

Preface

5 functions, 5 people, 5 viewpoints...

Author's Note:

A preface is useful only if it is objective and allows the still-potential reader to get a precise idea of how he/she can benefit from the book. As a firm believer in this logic, I asked five different people involved in innovation to freely express their opinions about the book (the only instruction: no more than one and a half A4 page each). Here are these five viewpoint-prefaces. The book has also benefited from this multiple reading, which enabled the final version to be expanded and deepened. So, my thanks to these five people.

An expert's viewpoint:

Antoine Heron, promoter and President of Association for Citizen Innovation and Sustainable Development; founder and first President of Innov'Acteurs, French Association for the Promotion of Employee-Driven Innovation; former Director for Promotion of "Initiative and Creativity" and Study Director of Total Quality Institute at Renault Group

A Research viewpoint:

Yves Kaluzny, Senior Vice President - International Affairs and Cooperation, Directorate of Nuclear Studies (DEN) of CEA

A Science Education viewpoint:

François Romon, Professor Emeritus, University of Technology of Compiègne (UTC), co-author of "Management of innovation; from strategy to projects" (Vuibert, 2006; in French) and of "Dictionary of Innovation Management" (Vuibert, 2008; in French)

A Business Management Education viewpoint:

Bernard Calisti, professor of marketing and innovation, Department of Markets and Innovation at EMLyon, co-author of "HR and Sustainable Development: Another vision of performance" (Editions d'Organisation, 2005; in French) and "Entrepreneurship" (collective work EMLyon, Pearson edition, 2009)

An Industry viewpoint:

Yves Fanjas, Innovation Manager, Research and Innovation Department, AREVA

An expert's viewpoint
Testimony of a Corporate
Employee-Driven Innovation Manager

At a time when our whole society is gradually becoming aware of the magnitude of the innovation challenges that lie ahead, to:

- take into account the significant issues posed by "sustainable development",
- take advantage of the tremendous technological changes,
- develop a dynamic and competitive economy in the service of citizens,

Angelo Beati's book is a timely guidebook to managers on ways and means to release the immense potential of collective innovation.

A manager talks to other managers

The subject of collective innovation is not new and the past decade has abounded in publications on this topic. But for the first time, the writer is not a consultant or independent expert but a company manager, someone who stimulates innovation from within and who has been successfully leading his "innovation" organization for some years.

Thus he approaches this complex and at the same time delicate question from a new angle.

Better than others, he sees the resistance, the obstacles to innovation: individual resistance, of course, but also collective resistance which he must understand, bring up-to-date and try to reduce. Thus he has learned to circumvent the difficulties, to observe the methods that "work", the pitfalls to avoid. He doesn't keep all these irreplaceable observations for himself but, as a good educator of managers, he does his utmost to show the right approaches, the best ways to prepare people and the environment, formulating problems in order to stimulate an innovative and effective approach.

This book provides a comprehensive approach to stimulating creativity within teams responsible for innovative projects, taking into account all the techniques available today on this topic.

It clearly outlines the steps that will enable an organization to engage collectively in a process of continuous innovation, based on the innovative project management process that Angelo is perfectly

acquainted with. It also demonstrates how to make resolutely innovative, “breakthroughs” approaches complement the continuous improvement initiatives, which help us to do what we do here and now always better, more cheaply and more safely.

Along the way, he gives us “hands-on” advice, specifies the operational rules that work well and reminds us of the iron laws, including the rights of employee inventors.

An invitation to travel and to enjoy innovating

Behind a very didactic presentation, rigorous and as thorough as possible, there lies an undeniable passion for win-win innovation processes, i.e., processes which are dynamic, welcoming and open to all; processes which combine the patient effort to find effective solutions with the pleasure to provide, through collective innovation, relevant answers to the problems of our organizations and our society.

What I particularly like about this book is the constant and fruitful relationship between “institutional” innovation, the fruit of structures dedicated to innovation, and “Employee-Driven Innovation”, which comes mainly from different operational levels; it is rare that such a close interlocking of these two innovation dimensions is so well integrated into a comprehensive vision and a coherent approach.

Thank you to Angelo for this demanding work that you successfully brought to fruition; even if innovation is a living process which never finishes and is ever-changing, there comes a time when the reflections must be set down on the printed page... only in that way are experiences shared, confronted and confirmed... until the next edition!

Antoine HERON
Paris, August 2009

A Research viewpoint
Creativity for Innovation
is not only a matter for specialists

There is a natural tendency in the research community to closely associate the concept of innovation with that of high technology. A particularly good example is that of mobile telephony which has developed with the growth in the capacity of networks and electronic components, going from archaic "big radiotelephones" to concepts such as the iPhone which include many features that have been made possible by advances in microelectronics. Advances in science and technology are important drivers of innovation, particularly as regards the technological breakthroughs that can dramatically change the nature and features of the products to be marketed.

Nevertheless, it would be very reductive to confine innovation to the purely technical. It must more widely take into account all aspects that are not technical: good or better market anticipation, or even creating the need, allowance for social factors and attitudes in the idea-generating and ripening process... That's what Angelo Beati's book teaches us in particular: creativity for innovation is not simply a matter for specialists, but should thrive as part of a mobilization of all the actors in the company, by maximizing their abilities.

It might be objected that such an approach is well suited for consumer products or for Innovation in Marketing – finding the "trick " that will make the product more attractive than the competition's and thus helping it to penetrate the market – but for the strong technical culture industries, this does not work and there is no salvation outside a more conventional development process that relies both on "hard" sciences and knowledge of a number of people in the company – the experts. There are also the constraints that may exist in terms of product safety or standardization, that are likely to restrain free creativity and thus make virtually unuseable the ideas of people who don't have the total experience of these famous experts.

In this context, Research and Development in the field of nuclear energy seems to me to be a good example to illustrate the universality of the methods to which Angelo Beati's book initiates us: it is a mature industry (developing as early as the 60's) which is governed by very strict security rules and therefore strong constraints on products that

may be brought to market: nuclear reactors, design and manufacture of uranium- or plutonium-based fuels, long-distance inspection devices of nuclear facilities... In addition, the lead times for product development before bringing them to market are very long, taking into consideration the period of qualification: usually around 10 years for a new fuel concept or 15 years (or more) for a new reactor. It is also an area that relies heavily on feedback from in-service nuclear facilities, whether for the continuous improvement of products (and therefore for "innovating") or in relationships with the Safety Authority. As a result, the organizations needed to develop expertise in different areas (materials, fracture mechanics, hydraulics, thermal hydraulics, neutronics, radiation protection...) were quickly put in place: these organizations can guarantee the quality and safety of products, but are not they a brake to innovation? Shouldn't we stick to a classical method of incremental development based on scientific and technological advances that can be integrated at a "reasonable" rate?

Even in such an industry that may seem very conservative, we can no longer, in a context of global competition and also increasing demand for nuclear energy to contribute significantly to the resolution of challenges arising from growing energy needs while preserving the climate, stick to very traditional patterns of innovation. This is the challenge of collective creativity-based innovation: to renew this process by acting upon organizational aspects and above all on the mobilization of energies, in the form of the strong and durable involvement of Senior Management and the operational mobilization of all the staff. All this cannot be done without the experts: it would be a pure waste not to rely on their knowledge, but they must be put in a position to give the benefit of their expertise to the innovation process without restricting more spontaneous creativity. Conversely, only with a rigorous and well defined process can spontaneous creativity give more conclusive results and become a decisive benefit to the company.

Angelo Beati's book gives us the keys to implement such an approach, helping to get the most out of the qualities of the various players. This particularly clear-sighted book initiates us to these approaches in a very pragmatic and operational way. Obviously, it is now for each player to adapt the principles to their own reality and environment.

Yves KALUZNY
Paris, November 2008

A scientific education viewpoint
"Mastered creativity",
a challenge for the whole Company

Angelo Beati offers here a well-documented book which is very useful for all professionals involved in innovation projects.

The book is very useful primarily because the author forcefully recalls the urgent need for innovation in these days of great economic turmoil (financial crisis but also environmental awareness) and acceleration of technological breakthroughs, particularly through the clever choice of the given examples (such as that of diaper manufacturers who innovate at first with new fabrics and new paper to meet the needs of the working mother who no longer has time to wash several loads a day, then innovate with other techniques to meet new environmental constraints); finally, because the author does not hide the difficulty of managing innovation (very significant examples are given of failures, like that of RCA, a giant of American industry supported by a powerful R&D base, which eventually purely and simply disappeared because of two major errors in strategy on the audio disc and video disc).

The book is also well documented on the phases of emergence and design of innovation projects which the author chose to focus on (the strategic level of the company project portfolio and the level of management of its technological resources are only touched on here). They are studied with great precision, many practical examples and numerous management tools, such as the IDEAR method, making it easier for the reader to learn this difficult art: the control of collective creativity.

Angelo Beati's approach aims to educate the reader; he takes apart the mechanism of "mastered creativity", by relying, here again, on examples such as moving from one carriage to another via the top deck of double-decker French Bullet Trains (TGVs) or using time-saving access walkways on both sides of aircraft, before giving the tools and methods for practical application.

Without claiming to work as a theorist, Angelo Beati nevertheless opens up some new ways of managing innovation. Introducing support for collective creativity into the rating of experts or writing "technical

invention briefs" in the company are some of the ideas that the author proposes in this work and that practitioners would, in my opinion, benefit from implementing.

Underlying the issue chosen by Angelo Beati is the problem of "open science". The relevant methods of "mastered creativity" through everyone's commitment in the company, proposed by the author, in effect imply that the whole set of technical possibilities is available to all. It is not sure if the general development is moving in this direction with the increasingly pronounced dependence of basic research on completed industrial projects with the current tendency to patent everything, and the rise of "proprietary" technical hubs to the detriment of open hubs.

I highly recommend the work of Angelo Beati to practitioners of innovation in business, project managers, project team members, experts and trainers in Employee-Driven Innovation because it is directly derived from the experience of the project manager, a true teacher, who has thought his experience over and who has documented it with great care.

François ROMON
Paris, March 2009

A Business Management Education viewpoint

Shared Creativity at the service of Human Resources Sustainable Development

One of the great merits of this work is that it offers a global, comprehensive, consistent and straightforward approach, full of contemporary management references, which incorporates many dimensions of innovation.

The systematic approach taken by the proposed method is far more effective than the half-hearted striving for innovation from which many projects suffer.

The present book always emphasizes the collective aspect of work, especially in creativity.

It also gives pride of place to the very modern concepts of situational management: getting the best out of the ideas of everyone, whatever their role and their usual position in the company.

At each step in the method, the goal is recalled, the importance of the step is explained, the techniques and the suggested tools are described. And, when necessary, there is a brief recap of the theoretical foundations.

As the chapters progress, the innovation process as a whole takes shape: from initial brakes to innovation to total quality, from intellectual property issues to the selection of creativity tools, from discoveries to creative initiatives.

It must be emphasized that one of the key features of the work done by Angelo Beati is the constant reference to operational levels.

The author is right to focus on the idea that innovation is a matter of teamwork. In this sense, he does not consider Upper Management as the only body producing innovative ideas.

On the contrary, he emphasizes the importance of involving all the operational levels, regardless of the grade or duties of the operators involved.

This broad view of innovation, combining a wide range of professions, functions and persons within a given entity, makes shared creativity a way of *binding people together*.

Such a practice seems to be very favourable to the commitment of the teams.

This makes it an aspect of Human Resources Sustainable Development which is of the utmost importance to us.

And we appreciate the close link between a technological dimension, which is a traditional feature of innovation, and a human dimension, which also determines the outcome of the innovative creativity-based approach.

Basically, although the goal of "mechanizing" the innovation process is a constant challenge, nothing prevents us from trying to "master" with the help of a tool kit and a method-based approach these "creative leaps forward", which are so famous in advertising creation and so fundamental in Innovation Approaches.

These topics are part of the ambition which is an underlying feature of Angelo Beati's project. They are presented in a straightforward and detailed manner, accessible to all and without any ostentatious research.

It is easy to read this book, to browse it, to select passages that will inspire a particular reader and to refer to it regularly in answer to the questions raised by a practitioner or a curious novice.

Clear and well documented, this book is primarily a guide to using creativity in innovation.

With regard to the stakes of innovation in all companies, it contributes just as much to the thinking about the possible directions in which an organization can develop, as to the conduct of innovative projects.

To be used without moderation.

Bernard CALISTI
EM Lyon, October 2008

The Industry Viewpoint

Don't just give lip service to innovation

Here is the work of a practitioner for practitioners: Angelo Beati shares his ten years experience based on substantial theoretical knowledge that the author takes care to keep up-to-date with institutes at the forefront of the field. He himself teaches at the Collège de Polytechnique.

With Angelo, we "got started in innovation" together, lucky to belong to a company whose boss had already focused on innovation in 1998 to prepare it for the challenges of 2015. To use his term, one should not "just give lip service" to innovation: the aim is to build an approach which deals with different sides of innovation with rigor and thoroughness. In fact, innovation can't be improvised; we have to prepare all necessary conditions carefully to make it successful. Angelo was one of the key players of this approach, driving the process, training creative groups, etc.

Since then, he has expanded his work to the entire Group. The actions it has undertaken in several business units proved sufficiently conclusive for word of mouth to work and for other units of the Group, in increasing numbers, to ask him to help to solve a problem, to establish a process, to provide training... Isn't this the best sign of recognition of his competence and practical contribution to the business?

From the top-down initiative of a business unit, we arrived, through a process of "positive contamination" on the scale of a group of more than 70 000 people, at the emergence of an approach where the bottom-up joins the top-down. We have built up a large staff of facilitators, now numbering a hundred ⁽¹⁾.

Angelo is a hyperactive enthusiast - some would say a trail-blazer - able to communicate his passion, demonstrate by experience the benefits of a structural approach to innovation... and make people want to become a facilitator! For anyone wishing to apply innovation, and for

⁽¹⁾ Numbers in 2011; AREVA is now a Group of about 48 000 people (after the sale of a subsidiary) and the trained Creativity Facilitators are higher than 140.

experienced practitioners, this book provides a great deal of advice born out of experience. I think the reader will be converted in his/her turn...

Following a "classical" approach, the book moves from the problem to the implementation of the solution, via the successive stages of the innovation process. It is a high-powered approach that has proved itself in all cases where there is the possibility to establish a functional specification precise enough to assess the rightness of the proposed solutions. In cases where there is not the possibility to establish such a functional specification, as the final product has to meet expectations which are not yet formulated by the market, the process is no longer as linear. However, approaches to creativity outlined in the book still apply.

This book will be of interest to two categories of readers:

- those getting started in innovation, who will use it as a guidebook which gives detailed elements of a pragmatic approach, clarifying the key points and pitfalls to avoid. It does not however try to turn the reader into a specialist, or to replace the methodological help of a practitioner experienced in the difficulties of Innovation Approaches,
- those who have already applied innovation: this book offers them a shared experience and best practices.

Like any book of this type, it is not the last word on the subject. However it is to be regretted that this book, which rightly insists on the preliminary phases of innovation (creativity management, selection of ideas) does not go into greater detail on the later phases (innovation portfolio management, development of the ideas right up until they become marketable products) during which the emerging innovation needs to be followed carefully (if not "jealously guarded") to avoid the many pitfalls into which it may disappear before reaching completion. He does not address provisional economic evaluation either, such a tricky subject, especially where long term projects are concerned.

Yves FANJAS
Paris, October 2008