phases. The group process is related to the manner in which the individuals in the group work together, how they learn, how they communicate, their social and power relationships, and how they deal with conflicts. Obviously, these two

processes interact in various degrees. In ideal group work, these two processes support each other. We talk about group dynamics, when energy and synergetic effects are created in the group work as a result of well-balanced processes where the task is just as important as the group trust and identity. In FW there is a third social process: the facilitation process (see Chapter 3)

- *Time-table:* There is not a specific standard duration of FW. There is very much variation just from one hour to a whole week. Obviously, the obtained results are conditioned by the duration of the workshop. The total duration will then be allocated to the different phase of FW. The most common is one-day or three-day workshops. Usually more time is allocated to the fantasy and implementation phases. For example in a three-day workshop, the time table could be: Critique: Friday 18-21 pm; Fantasy: Saturday 10-13 and 15-19 pm.; and Implementation: Sunday 10-13 and 14-16 pm. It is important to have some pauses, for walk out in the forest or by the sea, for social interaction and relaxation.

- *Suitable local and facilities*: It is important that the local and the location where the workshop is to be carried out have properly selected. All the necessary materials and practical tools should be available. The environment (forest or sea) should also be chosen to create a cosy atmosphere. For workshops with many participants, there should be suitable rooms for group work and a big room for meetings in plenum, Jungk and Müller (1987) suggest several ways of arranging the rooms for the workshops.
- *Suitable creative tools*: We have seen in Chapter 5 a whole family of tools and methods that the facilitator can use to support the group work. The selection of tools for a given group to deal with a given mess is more an art than a rational process; see further (Vidal, 2004).

5. FW: Problems and Limitations

Running a workshop in general and FW in particular is a social activity that demands interaction and communication among people that is not always unproblematic. Some of the most common difficulties are discussed below.

Conflicts in the main phases

In FW it is assumed that a consistent development of topics and core questions occur between the main phases from critique to action plan. This is a very demanding task for the facilitator and the group of participants, and their abilities to solve conflicts (see Chapter 4). Some crucial questions should be raised at the end of each phase to be secure that there are sufficient qualified ideas and topics to be used in the next phase. Otherwise, the facilitator should use more time, change methods, or change the working form.

Is a good idea to begin with a critique phase?

This is a crucial question to be raised in the preparation phase. This critique phase might have a demotivating effect. The group might turn desperate about the many complex problems and conflicts to be faced. Sometimes it is a good idea to begin with an invited speaker that will present a positive story about the theme in question. Other times, when

dealing with problems of organizational change it might be a good idea to use SWOT-analysis (strengths, weaknesses, opportunities and threats) to structure the brainstorming process. Then, this critique phase is expanded to a problem identification phase. Other times, it might be better to start with a fantasy phase first, as it is the case with the Vision Conference presented in Chapter 2.

The effects of creative tools
It is not always easy to make a group work creatively. It needs courage to think about a desirable utopia. The facilitator should be careful while selecting creativity tools, the participants might react differently. If the participants are not used to work with their intuitions and feelings, then the fantasy phase might be a very difficult process. But never underestimate people, radical changes in attitude can happen very fast and synergy effects can be created. There is also the question of age, children and young people are ready to play and create.

The duration of the different processes
The duration of each of the phases of FW is context depending and cannot be predicted in advanced. Sometimes good ideas can be found under pressure of time; but communication, cooperative and collective works take their own time. Long pauses or a night's break might noticeably change the group's dynamics, giving time for incubation.

Who will support the group afterwards?
The action plan usually involves the realization of difficult tasks therefore the action group needs permanent support from more experienced groups or supervisors. Therefore after the end of FW it is recommended to address this question and design a backing group for the group who is going to carry out the action plan. Think also about the learning aspects and the possibility of permanent workshops.

The role of the facilitator
The golden rules while selecting the facilitators are:

- Two well functioning facilitators are better than one,
- Some tasks demand experienced facilitators,
- Confidence between the participants and the facilitators is essential,
- The facilitators should be highly motivated by the task,
- A good facilitator knows when he has to: "let it go", push or pull,
- A good facilitator is like a director of a performance where good timing is crucial, and
- You cannot facilitate boxing.

Power and communication
As a point of departure all the participants are equal and likeminded in FW. In reality, there are of course differences among the participants regarding their social status, their education and experiences, their sex and their age. Since knowledge is power and the experience in communication can be very varied, it is the task of the facilitator to manage the processes to give equal opportunities to all participants. If there are some hierarchies and conflicts, the facilitator should be able to deal with them in a positive way. It is no recommendable to use FW method in a firm where management wants to know who should be fired from the group of participants. In this situation one thing is sure; the

participant managers will not get fire even if the result of the workshop will recommend that.

6. Workshop at the Fri&Fro Community

Fri&Fro (www.friogfro.dk) is a building association located in Egebjerg, at the north of Zealand, Denmark. It has been established for building house for the members of the community after the following principles:

- To use sustainable materials and principles within building, sewage and waste,
- To create and live in a community following collective principles, and
- To minimize debts and speculations.

FRI&FRO started in 2004, after 2 years most houses for 16 families have already been builded following the above mentioned principles and experiencing the meaning of leaving in a community. During this period of time most energy has been used in the learning and practical aspects of building the houses. Some of the members of the community have by now experienced that rules, regulations and future visions do not correspond to the daily practice of the community. Other members do not agree with this point of view. Some members think that the principle of sustainability is not visible in the practice of the community. Other members think that everyday life does not work optimally. Some members give more importance to external activities while others are focusing more on internal aspects of the community.

These controversies and conflicts among the members of the community have caused a need "to be shake up" with the purpose to strength solidarity and the future visions for the community. Therefore, some of the members of the community have taken the initiative to start a process that should end formulating visions and goals for the future development of Fri&Fro.

The first step in this process was the organisation of a workshop to discuss important issues and problems that were experienced at the community. In January 2006, Fri&Fro applied to LEADER+ West Zealand for consulting assistance to organise and carry out such a workshop that should show the visions and possibility of actions for the community. LEADER+ West Zealand decided to support such application and recommended that the author of this book should be the organisator and facilitator of such a workshop. One member of Fri&Fro and the facilitator planned a one-day workshop, and after a meeting they agreed on the purpose of the workshop, the agenda, and the methods to be used. They also agreed in the use of FW as the main approach to structure the discussions.

The main purposes of the workshop were both:

- To create a discussion forum for the community members to clarify which aspects of the future development they will seek to influence and which kind of methods will be used, and
- To collect experiences about organising and carrying out future workshops that can be useful for the members of the community in their future work as a pivotal point for a local based and democratic process of change.

The Future Workshop for Fri&Fro was carried out at the local school in Egebjerg, March 4th, 2006, during the period 9 am to 16 pm.

Future Workshop in Fri&Fro
Saturday, the 4th March 2006

Future Workshop is the practical answer to the following question:
How can ordinary people develop collectively and cooperatively their wishes and visions to life, work and Society? How can they find ways to realize these visions?

Future Workshop is a method for an unusual learning process based on democratic principles, focusing on wishes and dreams as the starting point for the development of concrete visions and social innovations.

This Future Workshop has been designed, planned, organised and will be managed by two facilitators.

The main theme of the workshop is:

Fri&Fro's challenges in relation to solidarity, dialoguer, and sustainability.

Program

9.00 – 9.15 Introduction (The facilitator)
9.15 – 9.30 Warm up exercise (a member of Fri&Fro)
9.30 –11.00 Critique phase (The facilitator and co-facilitator)
11.00-11.15 Coffee pause
11.15-12.45 Fantasy phase (The facilitator and co-facilitator)
12.45–13.45 Lunch
13.45–14.00 Warm up exercise (a member of Fri&Fro)
14.00–15.30 Implementation phase: (The facilitator and co-facilitator)
15.30–16.00 Conclusions/Evaluation (The facilitator)

The facilitator is professor at The Technical University of Denmark and teaches creativity, facilitation, and problem solving.

The co-facilitator is student at The Technical University of Denmark and writes his MSc thesis on creative optimization.

Box 4. The agenda (Vidal, 2006)

Planning
At a meeting one member of Fri&Fro and the facilitator planned the event. It was expected around 20 participants and the facilitator will be supported by a co-facilitator.

It was discussed extensively which kind of workshop was more suitable for this event. It was decided that it should be a FW, because of the importance of having first a phase with criticisms to be able to identify the main problematic situations as seen by the members of the community. It was agreed that the purpose of this workshop should be to learn about the problematic situations, to generate visions for the future and to discuss how this visions are to be achieved.

The three main phases of the FW were thoroughly discussed and planned in time and space. All practical aspects and the needed material were also specified. The member of Fri&Fro committed herself to find a suitable place with appropriate facilities to carry out the workshop.

The theme of the workshop was formulated as:

Fri&Fro's challenges in relation to solidarity, dialogue, and sustainability.

The elaborated agenda is shown in box 3.

The Workshop Day
The facilitator started the workshop by presenting LEADER+ West Zealand and by giving an introduction to the purpose of the workshop and the method used as well as the agenda to be followed. The main tools were also presented: brainstorming for the divergent stage and mind mapping for the convergent stage

After the warm up exercise (a focusing test), the critique phase was started using a divergent process, trying to formulate as many critical points as possible. Brainstorming was used as a tool for idea generation, following the well-known rules: no criticism, quantity is required, fast idea's production and combination of ideas is permitted. Many critical points were produced. These were structured by the facilitator and co-facilitator using a mind map. The critical points were grouped as follows:

- Decision processes
    - Bad processes
    - Too much consensus
    - Too much talk, little action
    - Too little administration
    - Too little anarchy
    - Disrespect to democracy
    - Heavy procedures
    - Manipulation
    - Too much steering
    - Focus for projects not for people
    - Not willingness to compromise
    - Slow feedback
    - Sanctions contra broadness

    - No obligations
- External Focus
    - Too little ecology and sustainability in the community
    - Too little extern focus
    - Too little pride
    - No interaction with similar communities
    - Loss of visions
    - No optimism
- Economy
    - Too tied to the community
    - Meanness
    - Too little budget for the community
    - The tyranny of money
    - Too much focus to economy
- Communication
    - Too little story telling
    - Bad communication
    - Too little joint activities
    - Too little cake
    - None intern exchange of ideas
    - Irritation instead of action

- Children
    - Too noisy
    - Too few children
    - Too much focus for children
    - No join norms
    - No regulations
    - Too little broadness
- Concrete points
    - Communal house too small
    - Bad Hygiene
    - Car driving
    - Too much mud
    - Little aesthetics
    - Lack of new material
- Culture
    - Little self-reflection
    - Too few hugs
    - Too little differences
    - Too much anarchy
    - Too little happiness
    - Force to happiness
    - Too much negativity
    - Too little god times
    - Too much ego
    - Many prejudices

    - Impossible to achieve everything
    - Too little praise
    - Too little patience
    - Too little confidence
    - Too little thankfulness
    - Too fast judgement
    - No sense of reality
    - Separate private problems
- Visions and regulations
    - Irony about principles
    - Elitist concepts
    - Too many rules
    - Attach to an ideology
    - It is forgotten that Fri&Fro is an alternative housing
    - Many taboo areas

After a short pause, the fantasy phase was started by showing the mind map elaborated previously in the critique phase. There were some few suggestions about replacing some critique points. Afterwards, the participants started using the brainstorming tool, now they should use their fantasy (dreams) for the ideal situation for Fri&Fro. Many propositions were negations of some of the points in the critique phase. In addition, new ideas were also suggested. This phase took departure from the group denominated "decision processes", but during the brainstorming it was extended to other groups. That is the divergent and convergent processes were run in parallel. The final result was presented as a mind map having the following grouped ideas:

- Decision processes
    - Informative and exiting meetings
    - Practice instead of talk
    - Creative meetings
    - Learn about meeting processes
    - Voluntary forums
    - Practical decision processes
    - No to endless discussions
    - Four join meetings a year
    - Coordination groups
    - Decentralization
    - From words to action
    - Formulate solutions
    - Cosy meetings
    - Negotiation no discussion
    - Do not be afraid of conflicts
    - No to negativity in the meetings
    - Constructive discussions
    - High competence in working groups
    - Solidarity and desire
    - No to who-do-you-think-you-are attitude
    - All have influence and responsibility
    - Forum for dealing with conflicts

    - Democratic cooperation
    - No predicates
    - Local cultural arrangements
    - Join travelling
    - Big family
    - Rules are changed to considerations
- External Focus
    - Knowledge interchange
    - Connect to other projects
    - Open to others
    - Ethical budget
    - Action plans
    - Give to others
    - Concrete targets for ecology
    - Alternative economy
    - Proud to be part of Fri&Fro
    - Bank of resources
    - Example for others
    - Active projects
    - Political projects
    - Happy with the community
    - Active in the local town
- Economy
    - No too tied
    - Cheap house and economical security
    - Money-less community
    - Economical freedom
    - Solidarity no economy
    - Regulations cannot be changed
    - Different forms of ownership
    - Firms
    - Economic security
- Communication
    - Develop a mail culture
    - None unsolved problem
    - Framework for communication
    - No hidden issues
    - Learning the art of communication
- Children
    - Join upbringing
    - Ecological education
    - Common boundaries
    - Travel with children
    - Creative workshops
    - Close “monkey cages”
    - The adults show the way
    - Eating culture
    - Big playing day

    - Cooperation with the local school
- Concrete
    - Shops and market
    - Larger common house
    - Create clubs
    - Membership of bicycle association
    - Better homepage
    - Night coffee informal meetings
    - Signs for parking places
    - Sauna etc
    - Recycling shops
    - Common songs
    - Good walking paths
    - Networking
    - Pets
- Vision and regulations
    - Keep the visions
    - Agreement and stillness on regulations
- Dreams
    - Time to others
    - Balance in the environment
    - Ecotopia
    - Energy to live
    - Love and spring
    - Realize our own visions
    - New vision, start from scratch
    - Falling in love
    - Knowledge sharing and creating discussions
    - Other values than economic
    - Holistic thinking
    - Live work
    - No bitterness
    - Logical consequences
    - Smile, satisfied
    - Time to mature ideas
    - No cars in Fri&Fro

After the fantasy phase, it was time for lunch. The participants have brought different kind of dishes. They were very hungry, sign of good and intensive creative work. The facilitators worked in the restructuring of the mind maps, and collecting information for the final report.

The facilitator began the implementation phase with a presentation of all the different focus areas coming from the two previous phases. The facilitator identified the areas “regulations and economy” as having too many contradictions, that it will demand a lot of preparation to start such a discussion and that several meetings will be needed to find a satisfying solution. Therefore, the facilitator suggested that the participants should be aware of this problem and prepare future work to tackle this mess.

Focus should be concentrated in the other areas. It was a complete agreement about this suggestion. Anyway some few persons started to make comments on these actual issues and an unfruitful discussion started. The facilitator stopped these discussions, and the workshop was ready to continue.

The participants should converge with suggestion that should end in actions for implementation. The process was very heavy and slow, most of the participants were tired after the creative work of the morning. There were not so many suggestions. The energy was down. The facilitator decided to make a break. After the pause, five focus areas were given high priority. They were selected using a votation procedure. These were:

- Communication
- Play – the artistic person
- Common pavilion for children
- Sustainability and ecology, and
- Join meetings – structure and culture.

The participants were allocated to these five areas and they should come with proposals for projects. After 30 minutes, the participants present their ideas to each other in plenum. The day ended with an evaluation of the workshop.

Evaluation of processes and tools
The participants were good during the divergent processes especially in the two first phases of the FW. Few times were some ideas criticized. Many ideas were produced in the morning of the workshop day. The two first phases were rather successfully.

In the implementation phase not all groups achieve implementable results in the form of action plans. For most groups the time available was not enough to produce actions. This was primarily because most participants were tired, very little energy was left. Better result could be achieved if another day was available for the implementation phase.

The facilitator pointed out at the end of the workshop that the actual situation is rather complex and messy. The problem solving process demands resources, experience and knowledge. Within this perspective, this FW should be regarded as a first step in the problem solving process. More workshops are needed.

Summarizing, the workshop was carried out in a very satisfactory way. The atmosphere was positive, constructive, and with a lot of engagement. It could have been desirable more time, another day to elaborate some action plans. Most participants were very enthusiastic with this form of work. This was expressed in the final evaluation.

In the final report, the facilitator formulated the situation of Fri&Fro using a metaphor:
All the members of the community are ready to sail together, they have already pack (houses) and they have an idea of where they want to go. But, they have not yet constructed the ship (the organisation) that will transport them. They have neither found the direccion (strategy) they will follow.

Fri&Fro's central problem is: How to design a democratic and effective organisation? How to develop a suitable strategy?

The final report end with the following quotation:
The change from autocracy to democracy seemed to take somewhat more time than from democracy to autocracy. Autocracy is imposed upon the individual. Democracy he has to learn (Lewin, 1948).

7. Conclusions

FW was presented as a method to develop ideas or projects for community development and problem solving in a participative, democratic and cooperative way. The design of the workshop task embodies the principles of creative problem solving while the social organisation of the group expresses the principles of facilitation of responsible participative democracy.

FW is characterised by three main aspects:

- The focus on group dynamics while other approaches focus on methods or on approaches for task solving as the steering factor
- It is based on modern concepts about the facilitation of creative problem solving processes; and
- It emphasises collective work and collaborative learning through the interaction of the participants with the aim of learning how to build, sustain, and develop responsible participative communities.

We have learned to design, manage, and evaluate FW; the next task is to try to answer the question: What did we learn from this experience? This is the field of the systematisation of praxis. To systematise is to describe, structure, and reflect analytically on the development of a practical experience, see further Vidal (2004a).

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CHAPTER 7

PARTICIPATIVE PROBLEM SOLVING

Everything can become art, everything
can be studied scientifically.

1. Introduction

In our educational institutions and in our culture in general, there is a split between art and science. It is believed that these two ways of working and thinking, the *artistic* attitude and the *scientific* attitude are two very different worlds, they are like oil and water. Although the link between art and science has historically been very close, exemplified by Leonardo da Vinci, the ideal that Leonardo represents is really not agreed upon by the art and science communities. It is the opinion of the author of this book that this distinction between and separation of art and science is artificial and increasingly anachronistic. Fortunately things are changing; new fields arise from the synthesis of other fields. For instance, scientists are relaying more and more on visual communication, and artists are working increasingly with computers. There is a common place to transfer information, ideas and knowledge. Visual problems are ultimately the same across disciplines. For example, Computer Graphics is a new field made up of art and science.

Another interesting field that demands knowledge and experience from art and science, as well as other disciplines, is Modern Design. The book of Nelson and Stolterman (2003) is a *coherent meta-theoretical and holistic approach to a design theory* applicable to any context. This book is valuable and useful: Full of many conceptual and practical ideas; given an integrated picture of central theories and concepts about design. In addition, it brings together qualitative and creative issues from Art and Architecture with quantitative and scientific approaches of Operational Research and Engineering. The authors do this by founding their concepts and analyses on the epistemological foundations of Systems Thinking.

Another valuable contribution related to management and problem solving is the book edited by Boland and Collopy (2004). The main premise of this book is that: *Managers should act not only as intelligence gatherers and decision makers, but also as creative designers.* Though decision and design are inextricably linked in management action, managers and scholars have too long emphasized the decision aspect of management over the design aspect. The main message of Boland and Collopy is that managing is not only decision making but also designing. This book is a collection of papers exploring the “design attitude” as opposite to the “decision attitude”, that draws on examples of managing in architecture, art, and design. Their book is a critique of the predominant management education that focuses on training students to make choices among the alternatives presented to them, rather than training them to design new alternatives. In a series of brilliant and wide-ranging essays from a multitude of disciplines, the authors develop a theory of the design attitude that contrasts with the more traditionally accepted and practiced decision attitude. Their innovative view of management promises to provide a way into some of the most pressing issues facing organizational leaders, researchers and educators today. They have designed a thought-provoking volume that portrays management not as a science of rational problem solving but, instead as the art of generating visions and roads for achieving these visions. This collection of papers inspires, enlights, intrigues, challenges, and teaches readers about designing organisations and problem solving approaches.

In addition, in Chapter 1 we have already mentioned the work of Ackoff (1978, 1981) that argues of the need of approaching problematic situations as both artistic and scientific tasks, this is the *design or creative approach*, where you seek to change the

nature, and the environment of the problem to remove the problem, it dissolves the problem; it *idealizes* rather than satisfies or optimizes because its objective is to change the system involved or its environment in such a way as to bring it closer to an ultimately desired state, one in which the problem cannot or does not arise; it is innovative oriented and it makes use of creative and participative approaches aspiring dissolution in the containing whole. In the design approach the facilitator is both the artist and scientist supporting a group to deal with a mess through a problem solving process.

The main purpose of this chapter is to reflect, elaborate and document about how the concept of *"the art and science of problem solving"* can be used in the real world to deal with important problematic situations in Society. Here, the facilitator is both the artist and scientist supporting a group work. As a scientist, he will be using when needed scientific approaches, experimentation, simulation and mathematical modelling in the problem solving process. As an artist, he will metaphorically speaking be like a painter who combines colours and shapes (the participants in the process) to create an art work (the problem solving process). Or, the facilitator is the director of a theatre performing a piece of art.

Art and Science are both historically and culturally laden concepts. They are human-made constructions that evolve and change in history. Modern concepts of Art and Science will be shortly discussed in Sections 2 and 3, respectively. Thereafter, Section 4 will elaborate on the differences between Art and Science while Section 5 discusses their similarities. Next, our discussions will be more concrete by presenting a real-life case study: The design of a decision support system for the planning of oral examinations in high schools in Denmark; where different approaches will be used, this will be the subject of Section 6. Another case-study related to strategy development in a small firm will be presented in Section 7. In section 8, other case studies will be presented and finally in the last section, Section 9, the conclusions are depicted.

2. What is Art?

The answer to this question is conditioned by the fact that a definition of art has changed due to cultural and historical reasons. The boundaries of art have experienced a radical change over the last century. Previously, art was created in historically validated media and presented in a limited set of contexts for a limited set of objectives, such as search of beauty, religious glorification, or the depiction of persons and places. However, this century has produced new ways of experimentation, breaking and testing of boundaries. Artists have introduced new media, new contexts, new materials and new purposes. The art institutions have assimilated much of this experimentation, some of them depicted in the following list:

- Abstract painting (Pablo Picasso),
- Ready-mades (Marcel Duchamp),
- Interventions in non-art settings (Superflex),
- Performance art (Tracey Emin),
- Use of industrial materials, products and processes (Andy Warhol),
- Conceptual art (Joseph Beuys),
- Land art (Robert Smithson),
- Interactive art (Olafur Eliasson),
- Public art (Diego Rivera), and

- Video art (Peter Land).

This expansion in art activities causes a difficulty in achieving consensus on "definitions" of art. The following very general definition can be easily accepted:
Making art may be depicted as the process of responding to perceptions, feelings, ideas, dreams, and other experiences by creating innovative works of art through the skillful, thoughtful, and imaginative application of tools and techniques to various media and materials. The "objects" of art result of the encounters between artists and their intentions, their interventions, their concepts and attitudes, their cultural and social realities, and the materials or media in which they choose to work.

Modern artists use unorthodox materials, tools, techniques and ideas inspired by the worlds of science, technology, humanities, economics, psychology, sociology, anthropology, etc. Some are present in non-art contexts, such as factories, laboratories, trade shows, the Internet, schools, and the street. Social interventions are manifold. The process of creating art is filled up of problems related to design and decision-making. The design attitude is related to the creative and innovative process in problem solving, while the decision attitude is related to the scientific approach to problem solving. In this sense, science can support art both providing materials and the media, and rational approaches to problem solving.

3. What is Science?
Researchers and philosophers on science suggest several defining elements. This set of core ideas, *the scientific approach*, includes the following:

- An essay to understand how and why phenomena occur,
- Focus on the real (natural, social, human) world,
- Focus on empirical information,
- Seeking objectivity,
- Use of a rational or logical approach,
- Knowledge codify into laws and principles, and
- The continuous testing and refinement of hypotheses...

The crucial assumptions of the scientific approach are that the observed world is essentially orderly, and objectivity can be achieved through self-discipline and the reliance on methods such as the calibration of instruments, repeatability and multi-observed verification. There are of course variations in emphasis. That is, empiricists focus primarily on the role of observations, while rationalists emphasizes on the logical processes of theory construction and derivation. Some enhance induction built from observation; others focus on deduction drawn from theory.

Critical scientists see science as a modern delusion, challenging mainly the possibility of objectivity, noting the decisive influences of gender, social position, culture and history. Critical science is focusing in issues such as the interactions of the observer and the observed phenomena; the role of socially constructed frameworks at all stages; and the social forces and meta-narratives that form the questions and paradigms used in the research process.

Several researchers have contributed to the critique of science. One describes the way dominant paradigms shape the questions that get acceptance and support. Another critiques assumptions of scientific rationality, remarking that nature gives different

answers when approached differently. Others analyze the metaphoric language of science, its authoritative voice, and its unacknowledged patriarchal under life.

In social sciences and the humanities, this kind of critique predominates. Scientists and technological innovators, however, believe in the ability to discover universal truths and assert that reform can overcome those places where scientific process falls short of its aspirations to universality and objectivity. As validity, it is usually referred to the accomplishments of the rational approach in building robust theoretical structures, and in predicting and controlling the material, organic and social world.

4. Art vs. Science: Differences

Box 1 depicts the main differences between art making and science making. Einstein (1934) has stated that the artist and the scientist each substitute a self-created world for the experiential one, with the purpose of transcendence. The main difference is that the artist is guide by an "artistic attitude" while the scientist is guided by a "scientific attitude". These attitudes are characterized in Box 1.

Artists are reflective and intuitive persons; materializing and visualising subjective experiences; and breaking the boundaries and traditions. Scientists are logical and rational persons; formulating verbally objective theories and principles; and seeking to improve and optimize. Scientists in their work are usually problem solvers, which are selecting course of actions that is believed to yield the best possible outcome. Artists are usually problem dissolvers, which are changing the nature and the environment of the system where the problem is imbedded so as to remove the problem. These differences are not exclusive; this means that sometimes the artists will be working as scientists and vice versa, during their working process and problem solving process.

Differences:

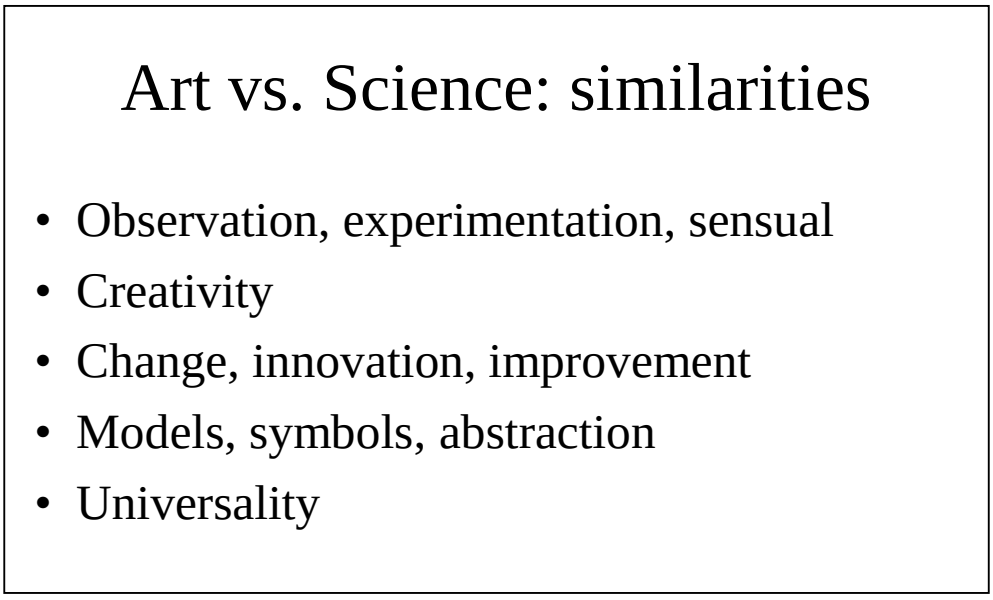
Art	Science
• Aesthetic, reflective	• Know, understand
• Emotion, intuition	• Reason, logic
• Idiosyncratic, personal	• Normative, principles
• Visual, sonic	• Narrative, textual
• Evocative, subjective	• Explanatory, objective
• Radical change	• Improve, optimise

Box 1. Art vs. Science: Differences

5. Art vs. Science: Similarities

Box 2 describes the main similarities between art and science. Both value the careful observation of their environment to gather information through their senses. Creativity and innovation play a central role in both activities. To introduce change or improvement over the existing is of great concern to artists and scientists. Artists as well as scientists work with abstract symbols, representations for various realities and working tools. Even the language used by the two groups can be similar. Scientists working with mathematical models sometimes describe a particular good explanation or result as elegant or beautiful. The intellectual bridge of abstraction and aesthetic consideration is fundamental for both groups. Finally, both aspire to create works that have universal relevance.

These similarities provide many interest fields where art and science can support each other in their working processes. One of them is the interaction between creative and rational processes in real life problem solving. Another is artists been the facilitators of problem solving processes in scientific approaches. Modern artist are also inspired by new developments in science and technology, for instance the exhibitions of Olafur Eliasson (2004). Modern management scientists and researchers of problem solving approaches are also moving from the classical scientific approach towards a more artistic and design oriented attitude that is needed when innovation is needed in an organisation. In a modern world everything can become art, and everything can be study scientifically.



Box 2. Art vs. Science: Similarities

6. Case Study: Planning of High School Examinations in Denmark

This is a real-life logistic problem where a computer based support system has been developed and implemented. The system has been running at the Danish Ministry of Education since 1992.

Background

In Denmark, all planning of the official examinations at high school level is centralized at the Danish Ministry of Education. Denmark is the only country where such planning activities are centralised nationally. This cumbersome task had become increasingly difficult and time consuming due to educational reforms in 1998. In 1990, it was decided at the Ministry to develop a computer based decision support system to aid the ministerial planners in this planning process.

The Danish academic school system is divided into primary school (grade 1 through 9/10), high school (grade 10/11 through 12) and university/college, where primary school is the only compulsory school. High school, in the broad sense, has several channels; the academics as opposed to the technical or commercial high schools being the most attended ones. Approximately one half of all primary school graduates continue onto an academic high school.

The academic high school system has two major channels: The Gymnasium which is a 2 or 3 years package, 3 years being the most common, and higher preparatory school (HF), a two years package Through a system of merits, it is also possible to obtain an equivalent qualification through individual study-plans over several years (VUC). Denmark has 77 Gymnasiums, 25 HF-schools, 77 VUC-schools and 69 schools with both Gymnasium and HF curricula. This amounts to approximately 115,000 students and 12,000 teachers.

The students of the Gymnasium and HF are evaluated at the end of each school year. This evaluation includes oral and written examinations in certain courses. The planning of written examinations is much simpler since the days of examination are given before the start of the school year. This is necessary since all students answer the same examination questions and obviously they must do this at the same time. In what follows *examination* means oral examination. A *censor* is an eligible and ministerial appointed person - usually a high school teacher from another school – and an *examiner* is the person who conducts the examination – usually the teacher of the course.

An examination is carried out in the following way: A censor arrives at the school to observe the examination of each student conducted by the examiner for a fixed amount of time. After each student examination, the censor and the examiner agree on a grade for the student and then continue with the next student on the course, if any.

To encourage students to exhibit “good student behaviour”, i.e. not miss classes, deliver term papers on time, etc., a bonus is granted in terms of a reduced number of examinations. Almost 95 percent of all students achieve this bonus. While a final year student could be examined in 7 subjects, “good students” will only have to attend 3 or 4 examinations. The decision of which 3 or 4 subjects the student is to be examined in is drawn in private for each student and is not revealed until the last school day.

Consequently, the student must prepare himself for all 7 subjects during the regular school year.

The examinations are gathered in a reserved 5 week period at the end of the school year from mid May to mid June. The Gymnasium only uses the last 3 weeks, except for final year students who also use the second week. First year HF-students use the last 4 weeks and VU-students and final year HF-students use all 5 weeks. Except for national holidays (which have a maximum of three whole days), the examination are placed Monday-Friday.

Previously, the examination planning was carried out by examination planners at the Ministry of Education using pencil and, especially eraser. Data was reported from each school on paper and sent by snail mail. In 1990, it was decided at the Ministry to develop an information system containing all relevant school data. The basic system is now an Oracle database with applications developed using Oracle tools and C-programming. Different systems are attached to the database, the examination system being the largest and most complex. A communication system handles the input of new data which is submitted from the schools to the ministry on floppy disks.

The problem and the approach

Summarizing, we can state that the task is to design and implement a computer based decision support system to plan and schedule the annual oral examinations for secondary education in the whole Denmark. For each student, it has to be decided:

- The number of oral examinations,
- The subjects to be examined on,
- The day, hour and room number for the examination,
- The examinator, and
- The censor.

In practice, there are two main interrelated factors that determine the process of the solution of the above mentioned problem. The *technical approach*, i.e. the suitability of the techniques, methods, software, procedures, and so on, included in the whole decision support system, and the suitability of the *social process* related to the problem solving process itself. In Hansen and Vidal (1995), the technical approach has been described. The second factor demands close interaction and collaboration between the group work, decision makers, experts, consultants and facilitators. In this section, we will primarily be focusing on the social processes though some aspect of the first factor will be shortly mentioned.

The planning problem described above is a complex and quite difficult combinatorial problem. It contains many decision variables; it has a variety of objectives and many feasible and satisfying solutions. We shall now elaborate on these observations.

Real life planning situations are usually complex. The examination planner has to comply with national laws and customs and must assist schools with their specific problems, making the examination period as smooth as possible. Obviously, a computer system should support him in this task, rather than introduce additional limitations.

The examination timetabling problem is well known for its mathematical difficulty (Eiselt and Laporte, 1987). This is also true for the assignment problems related to our planning problem. Since a student will normally take more than one examination, a school may have as many as 1500 student examinations. Each student examination is to be scheduled on a specific day, which produces very many decision variables. This assignment problem will contain more than 100 million binary decision variables if formulated as a traditional optimization problem.

Having multiple objectives is an ingrained feature of real life problems. These criteria involve a good spread of student examinations so as to provide good premises for each student, minimising the costs for the schools, the counties, and the Ministry, and sharing pedagogical benefits equally among the schools, subjects and geographical areas.

After experimenting with prototypes containing preliminary algorithms, it was concluded that finding feasible solutions did not present major difficulties. Finding satisfying solutions was more difficult but was still consider being attainable within reasonable amount of algorithm construction, system implementation effort and computational time. No demands for achieving optimal solutions were given whereas robustness and consistency were considered to be more important. This is in line with the following heuristic principle: *Managerial decisions might be improved more by making them more consistent from one time to another than by approaches seeking optimality to explicit cost models; especially for situations where intangibles must otherwise be estimated or assumed.*

These observations led to the conclusion that the final planning system should provide the examination planner with suitable information and optimising tools based in heuristic methods, which could be used interactively and that could be stopped at the users command yielding satisfying solutions.

To cope with the complexity of the problem at hand, it will be decomposed into four interrelated phases, each dealing with separate tasks and having well-defined goals following well-known heuristic principles (Silver et al, 1980). This decomposition approach follows to a certain extent the traditional approach (pencil and eraser) at the Ministry; this makes easier the final implementation process. This traditional approach was very time consuming for two planners with a lot of helpers. These four phases are:

- Subject Draft,
- Examination Chain,
- Examination Scheduling, and
- Assignment of Censorships.

The work group and the stakeholders

The decision maker was the chief of the Examination Department at the Ministry. He is responsible that all the processes run smoothly. He played no major role in the development of the decision support system. He gave his full support to the work group.

The work group was composed of three planners from the Examination Department at the Ministry. There experiences from many years of work at the Department were

extremely useful while testing the different programmes solving each sub-problem. The leader of this group had a central position in the development of the decision support system because as a previous teacher in informatics, he had sufficient background to understand also the technical aspects of the problem and to contribute to its solution. He was not only the leader, but a user and a developer.

Stakeholders were of course the directors and teachers from the different schools that were involved in the discussions about the purpose of the new system, the first tests and the final implementation. The feedbacks from the stakeholders were important during the tuning of the whole system.

The facilitator was my previous student who had developed the technical approach in his MSc thesis; afterwards he was hired as a consultant for the Ministry. He was the facilitator of the whole development and implementation processes. As we will see below other experts were involved. He will seek for the collaboration of the users, the stakeholders, and the experts at the different stages of the development and implementation of the system.

Other experts were: One system's designer from a consulting firm and three programmers hired at the Ministry.

The facilitation process

In this case study the facilitator has two main tasks:

- First, to *design, develop and implement* a computerized decision support system in close cooperation with the users and other experts. As described above a satisfying system was developed by decomposing the complex problem in a series of interrelated optimization sub-problems each of them being solved using simple, fast, and reliable heuristic methods. Here the facilitator is working as a scientist using creative and rational approaches, mathematical modelling and algorithms to find satisfying solutions and using the scientific approach to manage the problem solving process.
- Secondly, *the facilitation of the group work* and the work of the experts in the development and implementation stages of the problem solving process. This was a long process, it started in 1991, the system was used for the first time in 1992, and it has being running every year since 1993. The task of the facilitator was to develop an efficient and innovative form of work, a common culture, a positive way of solving conflicts and a creative manner of finding new ideas. Here, the facilitator is working as an artist, he is instructing, directing, and coaching people to be participative, collaborative and creative in the problem solving process. He is like an instructor of a play in a theatre, supporting the different artists to perform their best and to create synergetic processes. Or, more metaphorically, he is like a painter were all the participants are his colours to be combined in shapes, shadows and forms to be able to create a master piece.

The technical approaches needed to deal with the above described complex situation are relatively easy to develop. Similar complex logistic problems have been previously solved using mathematical models and heuristics and special dedicated computerized systems.

The real complexity of the problematic situation in question is the *social complexity* related to the development and implementation of the system by the actors in a participative and collaborative way. The management of these social processes is a very complex task. Here the manager, that is the facilitator, is not only a rational and intelligent decision-maker, but also a creative and artistic designer. This managing attitude, managing as designing, is found in architecture, art, systems science and design professions.

Of course as with any practical project there have been conflicts, delays, and other problems related to negativity of some of the users or programmers leaving the Ministry; but in the spite of the facilitator's lack of practical experience, he and the leader of the working group believed that it could be done and were highly motivated to do the task. The system has now bee used for 14 years in practice. This has been a great success. For the Ministry, the examination system is the most prestigious system since the examinations have intensive attention from the schools, the public and the politicians; if things go wrong, from the press! Fortunately most people, including many students and teachers, are not aware of the existence of such a decision support system.

7. Strategy and Creativity: The case of Hermes (Månsson, 2001)

Hermes is a small privately owned company with 7 employees. It is a distributor of high tech products of hospital equipment and medico techniques to Danish hospitals. Over the years, the company has been relatively stable run by one managing director who has also been the owner. However, during the 1990's the company experienced some turbulence internally as well as and in a changing environment, creating substantial uncertainty and frustration amongst employees. In 1998, a new managing director took over the company which created a need for preparing a new business vision and strategy.

A historical presentation

Hermes was established in 1974 by the former director and his wife. The company was based on a vision to offer medico equipment to Danish hospitals. The director established a good knowledge both on the needed equipment and the network of doctors using the equipment by attending a fair number of medicine courses. Since it is the doctors at the hospitals that in large decided on which equipment to use, these contacts were invaluable to Hermes. Also the director spent much time on travelling in search for new products while his wife managed the financial aspects of the company.

Within the first couple of years, things went well for Hermes; people were hired and prospects were good, since more hospitals were built. In 1988, Hermes had 18 employees and a brand new office building. Later, the same year, it was decided to look for a new managing director. In relation to that, an assistant director was hired.

Four years later, the assistant director left the company. Unfortunately, with him went one of the company's largest sales products and around 25% of the turnover. This was possible, since the employees in Hermes worked more or less independently; contracts were based on individual contacts between Hermes employees and customers.

Loosing around 25% of the turnover naturally created a critical situation for Hermes. In 1993, more employees were hired and some agencies were won. However, it soon became apparent that the lost market segment not could be regained. Hospitals were now closing and there were almost no prospects for building new hospitals which caused the market for medico equipment to stagnate.

In 1995, the balance sheets showed a negative result for the first time in the history of the company. The year after, it was decided to put down a managing group made up by three of the employees. The group then took over most of the leadership within the company, the managing director, however, still in the top position. Then in 1997, the director's son joined the company. He had been a member of the board for years and knew very well Hermes. Immediately, he was, in spite of lack of experience with the medico business and market, appointed as vice director of the company which caused the managing director to retire from his duties. Gradually, the vice director took over the responsibility of the company, and in 1998, he officially became the new managing director.

Almost instantly, the new director was aware that some products were not selling well. He realised that he had to cut down on some agencies – and eventually on the number of employees. These adjustments were implemented in the following years; Agencies with a low turnover were unwounded during 1999 and in 2000, a total of 11 employees were dismissed. Out of hands of the director, Hermes simultaneously lost some profitable agencies purchased by large competitors in the market, creating concern and a need for new business thinking.

In 2001, Hermes had 6 employees as well as the director. The managing group was dissolved. The organisational structure of the company was unchanged; each employee had his own area of competence and referred directly to the director. However, after the significant reduction of staff, it was evident that the company needed to reorganise in order to divide for example the administrative tasks between the remaining employees. The situation was rather uncertain, since no formal decision had been made concerning the work structure and tasks where problems were solved on a day to day basis more or less by the different employees feeling responsible for making things run.

The market situation has changed considerably compared to the situation 25 years ago. Today, chief doctors at Danish hospitals, being the primary customer group, have absolute power to decide on the products they want to use in their work. Companies in the medico-business are rather dependent upon good and close relations between their salesmen and these doctors. Furthermore, new competitors may be expected. The Internet opens up to global competition: most medico products are acceptable worldwide and can therefore easily be traded in this way.

The new director himself was in an awaiting position. He was a bit unsure of his role within the company. In reality, it was never his ambition to take over his parents' company and he felt more or less forced to do that when his parents wanted to retire. In a way, he took over the position in concern to his parents' life long work. However, he himself needed some directions for leadership and for formulating overall goals for

Hermes. He felt that he spent too much time on trying to make all employees happy and felt that a re-structuring of the organisation was needed.

Analysing the situation

In 2001, Hermes invited a facilitator, an MSc student, to come and take a look on the company. This facilitator was related with the director and was placed in Hermes for a period of 6 months. The purpose of the stay was to carry out a number of analyses that could support especially the director in his search for finding his standing point within the company and for starting out strategy related discussions that Hermes needed to take anyway.

However, the relation between the facilitator and the director put some constraints on the type of analyses that could be applied. It was for example concluded that a workshop for the whole company would be impossible to apply in the sense that most employees would be reluctant to be open-minded about the problems within the company when others were listening. The analyses, therefore, were carried out through a number of individual interviews with the facilitator and the single employees.

The overall purpose of the analyses was to identify issues and strategic points that could support the director (and indirectly Hermes) in finding his standing point. Analyses were carried out in a series of interviews with the employees, each interview lasting for about 1-2 hours. Dialogue between the facilitator and the director was however not timely constrained and often took longer time. Also the dialogue between the director and the facilitator was more frequent and less formalised however characterised by being completely confidential and based on trust.

It was decided to take a step-wise approach in applying methods and techniques in order to allow for a sound reflection process for the director and the employees in Hermes. Also, it was not possible to foresee to which extent the director and the employees would and could be willing to take part in the analyses. The facilitator, therefore, discussed with the director the imminent issues and it was decided to start by applying a metaphor analysis to understand the problematic situation and to be able to identify issues related to the organisation's culture.

Reading Hermes through metaphors

Generally, the idea behind using metaphors is to remove the fixed perception often put in descriptions of organisations. Using different metaphors and views on the organisation, new insights can create a varied range of possibilities for solving the problematic issues identified. Morgan (1997) presents a number of metaphors and a more detailed description of the approach.

Initially, employees and the director of Hermes were interviewed about their view on the organisation and the situation in Hermes. All interviews were performed individually with the facilitator. Afterwards, the facilitator identified a number of metaphors from the interviews. An overview of the identified metaphors and the interpretation they have provided in Hermes can be found in Table 1. The facilitator made up the readings based on the interviews. Later, they were put forward to each employee and the director and were slightly modified.

The machine metaphor	There is a wish amongst the employees and the director for an increased bureaucracy in terms of delegation of responsibilities, of competencies and formulating work procedures.
The culture metaphor	The culture of Hermes is undergoing huge changes. This is partly due to the new director and partly because of the restructuring where 11 out of 18 employees were dismissed.
The psychic prison metaphor	The employees and the director seem influenced by inner preconceived opinions about the structure of the organisation and the leadership of the company.
The organism metaphor	There has been a change in the surrounding environment due to several purchases from large competitors on the market. This causes Hermes to restructure and find new market grounds.
The brain metaphor	The market as such demands immense knowledge. The cutback in staff has resulted in a need for a certain degree of over capacity of functions and knowledge. There is a need for knowledge sharing and for securing existing knowledge inside the organisation.
The political metaphor	There could be a political game going on between the director and some of the employees as a consequence of the expert roles and external network connections they posses–being vital for Hermes' survival.

Table 1 Overview of metaphors describing different aspects of Hermes

After individual discussions with the director and the employees, the culture, organism, and brain metaphors were identified to be most descriptive of the situation. These metaphors were then further elaborated. Again the elaboration was presented for the employees and different problems were discussed and prioritised.

Reading the metaphors, most problems seemed to be related to the lack of communication and collaboration amongst the employees in Hermes as well as the lack of overall strategic discussion. The facilitator, therefore, developed a so-called storyline (Morgan, 1997) in which the most pressing problems, seen in the metaphors, are mixed with some recommendations on handling these. The problems are prioritised so it is only the most pressing issues that are addressed in this storyline. Figure 1 depicts the storyline. On top, the strategic issue and the communication and collaboration issues are placed. Below, are the recommendations on how to immediately handle the communication and collaboration issues and on handling the lack of a visible strategy.

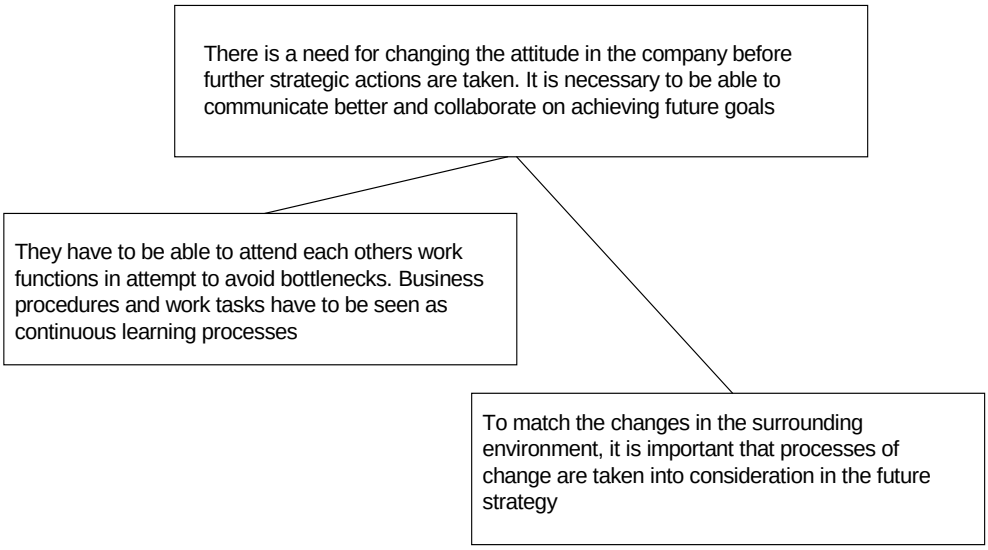


Figure 1 Storyline for Hermes, which depicts the most important problems and strategic perspectives

From the metaphor analysis, it was concluded that some problems were identified in association with the lack of clear strategic objectives. It was concluded that there were some things to do internally in Hermes – things that were independent on which external strategy Hermes would follow. However, since the director of Hermes was concerned with the situation and the various options he was presented for in terms of formulating the right strategy, it was decided to follow this path and apply another analysis on this part.

Rich Picture

The idea of a Rich Picture is to make a graphical presentation, a cartoon-like representation, of the issues, different perceptions, people, places, concerns and processes seen by the employees in Hermes. Only imagination set the limit for the symbols that can be used. The picture is drawn to be able to analyse and improve understanding of a situation and for being able to choose the right actions for improvement of this situation. The picture can in no way be seen as a final statement but more as a reflection or immediate snapshot of the situation. Usually, the picture is drawn as part of an interview – in this case, it is drawn after the interviews by the facilitator only. In this particular case, the Rich Picture shall be seen as an overall picture of the situation in Hermes, – summing up some of the issues already outlined but focusing more on the relationships and variety in both internal and external issues.

Methodologically, it was the facilitator who created the picture using the notes from the interviews as a guide to finding relevant issues and processes. No specific rules were applied in the picture, and the symbols were selected by the facilitator. The Rich Picture can be seen in Figure 3.

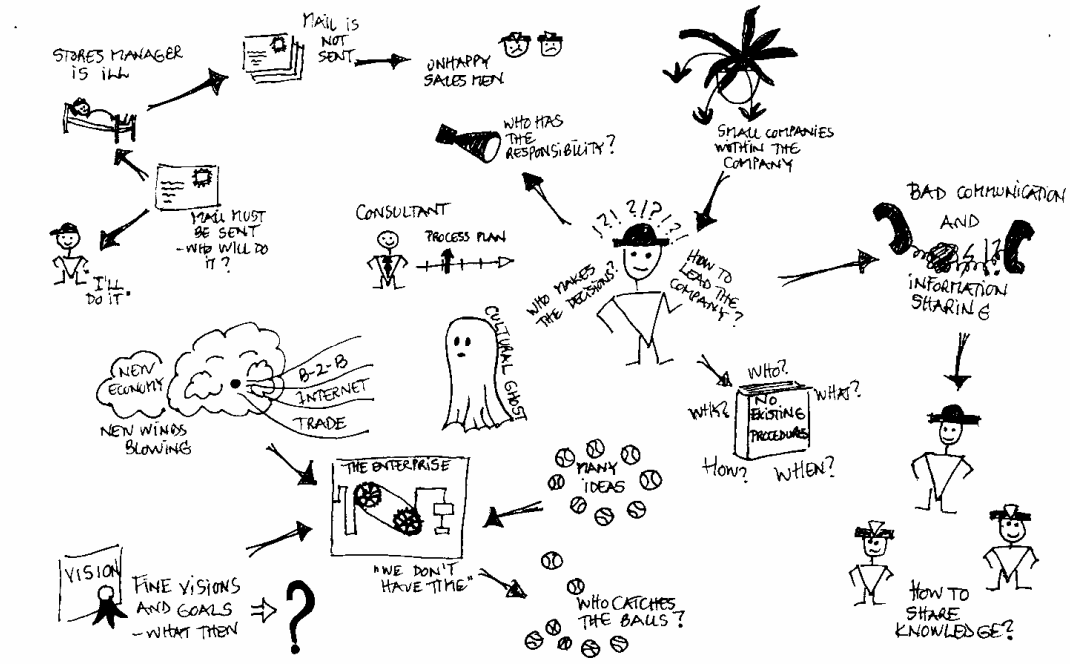


Figure 3 Rich Picture of the problematic situation in Hermes

Compared to the results of the metaphor analysis, the Rich Picture offers an easy overview of issues and relationships identified by the employees in Hermes. Also the significant problems seem to be more clearly visible. For example, the director's role within the company is centrally placed and with a number of relational linkages to other problems. Furthermore, the picture shows 'smaller' issues such as the mail which is not sent out. This issue may seem less important but for the employees, it was a major obstacle in their everyday.

Before the construction of the Rich Picture, the director had some problems picturing himself in Hermes, i.e., finding out his role in Hermes. This is clearly seen in the picture, and after this exercise, the director and the facilitator agreed on discussing various roles he could take on in the future.

The engagement in Hermes was ended with a number of recommendations given to the director as well as a general discussion in Hermes about the process. Both the director as well as the employees in Hermes was happy with the process. The director felt that he now understood much better the reasons for his confusion and could now see some alternative solutions for himself. The employees in Hermes was fond of the process; it had started an explicit and public discussion which before had been carried out "in the dark" without facing the problems and being active in solving these.

Clearly, the engagement had started a process in Hermes. Only time would now show if Hermes was able to go a step further in actively solving problems and developing the strategy for the future which seemed essential for the company.

8. Other Case Studies

The facilitation processes do not need to take so long time and not all problems have to be solved using mathematical models, computers and experts. The case studies shortly described below show real life problem solving were the facilitator was working as an educator, a scientist and an artist.

Community Facilitation (Whyte, 1996)

Noorvick is an arctic Eskimo community located somewhere in Alaska. The community is organised following the old traditions and some new ideas coming from the outside, the so-called developed world. The community has to deal with the authorities; located faraway in a big city, in what concerns development, planning and transfer of resources. Many problems, conflicts and disputes had not been suitable solved. The result was misunderstandings and poor cooperation. These two cultures, Eskimos and public servants, were not able to communicate to each other. Meanwhile lack of work, lack of education centres, poverty, and resignation was the actual situation of the community.

One day a stranger, an artist, arrived to the community. He was a young man, who just finished his education in communication, filmmaking and video techniques. He did not want to make military service and applied to do some social work somewhere in the poor world. He expected to be assigned to some Caribbean island, to one already going on project where he could use his artistic qualifications. The Eskimo community did not know about Tim's speciality and Tim did not know about the needs of the community. Tim was supposed to stay for two years.

In reality the artist knew nothing about Eskimo culture. Coming from a warm region, he had to adapt to cold, snow and ice. He started learning some Eskimo language. He was a fast learner and his natural open-mindness to something new helped a lot.

After this first period, that probably took a couple of months, the artist became an explorer. He formulated the following questions: How can I contribute in the best way with my qualifications to the development of this community? Can I?

After some talks with the leaders of the community and some of the authorities he was able to identify the central problem: The lack of a constructive and cooperative communication between these two cultures. What ought to be done? Both parts were willing to do their best, but they did not know what to do. The lack of trust to each other was deteriorating the situation.

After some incubation time, one night the artist woke up after a fantastic dream. In his dream the conflict was dissolved and a fantastic cooperation between the community and the authorities had begun. He knew exactly what to do. It was 3 o'clock in the morning. He went to his working table and started outlining his ideas. By 6 o'clock he went to bed again, but he could not sleep. He was anxious to meet the leaders of the community to discuss his proposal.

His proposal was: To use the art of filmmaking and the video technology to solve the communication problem. The wishes, problems and ideas of the community would be filmed and sended as videotape to the authorities. The authorities would look at the videos and start a dialogue process to achieve consensus about some proposals.

The leaders of the community were positive about the idea, they wanted to give it a trial but a central question was formulated: Who was going to make the videotapes? The leaders concluded: it had to be the artist; he had the expertise. He did not agree he did not like the idea that the community would be depending on his expertise. What would happen when he leaves the community? The other problem was the language, the films had to be made in the local language and thereafter professionally translated to English, and he was not able to do it in the local language.

Some persons from the community were selected; they formed the group who was going to learn about facilitation, the art of filmmaking and video technology. To select the persons was not an easy task, all the people wanted to learn the art of filmmaking! The artist elaborated a textbook and a series of lessons and workshops. His education program was following two principles: learning by doing and dialectical thinking. The students were very fast learners and highly motivated.

To make the story short, here is the final evaluation: The artist's ideas and actions were a complete success. His students learned to make films to communicate the needs and problems of the community. In his final report he wrote: *The villagers had established ownership of the technology and learned how to facilitate discussions with other villagers and with the authorities.* He was happy but a lot still has to be done. He resided in Noorvick for 11 years.

Career Planning (http://change.monster.com/articles/swot/)
One main activity in my job as a university teacher is the mentoring and facilitation of my student's visions for their future before starting their Master Theses. Creative tools can also be applied to career planning. This tool is a marketing analysis using the SWOT technique. As we have seen, SWOT analysis focuses on the internal and external environments, examining strengths and weaknesses in the internal environment and opportunities and threats in the external environment. We have seen in Chapter 2, the structure of a SWOT matrix.

To construct your own SWOT analysis is to set a course for your career planning, by examining your current situation. What are your strengths and weaknesses? How can you capitalize on your strengths and overcome your weaknesses? What are the external opportunities and threats in your chosen career field?

In a workshop for a group of students I ask them to reflect in a divergent process (brainstorming) about the following issues:

Strengths
Internal positive aspects that are under control and upon which you may capitalize during the planning process:

- Work experience,
- Education, including value-added features,
- Strong technical knowledge within your field,
- Specific transferable skills (e.g. communication, teamwork, leadership skills),
- Personal characteristics (e.g. strong work ethic, self-discipline, ability to work under pressure, creativity, optimism, or a high level of energy),
- Good contacts/successful networking, and

- Interaction with professional organizations.

Weaknesses
Internal negative aspects that are under your control and that you may plan to improve

- Lack of work experience,
- Low grades, wrong major,
- Lack of goals, lack of self-knowledge, lack of specific job knowledge,
- Weak technical knowledge,
- Weak skills (leadership, interpersonal, communication, teamwork),
- Weak job-hunting skills, and
- Negative personal characteristics (e.g. poor work ethic, lack of discipline, lack of motivation, indecisiveness, shyness, too emotional).

Opportunities
Positive external conditions that you do not control but of which you can plan to take advantage:

- Positive trends in your field that will create more jobs (e.g. growth, globalization, technological advances),
- Opportunities you could have in the field by enhancing your education,
- Field is particularly in need of your set of skills,
- Opportunities you could have through greater self-knowledge, more specific job goals,
- Opportunities for advancement in your field,
- Opportunities for professional development in your field,
- Career path you have chosen provides unique opportunities,
- Geography, and
- Strong network.

Threats
Negative external conditions that you do not control but the effect of which you may be able to lessen:

- Negative trends in your field that diminish jobs (downsizing, obsolescence),
- Competition from your cohort of college graduates,
- Competitors with superior skills, experience, knowledge,
- Competitors with better job-hunting skills than you,
- Competitors who went to schools with better reputations,
- Obstacles in your way (e.g. lack of the advanced education/training you need to take advantage of opportunities),
- Limited advancement in your field, advancement is cut-throat and competitive,
- Limited professional development in your field, so it’s hard to stay marketable, and
- Companies are not hiring people with your major/degree.

To further refine the list of Strengths, Weaknesses, Opportunities, and Threats, it is advisable to use some creative and critical thinking. The students should explore their own self-perception of their strengths, but also put themselves inside a prospective

employer's head as he considers their strong points. Avoid false modesty, but also be brutally honest and realistic with yourself. Start out by simply making a list of words that describe you; chances do many of these characteristics comprise your strengths.

One of your greatest strengths can be loving the work you do. Learning to "follow your bliss" should be a critical component of managing your career. Some people know from an early age what kind of work will make them happy. For others, nailing down the self-knowledge that leads to career fulfilment comes from a process of exploring interests, skills, personality, learning style, and values.

In assessing your weaknesses, think about what prospective employers might consider to be the areas you could improve upon. Facing your frailties now can give you a huge head start in career planning.

As humans, we find it relatively difficult to identify the areas where we are weak. But this assessment helps to identify areas where we may need to improve. If you identify a skill that you know is in your chosen field, but you are weak in that skill area, you need to take steps to improve that skill. Past performance appraisals and even your grades and teacher comments from school provide valuable feedback.

Do not forget print resources, such as newspapers, periodicals, and trade publications. Check out job postings on the Internet to get a feel for the relative number of openings in your field. If you are a college student, check out your school's Career Services office for information on file on opportunities and threats in your field.

From this analysis, you will have a road map that shows you how to capitalize on your strengths and minimize or eliminate your weaknesses. You should then use this map to take advantage of opportunities and avoid or lessen threats.

After you have analyzed your strengths, weaknesses, threats, and opportunities, you should use that information to plan how to market yourself.

The marketing planning process entails a three-step process:

1. Determining goals,
2. Developing marketing strategies, and
3. Strategizing an action plan.

Goals - define your career objectives. What is your ideal job upon graduation (or the job you would like to transition to from your current job)? What are some other positions you could accept? What is your five-year career goal?

Marketing Strategies—a broad marketing strategy or "game plan" for attaining your objectives. What are the companies and organizations you are going to target to obtain your goals - your ideal job? How will you communicate with these firms? The strategies you identify should utilize all of the resources available to you, such as your personal network and a partnership with a mentor.

Action Plan - according to marketing principles, marketing strategies should be turned into specific action programs that answer a number of questions, including: What will be done? When will it be done? Who is responsible for doing it? Your key task here is

setting specific timetables and deadlines for getting the career and company information you identified in the marketing strategy step.

The elevator problem (Ackoff, 1978)
This is a classic case study in which the tenants of a large office building complained about the increasingly poor elevator service. A consulting firm specializing in elevator-related problems was employed to deal with the situation. It first established that average waiting time for elevators was too long. It then evaluated the possibilities of adding elevators, replacing existing elevators with faster ones, and introducing computer controls to improve utilization of elevators. For various reasons, none of these turned out to be satisfactory. The engineers declared the problem to be unsolvable.

When exposed to the problem, a young psychologist employed in the building's personnel department made a simple suggestion that dissolved the problem. Unlike the engineers who saw the service as too slow, he saw the problem as one deriving from the boredom of those waiting for an elevator. So he decided they should be given something to do. He suggested putting mirrors in the elevator lobbies to occupy those waiting by enabling them to look at themselves and others without appearing to do so. The mirrors were put up and complaints stopped. In fact, some of the previously complaining tenants congratulated management on improvement of the elevator service.

The Traffic Team Example (http://www.teambuildinginc.com/tps/020he1.htm)
In 1983, the management team of a large organization was struggling with a severe traffic problem on the road leading to their location. The road crossed four miles of protected wetlands, so it could not be widened without significant environmental impact. Each morning the traffic leading to the site was backing up the entire four-mile length of the road, adding an hour to commuting time. The resulting aggravation caused productivity to drop significantly.

Three years earlier the management team had hired traffic consultants to solve the problem. Their work focused on a future widening of the road and looked promising, but their attempts to devise short-term solutions failed miserably.

As a last resort, management decided to assemble a team of people from the company to address short-term solutions. The ten-person team was comprised of engineers, clerical personnel, line workers, and union representatives. This team met twice a week for a month, culminating in a series of recommendations that ultimately improved the traffic flow both into and out of the site.

The simplicity of the team's recommendations surprised management. For example, in one recommendation the team suggested that trucks making deliveries to the site be prohibited from doing so between the hours of 6:00 a.m. and 9:00 a.m. Since there were many deliveries to the site at this time, this recommendation immediately removed some of the slowest, most cumbersome traffic clogging the road. Additional recommendations were also made that similarly contributed to easing the problem. The result was almost instantaneous improvement in the traffic flow.

At the outset, management had doubted that this team could solve the problem. After all, experts had been studying it for three years. But in turning to their own people they found a solution, and in so doing, they tapped into the essence of team creativity. Innovation has no bounds, and when it is combined with a process of collaboration that multiplies its effect, it has great power.

> Assuming that the way experts or others formulate problems will lead to a solution is often wrong. Experts are only experts within the box that defines their expertise. But solutions to most problems that arise within the box are found outside of it. What is needed is out-of-the ordinary thinking, "crazy" ideas, without fear of the ridicule. Encouragement of "crazy" ideas ought to be the norm at organizational meetings.
> Ackoff and Rovin (2005)

9. Conclusions

Everything can de approached scientifically and everything can become art. Our main message is that in what concerns problem solving in complex situations, it is advisable to use both the scientific and the artistic attitudes. More satisfying results will be achieved, the risk of failures will be minimized, all the participants will be empowered, and everybody will learn from the experience, even the facilitator.

In the case of the planning problem, the Ministry could have ordered the decision support system from a firm instead of in-house development. But in such situation the consequences of failure were too serious and could easily become a political issue. In Denmark, there are too many bad experiences with implemented computerized decision support systems that were extremely expensive to develop and implement and that did not solve the problem, on the contrary caused more problematic situations.

In the case study related to the planning of the examinations the facilitator was educated as an engineer, but in the social process he was managing he was an artist although he was not aware of that. He used his intuition to solve conflicts, supervised the experts and used time to dialogue with the users. He was able to create a common language, a common culture and motivate all participants. He was managing by designing.

In the other case studies, the facilitators were both professional artists and scientists, being able to use these complementary approaches when it was needed.

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CHAPTER 8

ENHANCING YOUR CREATIVITY: A 10-POINT GUIDE

I do not seek the meaning of creativity.
I seek the experience of being creative.

1. Introduction

Educational systems are primarily designed to teach children to look for the one right answer. This is not always a good strategy in problem solving because often it is the second, third or even tenth 'right' answer that is the best to solve a problem. In some cases ten 'right' answers might not do the job, but a combination of them could give the needed impetus to a real solution. Nothing is more dangerous than an idea, when it is the only one you have. For more creative thinking, we need different viewpoints. *Divergent thinking* is needed to produce as many ideas as possible. The best way to get a creative idea is first to get a lot of ideas. This is why professional photographers take so many pictures when shooting an important subject. They may take twenty or sixty shots. In doing this, they will purposely change the different parameters of the shoot. That is because they know that out of all the pictures they take, there may be only a few that capture what they are looking for. The process of selecting those few is known as *convergent thinking.*

Based on my experience as a teacher and lecturer in the area of creativity and problem solving, and as a facilitator for groups of professionals in creative workshops and conferences, I have reached the following conclusion: The lack of divergent thinking ability is the main bottleneck in the creative process.

This bottleneck could be ameliorated if each individual would work on developing his own divergent abilities. Very simple means, tools or exercises can be utilised. Below I outline some simple guides to enhance ones ability to diverge. These guides or tools are the most popular. Each have been used and are still used in practice by many people, including artists, scientists, and other problem solving professionals.

Ideas rose in clouds; I felt them collide until pairs
interlocked, so to speak, making a stable combination.
H. Poincaré

2. Soft Thinking

Most professionals are hard thinkers. Hard thinking emphasises the following concepts: logic, reason, precision, consistency, work, exactitude, algorithms, efficiency, results, reality, directness, focus, analysis, specificity, abstraction, etc. Economists, engineers, and scientists are hard thinkers, but you also find hard thinkers in the fields of management, sociology, and psychology, to name some few.

Soft thinking emphasises the following concepts: metaphors, dreaming, humour, ambiguity, play, approximation, heuristics, pleasure, process, fantasy, paradox, diffusion, hunches, generalisation, analogy, etc. Soft thinking is a useful approach for divergent thinking.

Soft thinking tries to find similarities and connections among things and processes, while hard thinking focuses on their differences. Soft thinking is how the right hemisphere of the brain solves problems, while hard thinking is the favourite approach of the left-brain.

Similes and metaphors are excellent tools that can help to think something different. A simile is a figure of speech explicitly comparing two unlike things, e.g. in *cheeks like*

roses. A metaphor is a figure of speech in which a word or phrase literally denoting one kind of object or idea is applied to another to suggest a likeness or analogy between them, e.g. in *the ship ploughs the sea*. A simile always contains the words *as* or *like*.

Similes and metaphors can help to a get a different slant on a problem. For instance in the early twentieth century, Niels Bohr develop a new model of the atom by comparing it to the solar system. Within this framework, he figured that the sun represented the nucleus and the planets represented the electrons. The use of similes or metaphors is a way of thinking and a way of seeing. When it is used, it brings about a certain view of a matter a kind of focused insight.

All theories of organisation and management are based on implicit similes or metaphors that lead us to see, understand, and manage organisations in distinctive yet partial ways. Thus, it has been considered the use of metaphors to give new insights of organisations by regarding them as machines, organisms, brains, cultures or political systems.

Make a metaphor or a simile for a problem with which you are currently dealing or an idea that you are developing. To do this, simply compare your concept to something else and then see what similarities you can find between the two ideas, i.e., use one idea to throw light on another. Think about this: How is developing a knowledge policy for a firm similar to coaching a football team? How is managing a group of consultants similar to conducting an orchestra? How is developing a sales strategy similar to courting a woman?

Similes and metaphors are essential elements in poetry. They encompass other poetic devices as well, particularly imagery, which is the use of descriptive language to create pictures in the reader's mind. Poetry emphasises rhythm, other intricate patterns of sound and imagery, and the many possible ways that words can suggest meaning. Poetry derives from a Greek word, *poesies*, meaning "making" or "creating".

Every act of creation is first
of all an act of destruction.
P. Picasso

3. Deconstruction/Reconstruction

Creative thinking is not only constructive; it is sometimes destructive. Often you have to break out of patterns, routines, and rules, establish ideas, organisations and systems, to discover or create something new. To change, you have to destruct first. Then you can reconstruct or redesign. Be flexible. In this way you can produce many alternatives. This is how to diverge.

Many times, one falls into habits and routines. Your mind becomes lazy and out of shape, as you fall under the seduction of repetition. You follow set patterns and rules without noticing what is going around you. Suggestion: Observe how you do things and try doing them differently. Take a different route to work. Play the role of some famous person for a day. Play the revolutionary and change the rules. Have rule-inspecting and rule-discarding sessions. Finding and eliminating outmoded rules can be a lot of fun.

Almost every advance in art, medicine, agriculture, engineering, marketing, politics, education, and design occurs when someone challenges the rules and tries another approach. Copernicus broke the rule that the universe was anthropocentric. Beethoven broke established rules in composing his symphonies. Einstein broke the rules of Newtonian physics when he suggested relativity. Creative thinkers are constantly challenging or breaking the rules.

Some rules are so successful that they become immune to criticism. These are known as "sacred cows". Go after your sacred cows. Periodically inspect your ideas and assumptions to see if they are contributing to or inhibiting your creative thinking. If the latter, destruct, eliminate and then innovate. This is a creative pattern.

If social poetising is the act of giving form to something by naming it, then deconstruction is the act of removing that form, at least on a temporary basis. *Deconstruction* is a process of demystifying a text, a narrative, an organisation or a system, by taking it apart to reveal its arbitrary logic and assumptions. The text or narrative to be analysed may be well-established (e.g., a problem formulation, a plan or a proposal) or may have been informally generated in an organisation by a group. Deconstruction examines what is left out of a text, what is not mentioned, excluded and concealed. Deconstruction does not cause us to see things as scattered and formless, but it does have the beneficial effect of showing us that things are not as simple as they seem.

Deconstruction reverses the process of construction and shows us how artificial is our ordinary taken-for-granted view of the social world. Deconstructions reveal the internal contradictions within discourses, and identify suppressed tensions or conflicts in a text. We need to look for what has been suppressed within the text, because usually whenever a discourse appears unified or whole, something must have been suppressed for it to appear so. Deconstructing implicit assumptions and breaking the boundaries of a system can give the basis for the reconstruction of a new text or system.

Some examples of deconstructive strategies are: Focus on marginalized agents or elements, expose false distinctions, look for assertions that make explicit or implicit recourse to claims of "naturalness", analyse what is not said or deliberately omitted, focus on disruptions and contradictions, and use metaphors to dispel inaccuracies.

You can shake, assault, massage, caress, and take a whack at the habits, rules, and conventions that keep you thinking the same old stuff. Do the opposite of what is expected. Perhaps play the fool and see what crazy ideas you can come up with. Reverse your perspectives. You will see things differently. Niels Bohr felt that thinking like a fool was essential. During a tense brainstorming session, he told colleague: "We all know your idea is crazy. The question is whether it is crazy enough."

As soon as you have made a thought, laugh at it. Getting into a humorous state of mind not only loosens you up, it enhances you creativity. First, humour stretches you thinking; it shows you patterns for thinking something different. Second, humour forces you to combine ideas that are usually not associated with one another. Third, humour permits you to take things less seriously. Humour may not solve your problem, but it will put you in a more conductive mood to do so.

Art objects, art installations, computer arts, etc. are usually developed based on a process of deconstruction/reconstruction. This process is the creation of art from art or technical artefacts. Sometimes this process of creation becomes art in itself. For example a word processing program enables its users to easily write, correct and modify prose or poem. It allows its user to create art. Designers expend hours, days, and weeks designing the interface. Their goal is to create a user-friendly environment. Sometimes, the finished interface becomes art, in itself. In fact, certain deconstructed interfaces have already been sold to museums to be displayed as artistic works. This process of deconstruction/reconstruction has also been used in other art disciplines as for example: virtual architecture, sensual computerised experiences, and performances.

I have always imaged that Paradise
will be a kind of library.
J.L. Borges

4. Imagining

Practice and cultivate your imagination. Imagination is the ability of see or visualise a problem from different perspectives. The open-minded attitude of the artist typifies the kind of thinking you use in the imaginative phase when you are generating ideas. Picasso said once: “Every child is an artist. The problem is how to remain an artist after growing up.”

The “what if” technique is an easy way to get your imagination going. There are two steps: First, simply ask “what if” and then finish the question with some contrary-to-fact idea, condition or situation. Second, answer the “what if” question. The provocative answers you find can show directions for new ideas, but you have to formulate many “what if” questions. Einstein had to do that before he boarded his imaginary elevator.

Some examples: What if my organisation becomes non-hierarchical? What if I become the boss of my boss? What if we elect our bosses by lottery? etc. Asking these questions is not only fun, it also gives you the freedom to think along different lines. It is a manner of freeing yourself from the deeply ingrained assumptions you have about your work and your personal life. Or, you can also ask what if someone else was solving your problem, for instance: Leonardo da Vinci, Jesus, Nelson Mandela, Ghandi, or perhaps a seven-year-old schoolgirl. What special expertise would they add? What innovative changes would they make?

These questions by themselves may not produce practical, creative ideas. The answers are usually impractical or improbable, but their value consists in that they lead your thinking in alternative patterns, they help you to diverge. Even if the probability that any given “what if” question will lead to a useful idea is not very high, the more often you practice this process, the more productive you will become.

Imagination is an essential ability in art as it is the case of Trash Art, Installation Art and Conceptual Art. Picasso took some elements of an old bicycle and makes a sculpture of a bull. You can train your imagination by collecting some solid waste from a container and use it for creating pieces of art as sculptures, objects or installations trying to communicate a message or a concept. Once I found in a container an old TV set, a carpet

and some candles; then I arrange these objects in a space of the gallery as a little church. Then I entitled this installation: *The new altar*. Using my imagination I was able to give a message (a concept) using simple and cheap materials, a message that everybody could easily understand.

Einstein formulated the importance of imagination and fantasy in the following sentences:

- Imagination is more important than knowledge.
- When I examine myself and my methods of thought, I come to the conclusion that the gift of fantasy has meant more to me than my talent for absorbing positive knowledge.

Without this playing with fantasy no
creative work has ever yet come to birth.
C.G. Jung

5. Playing

A natural medium for creative expression is play. To play means to engage in recreation, to deal in a light speculative manner, to move or function freely within prescribed limits, to perform music, to act in a dramatic production, to engage in a game, etc. All these activities can enhance your creativity. Play involves the language of imagination, the emotions, the senses, the inner self, active participation and freedom to invent and imitate. Play allows for the ventilation and release of negative energy. It encourages creative, growth-oriented self-expression and communication. Essential ingredients of play include humour, manifest joy, spontaneity and creativity.

Play is a creative process and a safe way for people to try out, explore, experiment, and fumble about with ways of learning. Creative play provides an opportunity to: develop the imagination, think independently, cooperate and communicate, healthfully release emotions, experience freedom of choice and engage in health-engendering recreation.

There is evidence that play increases: problem solving skills and abilities, creativity and creative thinking skills, and social skills. Some people allow themselves to play only when they are under the influence of some mind-altering substance, drugs, food or alcohol. They are afraid of their inner child and need an excuse to justify their creative expressions. People of all ages must be able to find healthy ways to play in order to have rich, full, joyful, creative lives.

The performing arts of theatre and court entertainments provided opportunities for Leonardo da Vinci to put his mechanical and automated inventions and scenic apparatuses to work, while given free rein to his taste for humour and brilliant strokes of inspiration. He was playing. An analogous, playful spirit is discerned in the precision and detail of his extraordinary drawings of mechanical looms and clocks.

I have observed in the development of software that one can experience two extremes. The first extreme is when writing software is considered work. The developer relentlessly chases a bug. He perfects a piece of code through sheer persistence and fortitude. It can be satisfying, but it is not fun. The other extreme is where writing software is play.

Experimentation yields unexpected solutions. The patterns revealed by the trail of a bug lead to insights. Crafting a solution is a tangible, creative experience. Many professionals have experienced these two sides of the creative process. The play side allows them to experiment with various approaches to generate new ideas, e.g. to diverge. The work side enables them to put it into a useful form, i.e., to converge.

Let's say your organisation is having difficulties from competition by other firms. You can play with this problem. Select a group of people and create a game that simulates your problem, for instance let one member of the group be a princess and everyone else in the group be suitors for the hand of the princess in marriage.. Or, within an organisation you can use theatre to solve some management problems and conflicts by changing roles, for instance let the director be the secretary and the secretary be the sale manager, etc. and the carry out a performance.

You can train your playing abilities with the masters of creative play: children. Play is a serious business for young children and the opportunity to play freely is vital to their healthy development. One of the strongest benefits of play is the way it enhances communication and social development. Play is a self-expressive activity that draws on the child's powers of imagination. Play is open-ended, free form and children have the freedom to try out new ideas as well as build on experiment with the old.

Improvisation theatre is the area where different techniques are used to enhance the ability of the actors towards spontaneity and creativity. The art of the instructor is to create synergy effects when combining the fantasy of two or more players.

Know or listen to those who know.
B. Grawan

6. Exploration

A creative thinker needs the raw materials from which new ideas are made: knowledge, experiences, concepts, facts, feelings, etc. These raw materials might come from different disciplines. You can find something innovative if you venture off the usual path. To be an *explorer* is to search for ideas outside your speciality, to look about or through without being systematic and to pay attention to unusual patterns. Use as many different senses as possible and look out for anything that might be of interest.

An important activity in divergent thinking is to recognise the basic idea of one situation and to apply it to another. For instance, the roll-on deodorant was an adaptation of the ballpoint pen. Even that was inspired by the way children make big snowballs. Understanding the behaviour of electricity was inspired by scientific knowledge about the flow of water. If you are working in the area of design of IT-systems, probably it is a good idea to explore in the areas of architectural design, engineering design, product design, design of strategies, forest management, design of organisations, etc. You can get innovative ideas and learn about tools and methods. Most advances in science come when a person or a group is forced to change fields of interest.

A problem does not necessarily belong to a specific field. A problem will usually have technical, economic, human, social and political aspects. Economists will always reduce

a problem to an economic problem. Engineers will regard it as a technical problem. And so on. This is the curse of specialisation. To explore is not only to get ideas from other disciplines, but also to regard a problem from different perspectives, to break boundaries, enhance cross-fertilisation and create innovative approaches.

When going to parties, reunions, meetings and conferences, I am always looking for a conversation with somebody working in an area new to me. I learn a lot from people who love to tell about their work. I have had interesting conversations with a circus clown, an air traffic controller, a bus driver, a comedian, a nurse, a prostitute, a priest, a librarian, and a gardener. As an explorer, I am always looking for ideas outside my disciplines. I think of it as searching for gold.

To be an explorer means to find good information around you. I found good ideas in fashion shops, garbage dumps, museums, airports, restaurants, botanical gardens, and other places. Natural surroundings are great places to explore for ideas. Mother Nature has solved a variety of problems in a creative way. Bionics is a field of engineering in which ideas from natural systems are adapted for human uses.

One of my favourite activity as an explorer is to go to libraries. I will look on bookshelves that I have not seen before and will randomly pick up some books for further study. Often, I will find a book about an area or a subject that I did not know it even existed. That book I will borrow for further study. My favourite part of the library is the section of books for children. One can also be an explorer in the Internet. But, you should be very critical about the information you get from Internet searches.

Leonardo da Vinci wrote: “It should not be hard for you to stop sometimes and look into the stains of walls or ashes of a fire, or clouds, or mud or like places, in which…you may find really marvellous ideas”. Da Vinci was an explorer, studying water, the flight of birds, human anatomy; drawing buildings, houses, machines, people and animals; working with astronomy, mathematics, engineering and theatre. But, this technical and scientific research was always a sort of preliminary investigations and preparations for his works of art.

The philosophers have only interpreted the world
in various ways; the point is to change it.
K. Marx

7. Dialectical Thinking

Dialectical thinking has two main characteristics. First, it places all the emphasis on change; it talks about process and movement. Second, it states that the way change takes place is through conflict and opposition. Dialectics is always looking for the ambiguities, contradictions, paradoxes and conflicts within people or situations as the main guide to what is going on and what is likely to happen.

The three main propositions that are put forward about opposites and contradictions:

- The interdependence of opposites, e.g., light supposes darkness.
- The interpenetration of opposites, e.g., there is some light in every darkness and some darkness in every light.

- The unity of opposites, if we take an opposite to its very ultimate extreme, and make it absolute, it actually turns into its opposite, e.g. if we make either light or darkness absolute, we cannot see anything. Thus, we are blind.

When thinking dialectically in creative workshops. Workshop participants pit two or more opposing views in competition with each other, developing each by providing support, raising objections, countering those objections, raising further objections, and so on. Key benefits of applying a dialectical approach to creative problem solving are:

- The participants are forced to identify opposing options, and
- The discussion helps to yield a strong, informed perspective that stands up to criticism.

Let us hear from some dialectical thinkers:

- Picasso: "Art is a lie that makes us realize the truth."
- Bohr: "There are two kinds of truth, small truth and great truth; you can recognise a small truth because its opposite is a falsehood. The opposite of a great truth is another great truth."
- Einstein: "Am I or are the others crazy?"

The above-mentioned quotations are paradoxes, e.g. statements that are apparently contradictory or absurd and yet might be true. Artist and scientists know that paradoxes are crucial to the creative process. That is because they force you out of narrow thought paths and challenge you to question your assumptions. Dialectical thinking is a way to deal with paradoxes. Bohr, Einstein, Marx, Hegel, etc were great dialectical thinkers.

Let's see some practical applications of dialectical thinking in connection with creative processes. Consider a situation is modelled in hard terms, e.g., focusing in economical and technical aspects (thesis). Now, model this situation in soft terms, e.g., focus on the human and social aspects (antithesis). At this point, we have two opposites. Lastly, we try to unite them, developing for instance a process to approach the situation from two different perspectives (synthesis). This approach may be called divergent thinking by dialectical thinking.

Looking for ambiguities is a good way to train for dialectical thinking, when you are looking for new ideas. For example, what is half of 8? Logical thinkers will answer 4. But, if you assume that the question is ambiguous, you will look for other answers such as o, 3, E, M, S, etc; all depending on how you define "half".

Designers of tools, artefacts and computer systems focus primarily in the properties of their creations, often forgetting the way in which they are going to be used, e.g. the environment and the users habits. In such situations, dialectical thinking can contribute to the elaboration of different kind of solutions, appropriate for different situations.

Listen to your dreams. Dreams are the sources of many ambiguities and paradoxes. Often, if you are working with a difficult problem, your dreams will provide some extra analysis about the problem that is plaguing you. It is well known in art and science that good and innovative ideas have first appeared as dreams. This is the result of the so-called incubation process.

In art, dialectical thinking is always present. For instance, a painting is dialectical related to its frame, and the frame and the painting have to be a unity, wholeness or in dialectical language, a synthesis. A sculpture and an installation are related to the space where they are located. Object and environment is a unity. You find dialectical thinking in the theory of colours. For example, red is dialectically related to green. Redness is enhanced by greenness and vice versa. Some rules for dialectical thinking developed within different artistic disciplines are:

- Take nothing for granted
- Be spontaneous
- Transform
- Break patterns.

I think and think for months and years.
Ninety-nine times, the conclusion is
false. The hundredth time I am right.
A. Einstein

8. Learning from Failure

Errors are a message that you are diverging from the well-travelled route. They are not a sign of weakness. A large part of creative thinking is not being afraid to fail. If you are not failing now and then, it is a sign that you are not trying anything very innovative.

Failure only means that we known what does not work and gives us the opportunity to try a new approach or practice to get better. Failure does not mean that you are incompetent because you did not get it right or do it well the first time. If you do fail, you learn what does not work, and the failure gives you an opportunity to try a new approach.

Consider the story of a new bank president who went to his predecessor. Upon being introduced, he quickly said: I would like to know what have been the keys of your success. The older man looked at him for a moment and replied: “Young man, I can sum up in two words: Good decisions.” To that, the young man replied: “I thank you immensely for that advice, sir. But, how does one come to know which are the good decisions.” “One word, young man”, replied the old man: “experience”. “That is all good and well”, said the young executive: “But, how does one get experience?” “Two words”, replied the old man: “bad decisions”.

Use error as a stepping-stone to a new idea. In reality, the whole history of discovery is filled with people who used erroneous assumptions and failed ideas as stepping-stones to new ideas. Columbus thought he had found a shorter route to India. Edison knew 1800 ways not to design a light bulb. One of Madame Curie’s failures was radium. An inventor is almost always failing. He tries and fails maybe a thousand times. He experiments and tries over and over and keeps trying and failing until he learns what will work. He knows how to fail creatively.

We learn by our errors. An individual’s errors are the whacks that lead him or her to think differently. Negative feedback means that the current approach is not working, and it is up to you to find a new one. We learn by trial and error. If you hit the bulls eye every time, either the target is too near or too big, or both.

Chance favours only the prepared mind; this is *serendipity*. Strengthen your "risk muscle". You keep it in shape by trying new things. Taking risks means experimenting with life, gaining experiences and learning about yourself and others.
By strengthening your risk muscle, you are increasing your courage and self-confidence. By trying something you have not tried before you are being courageous.
It demands courage to be creative.

Science and art history informs us that stories of great success are also stories of great failures. At school, Einstein was so dull that he was called "Dull Albert". His teachers described him as: mentally slow, unsociable and adrift forever in his foolish dreams. Darwin wrote: all my masters and my father considered me, a very ordinary boy, rather below the common standard in intellect. Keynes failed every year his examinations in economics. Van Gogh was unable to sell his paintings. Many great painters had experienced the same failures. These men were like other men. The only difference was that every time they failed; they bounced back. This is called failing forward, rather backward. You learn and move forward. Ask yourself after every failure: What did I learn from this experience? Learn from your errors and keep going.

Great discoveries and improvements invariably
involve the cooperation of many minds.
H.G. Bell

9. Collaboration/cooperation
Effective collaboration involves the use of the strengths of the individual members in the problem solving process. It is a purposeful interaction, formed to solve a problem, to create or discover something or to change something. We need collaboration because in the modern society we cannot "do it all" by ourselves. We need knowledge, insights, comments, questions and ideas from others. Other perspectives add value and richness to our own. Collaboration is a constructive way to create divergent thinking. In effective collaboration, individuals learn to identify their strengths and talents as well as increase self-esteem by sharing and achieving common goals.

The following goose metaphor captures the essence of collaboration. Why do geese fly along in a V formation? By flying in a V formation the whole flock adds at least 71% greater flying range than if each bird flew on its own. When a goose falls out of formation, it suddenly feels the drag and resistance of trying to go it alone and quickly gets back into formation to take advantage of the lifting power of the bird in front. When the lead goose gets tired, it rotates back in the formation and another goose flies point. Finally, when a goose sets sick or is wounded and falls out of formation, two other geese fall out with that goose and follow it down to lend help and protection. They stay with the fallen goose until it is able to fly or until it dies; and only then do they launch out on their own, or with another formation, to catch up with their flock.

Collaboration is a central capability in many kinds of sport. This is for instance the case of football. A football team's effectiveness is not only conditioned by the capability of each member but by their ability to collaborate and support each other. Football can become art when collaboration and individual capabilities produce a synergetic

performance. In jazz music, jamming is the practice of free style jazz improvisation. In this type of music, the musicians play, or riff, off of one another to create in a collaborative way new sounds, at once unpredictable and harmonious.

Collaboration abilities can be strengthen trough cooperative learning and group problem solving. Cooperative learning requires communication among group members while solving problems. Members are expected to interact with one another as they take on roles. They collectively engage in solving problems, explain their thinking to one another and discuss ways to resolve conflicts as they arise. The group arrives at common understandings only when the individuals in the group are able to present their points of view and to discuss their perspectives on problems.

The necessary features of successful cooperative learning experiences are: positive interdependence, individual accountability, interaction, communication and discussion. In cooperative learning activities, individuals learn: to deal with differences, to recognise each other's strengths, to show respect by acknowledging the contributions of all group members to the task at hand, to take turns, to gain practical experiences in dealing with peers who are culturally, academically or physically not like themselves, and to engage in the process of sharing their experiences and ideas.

I travel not to go anywhere, but to go. I travel
for travel's sake. The great affair is to move.
R.L. Stevenson

10. Process/Product

Two central elements in any problem solving activity are the process and the product. Rational problem solving, the one usually practiced by professionals and scientists, focus on the product. Creative problem solving, the one practiced usually practiced by artists, focus on the process. There is indeed a dialectical relationship between the process to moves and the product. Innovative products demand a central emphasis on the process.

The product or deliverable or result of problem solving can be firstly a material thing, for example a manufactured article or secondly, it can itself be a process, for example an improved method for customers or for clients.

There is a series of process steps for creative problem solving to guide one through what at times can seem like a daunting jungle. The key guidelines are the need for periods of divergent thinking, followed by a period of convergent thinking. The value of focusing on the process is shown most vividly when problem solving with groups. This is more complicated than working alone, although potentially capable of producing more creative and effective solutions. Actually, most of the guidelines presented above are focusing on the process.

In connection with problem solving with groups, it is a good idea to appoint a manager of problem solving process, *a facilitator*. Actually, there are two social processes to be managed: the problem solving process and the group process. The problem solving process is the way the group acts to solve the task of generating ideas going through divergent and convergent phases. The group process is related to the manner in which the

individuals in the group work together, how they learn, how they communicate, their social and power relationships, and how they deal with conflicts. Obviously, these two processes interact in various degrees. In ideal group work, these two processes support each other. We talk about *group dynamics*, when energy and synergetic effects are created in the group work as a result of well-balanced processes where the task is just as important as the group trust and identity.

The facilitator is constantly thinking (reflecting) and listening to the deliberations in the sub-groups so he can suitably intervene. An intervention means communicating with the group, giving information and knowledge, and encouraging the participants to think about important topics.

Let us elaborate now about the essence of the facilitation process, i.e., the attributes by means of which facilitation as management can be qualified or identified. As we have seen, facilitation is a purposeful process carried out by one or several persons that goes forward between two interacting processes. First, the logical/rational/legal process carried out by a purposeful group (the problem solving group) that wants to achieve some goals. This process has been called the problem solving process, and is the scene of objectivity. Second, the non-logical, irrational, or illegal process that refers to the chaotic social interactions provoked by each single participant, by the participants' relations to each other, or by the participants' relations to the facilitator of the group. These interactions bring into play the participants own subjectivity, intuition, fantasy and feelings. This second process can be called the problem destruction process and is the scene of much subjectivity.

The facilitation process will move in the grey zone between the scene of objectivity and the scene of subjectivity. The rational and the irrational processes are fighting one another. Each one wants to impose over the other. They are in conflict, but they need each other because, while the problem solving process seeks to achieve realistic solutions, the irrational process will be the basis for the production of new ideas. Rationality needs chaos, and chaos needs rationality. Due to this contradiction, rationality vs. chaos, we can stipulate that facilitation is a *dialectical* process.

Management also involves three other central factors: Power, communication and learning. These factors are always present in any facilitation process and should be reflected upon and articulated before, during and after the problem solving process. Facilitation becomes an art when a synergistic effect is achieved due to the constructive interaction between rational and irrational processes. The facilitator then becomes the director of a performance, where each participant plays a central role. By the end of the performance, if synergy has been created, all the participants will explode in a rush of happiness and pleasure; the pleasure of working creatively and collectively to achieve some goals. It is the same feeling that football players experience after a match where the victory has been the result of a combination of individual creativity, collective hard work and suitable facilitation (coaching).

Concluding, we can first stipulate that being member of a problem-solving group can enhance your creativity and your ability to participate in collective creative processes. Secondly, learning the art of facilitation is an important qualification when working with problem solving. It demands a lot of creativity to support a group in a creative problem solving process.

Great thoughts reduced to
practice become great acts.
W. Hazlitt

11. Everyday creativity

Everyday creativity is the ability to see a situation in many ways and to continue to question until satisfaction is reached. All human beings are creative and their creativity can be enhanced or discouraged in many ways. Any time people are confronted with situations for which they have not already learned and practiced a response; some degree or kind of creativity is needed.

Creative thinking is much more than using our fantasy to produce innovative ideas. Creative thinking can become a lifestyle, a personality trait, a way of looking at the world, a way of interacting with others and a way of living and growing. Living creatively means developing your talents, tapping your unused potentials and becoming what are capable of becoming through self-discovery and self-discipline. Then life becomes art. The richest fuel for ideation is first hand experience.

You can develop your creative abilities by approaching everyday problems in an innovative way. Four of the key abilities are: Fluency, flexibility, originality, and elaboration. *Fluency* is the elaboration of many ideas, alternatives or solutions. *Flexibility* is the ability to process information or objects in different ways given the same stimulus. *Originality* involves getting away from the obvious and commonplace from habit bound thinking. *Elaboration* is the ability to embellish ideas with details.

There are plenty of ways to train and develop your creativity at home. Playing with children can be a very rewarding experience. Get some paper and some crayons and draw fantasy figures. Or, get some clay to construct small sculptures. You could also invent new games. If you do not have children, visit a family with children and propose some creative activities.

Creative cooking can become one of the most challenging activities. To create a new dish that combines in innovative way nutrition, taste, smell and sight can be a nice experience. Your friends or family will be ready to give you feedback and evaluation of your performance. In cooking, learning by failure is very important.

Train at home with your family the abilities of group problem solving. For instance, plan your holidays or what to do the next weekend. You will be surprised how easily children learn to facilitate and to use simple, creative techniques. These learning experiences will be very useful for your children in their future at school and later at work. You can also plan and carry out a party in a creative way.

In the community where you live, there are surely problems that lend themselves to group problem solving in a creative way. Group problem solving can also be established in the community groups that practice sports, games or hobbies.

There are several attitudes, simple techniques and ways of life that will awake, support and develop your creative potentialities. We have seen some of them. Everyday creativity in different situations is a very important attitude and way of life that surely will enhance your creativity also at your work. Let us see some recommendations that work for individuals and group of persons.

Break away from routines. Try to break some of them, do things that you have not done before. In the morning, at work, at the evenings, you should start with small things. Go to the library and study books about subjects you have not known even existed before. Read about the life of highly creative people: Leonardo, Einstein, Picasso, etc. Experiment for instance while cooking. If you do not cook, begin just now because cooking can become a highly creative activity. Your relatives will surely assess the quality of your innovative dishes.

Create inspiring circumstances. Potentially everything can be used as a source of inspiration, as far as we are open to seeing connections or relations to our own situation. Words, pictures, books, films, persons, etc. can stimulate the ability of our brain to produce analogies. Music, pieces of art and performances are usually central sources for inspiration. Some people have been inspired by walking in a forest or at the beach to find an analogy to solve a problem. Some examples are Velcro, potato chips, etc. Inspiration is a key factor while creating metaphors. Studying poetry you can see how inspiration is a way to create metaphors.

Be both open and closed minded. Open minded means to be willing to consider new ideas, to diverge, to expand, to fly, and to see wholeness. Closed minded means to be willing to consider a single idea, to converge, to focus, to dig, and to see details. A creative person is able to fly, to have an overview and to dig, to discover the roots. It is a mythical creature half a condor and half a mole, with a well balanced big brain that switches from flying to digging.

Search for information and knowledge. Now-a-days using Internet you have access to an enormous amount of information and knowledge that can be of relevance to your problem or the subject you are dealing with, but you have to be critical about the quality of the obtained information and who is providing it. This is important because you do not need to start from zero or rediscover the wheel before designing a new vehicle. You have to be creative while searching for information and knowledge, finding the right key words, and here serendipity plays a central role. Serendipity is the faculty of discovering pleasing or valuable things by chance; this means that you have to be ready, well prepared to be able to see the illuminating idea or clue.

Last, use your fantasy and visualise a situation then try to simulate how such situation develops. Creative people are usually visual thinkers. Relax, play some relaxing music and daydream about a situation or a problem. Stop working if you are not able to find a clue to a situation or a problem, do something else or go to sleep. You might incubate in your dreams and often illumination will arise when you wake up. Get acquainted with artists, inventors, designers, composers and other creative persons and learn some of the tricks and techniques they use when they run out of ideas.

12. Manifesto for Children

Paul Torrance was a tireless advocate for creativity and the creative potentials of all people of all ages and abilities. His "Manifesto for Children", also called "How to grow up creatively gifted" provides seven ingredients for being more creative at any age, see further Torrance (1995).

Manifesto for Children

1. Don't be afraid to "fall in love with" something and pursue it with intensity. (You will do best what you like to do most.)
2. Know, understand, take pride in, practice, develop, use, exploit and enjoy your greatest strengths.
3. Learn to free yourself from the expectations of others and walk away from the games they try to impose upon you
4. Free yourself to play your own game in such a way as to make good use of your gifts.
5. Find a great teacher or mentor who will help you.
6. Don't waste a lot of expensive, unproductive energy trying to be well-rounded. (Don't try to do everything; do what you can do well and what you love.)
7. Learn the skills of interdependence. (Learn to depend upon one another, giving freely of your greatest strengths and most intensive loves.)

Reference

Torrance, E. P. (1995) Why Fly? A philosophy of Creativity, Ablex Publishing Co., Norwood, NJ, USA.