Creative Problem Solving for Managers

Developing skills for decision making and innovation

Second edition

Tony Proctor

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Creative Problem Solving for Managers

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How can managers tackle complex problems?
How do you encourage innovation?
How do you implement new solutions?
Is creativity the key to management success?

This accessible text provides a lively introduction to the essential skills of creative problem solving. Using extensive case studies and examples from a variety of business situations, *Creative Problem Solving for Managers* explores a wide range of problem solving theories and techniques, illustrating how these can be used to solve a multitude of management problems.

Thoroughly revised and redesigned, this new edition retains the accessible and imaginative approach to problem solving skills of the first edition. Features include:

- Blocks to creativity and how to overcome them
- Key techniques including lateral thinking, morphological analysis and synectics
- Computer-assisted problem solving
- Increased coverage of group problem solving techniques
- New website containing in-depth cases and a PowerPoint presentation

As creativity is increasingly being recognised as a key skill for successful managers, this book will be welcomed as a readable and comprehensive introduction for students and practising managers alike.

Tony Proctor is Professor in Marketing at Chester University College Business School and was formerly Senior Lecturer in Marketing and Head of the Department of Management at Keele University.

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Preface to the second edition

I began the first chapter of a book I wrote some years ago called *The Essence of Management Creativity* by saying it was about creativity and problem solving in management. This book, too, follows a similar theme, but I have expanded my ideas somewhat since I wrote the other book.

I am often asked whether the various approaches I outline in this book really work. The answer to this, I feel, is really only known by those who use the methods. Moreover, it is always difficult to know if you would have been able to find an answer to a problem which you did not know existed without the aid of the techniques I outline here. Or, indeed, for that matter, whether you might solve the problem more to your satisfaction by using other methods.

The material contained in this book should appeal to a wide audience. I originally thought the subject matter was something which would perhaps most interest experienced and mature adults. I discovered that not only was it something which appealed to experienced managers but it also held the attention of management students of all ages and backgrounds. One of my most enlightening experiences has been getting final-year undergraduates interested in the subject.

The subject matter of this book will appeal to people who have a variety of different interests in management. Whether your primary interest is in accounting, personnel management, marketing, production, research and development, and so on, does not really matter since the subject matter contained in this book is relevant to all these interests. However, you must approach the subject with an open mind; and all the methods, no matter how ridiculous they may seem, should be treated seriously – but not so seriously that they cannot be enjoyed. The greatest barrier to appreciating the subject matter of this book is scepticism.

The book first sets the scene for management creativity. It explains what creativity and creative problem solving are thought to be. It then considers why creativity management is considered to be important. The various blocks to creative problem solving are explained, as are the actions that are required to get around these difficulties. A chapter outlines some of the most recent ideas relating to creativity and creative problem solving. This chapter is important since it provides a background and explanation for many of the steps in the creative problem solving process which are considered in subsequent chapters. Each step in the creative problem solving process is explored in some depth, and illustrations are given of some of the principal mechanisms used to help structure and stimulate thinking. The final chapter is given over to considering how interaction with computers can help to stimulate creative problem solving.

Throughout the book there are ample illustrations of the key points. There are specific case studies attached to each chapter and an additional set of case studies on the website: http://www.routledge.com/textbooks/0415345421. The latter invite the reader to make use of all the knowledge he or she has gained about the creative problem solving process through reading the book.

I would like to express my thanks to Dr Ioanna Papasolomou of Intercollege, Cyprus, and Dr Rosmimah Mohd-Roslin of the MARA University in Malaysia, for their contributions of case-study material. My thanks also to Dr Elspeth McFadzean for her thoughts that techniques might be considered in the light of whether they are useful in *paradigm preserving*, *paradigm stretching* or *paradigm shifting*.

Tony Proctor, 2004

Chapter 1

Creativity and its importance in business

Aircraft pollution

With the advent of the jet engine and advanced navigational instrumentation the airline industry was born. The death knell was sounded for the transatlantic passenger liners, and as one product life-cycle drew to a close a new one began. The jet engine heralded a paradigm shift in civil aviation, and creativity was needed to harness, to exploit and to market the applications of the newfound technology. Some fifty years on, important questions are now being raised about the viability of air travel in the long term. High levels of environmental pollution from aircraft emissions during flight and the environmental impact of the growth of airports in densely populated areas are only two of the issues that are becoming a cause for concern. Creative thinking is required to find ways of dealing with both of these issues.

INTRODUCTION

In this chapter we shall review some definitions of creativity and highlight the importance of creative problem solving in enabling business executives to cope with novel or new problems. We give some consideration first to defining creativity and then to distinguishing between creativity and innovation. Various notions exist on how ideas arise in our mind. These are introduced in this chapter and developed further in Chapter 3. Creativity in business is important, and managers need to possess the ability to gain creative insights. We look at the importance of creativity to business and managers, picking out those instances where it is most needed and relating it in particular to the notion of paradigm shift. In the later sections of the chapter we look at characteristics of creative thinking and creative thinkers, highlighting the qualities of a creative person and pointing to how creative skills can be achieved through training.

SOME DEFINITIONS OF CREATIVITY

Creativity involves an ability to come up with new and different viewpoints on a subject. It involves breaking down and restructuring our knowledge about the subject in order to gain new insights into its nature. However, any definition of creativity is complicated because the concept has many dimensions.

What is creative thinking?

Creativity is a concept which we often come across in our everyday conversation. We hear of creative people, admire creative objects of art or read creative books. Yet despite our almost innate understanding of what it means to be creative there is much confusion about the nature of creativity.

Wertheimer ([1945] 1959) suggested that creative thinking involved breaking down and restructuring our knowledge about something in order to gain new insights into its nature. Understanding our own cognitive model of reality may therefore be an important determinant of our ability to think creatively. Kelly (1955) and Rogers (1954) both supported this argument by maintaining that we can be creative by gaining an understanding of how we think about a subject. Creativity is something which occurs when we are able to organise our thoughts in such a way that readily leads to a different and even better understanding of the subject or situation we are considering.

Maslow (1954) thought of creativity as having two levels. He envisaged primary creativity as the source of new discovery, real novelty, or ideas which depart from what exists at a given point in time. He saw secondary creativity as a characteristic possessed by many scientists in their collective search for discovery achieved by working alongside other people, extending the work of previous researchers, and exercising prudence and caution in their claims about new insights or ideas. He envisaged creativity as an aspect of human nature that was to be found universally in all human beings. In children he felt it to be an easily observable phenomenon but suggested that it seemed to become lost in adults, surfacing mainly in dreams with the relaxation of repressions and defences. It was a view that was echoed subsequently by Stein (1974), who argued that without such an assumption the techniques for stimulating creativity would have no application.

Torrance (1965) defined creativity as:

> The process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses or formulating hypotheses about the deficiencies; testing and retesting them; and finally communicating the results.

This contrasts with that of Newell *et al*. (1962). They adopted a criterion-based approach, which suggests that any problem solving may be creative. Indeed, Haefele (1962) argues that every one

of us must be creative to some degree because we have to find new solutions to newly presented problems.

Rickards (1985: 5) defines creativity as 'the personal discovery process, partially unconscious, which leads to new and relevant insights'. Rickards (1988: 225) also advocates a view of creativity as a universal human process resulting in the escape from assumptions and the discovery of new and meaningful perspectives, or as an 'escape from mental stuckness'. In broad terms he believes creativity is to do with personal, internal restructuring.

Creativity is very much concerned with how we imagine things. Although language is a medium of expressing our creative feelings, our creativity is often gained through images and sensations which are difficult to express in words. As Koestler (1964) said: 'True creativity often starts where language ends.'

Weinman (1991) considered that creativity is the ability to go beyond the mundane and obvious and reject the traps of repetition and pre-set categories. Similarly, Gilliam (1993) defined creativity as a process of discovering what has not been considered – the act of making new connections.

More simply, creativity can be thought of as 'the production of novel and useful ideas in any domain' (Amabile *et al.*, 1996: 1155).

Yet one more approach, along with many others, is offered on the Internet: 'Being creative is seeing the same thing as everyone else but thinking of something different' (http://www.ozemail.com.au/~caveman/basics/definitions.htm).

These various definitions seem to agree that creativity involves an in-depth thought of a subject and an ability to come up with new and different viewpoints. However, any definition of creativity is complicated because the concept is multi-faceted.

INVENTION AND CREATIVITY

Invention is an act of creativity that results in a device, process, or technique novel enough to produce a significant change in the application of technology.

Invention is an act of creativity that results in a device, process, or technique novel enough to produce a significant change in the application of technology. The application is fundamental to invention. The element of novelty has various forms; it may be a new device or process, or even material, but it may also consist of a combination of existing knowledge in a manner not previously considered. For example, James Watt added a separate condensing chamber – a new device – to Thomas Newcomen's atmospheric engine and created the steam engine.