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Creativity in Innovation

Welcome to the July 2015 issue of the *Technology Innovation Management Review*. This month's editorial theme is Creativity in Innovation. We welcome your comments on the articles in this issue as well as suggestions for future article topics and issue themes.

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Overview

The *Technology Innovation Management Review* (TIM Review) provides insights about the issues and emerging trends relevant to launching and growing technology businesses. The TIM Review focuses on the theories, strategies, and tools that help small and large technology companies succeed.

Our readers are looking for practical ideas they can apply within their own organizations. The TIM Review brings together diverse viewpoints – from academics, entrepreneurs, companies of all sizes, the public sector, the community sector, and others – to bridge the gap between theory and practice. In particular, we focus on the topics of technology and global entrepreneurship in small and large companies.

We welcome input from readers into upcoming themes. Please visit timreview.ca to suggest themes and nominate authors and guest editors.

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About TIM

The TIM Review has international contributors and readers, and it is published in association with the Technology Innovation Management program (TIM; timprogram.ca), an international graduate program at Carleton University in Ottawa, Canada.

Editorial: Creativity in Innovation

Chris McPhee, Editor-in-Chief

Welcome to the July 2015 issue of the *Technology Innovation Management Review*. This month's editorial theme is **Creativity in Innovation**, and it is my pleasure to introduce our guest editors: **Patrick Cohendet** and **Laurent Simon**, who are professors at the HEC Montréal business schoool (hec.ca/en/) in Canada, where they are also Co-Directors of Mosaic, the Creativity & Innovation Hub (mosaic.hec.ca).

For this issue, our guest editors have brought together authors from Canada, France, New Zealand, the United Kingdom, and the United States to share their practical and theoretical perspectives on creativity and innovation. Their insights are drawn from diverse domains, including entertainment, gastronomy, luxury goods, power generation and distribution, watchmaking, among others.

In the introductory article, the guest editors, **Patrick Cohendet** and **Laurent Simon**, describe the ubiquitous challenge that organizations face today in managing creativity to foster innovation. They highlight the need to manage: i) ideation processes to foster creativity, ii) the tension that exists between the logic of creation and production; and iii) disruptive innovation to transform a traditional industry. This introduction illustrates how the contributions in this issue add to the understanding and practical capabilities required to face this management challenge.

Next, **Stephen Cummings**, Professor of Strategy at Victoria University of Wellington, New Zealand, **Chris Bilton**, Reader in the Centre for Cultural Policy Studies at the University of Warwick, United Kingdom, and **dt ogilvie**, Distinguished Professor of Urban Entrepreneurship at Rochester Institute of Technology, United States, argue that organizations should no longer view creativity as a singular concept. They propose an alternative view emerging from the creativity literature, which is based on three ideas: i) creativity is a cluster of different and discrete qualities, or "creativities"; ii) creativity is a dynamic act of combining creativities, or "creativitying"; and iii) creativity in organizations is the product of multiple activities of groups, and should no longer be viewed as an individual act.

Ignasi Capdevila, Associate Professor at PSB Paris School of Business in France, and guest editors **Patrick Cohendet** and **Laurent Simon**, examine creative processes in the case of Ferran Adrià and his team of chefs at the best restaurant in the world: elBulli. The case traces the evolution of the restaurant and the team's approach from humble beginnings through to the development of a creative powerhouse of ideation and innovation. In particular, the article highlights the deliberate coupling and decoupling of creative processes within the restaurant itself and the wider organization, the importance of coding and documentation, and the role of organization ambidexterity in fostering creativity innovation.

Gilles Garel, Professor of Innovation Management at the Conservatoire National des Arts et Métiers (CNAM) in Paris, France, re-examines the case of the innovative Swatch watch with new information and insights to emphasize the important relationship between creativity and knowledge in innovative projects. For managers, the key innovation lessons derived from this case are: i) to draw upon the knowledge held in existing designs from other domains and ii) to recognize and encourage interaction between the creative concept and the related engineering knowledge required to deliver the innovation.

Joanne Roberts and **John Armitage** professors and Co-Directors of the Winchester Luxury Research Group at Winchester School of Art, University of Southampton, United Kingdom, consider the role of creativity in the production and delivery of luxury. Although luxury goods often have strong associations with creativity and innovation based on the artistry, skill, and technology required to produce them, the handcrafted and timeless nature of many such goods requires the preservation of existing production and delivery methods, thereby limiting the scope for radical creative transformations. Through various examples, the authors highlight the complex interaction between luxury and creativity, which managers need to understand so that they know when and where creativity should be embraced and when it should be resisted to preserve the luxury status of their goods and services.

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Raouf Naggar, Head of Strategic Development at Hydro-Québec's Research Institute (IREQ) in the province of Quebec, Canada, shares his organization's business model approach to the development of a knowledge and idea management system to help turn creative ideas into innovation. By applying the business model canvas, developed by Yves Pigneur and Alexander Osterwalder, to the challenges facing the research institute, the organization was able to develop a compelling value proposition for the clientele and stakeholders of the knowledge and idea management system while also gaining an understanding of the resources and activities required to deliver and finance this value proposition.

Finally, guest editor **Laurent Simon**, interviews Boris Verkhovsky, Director of Acrobatics and Coaching at Cirque du Soleil, about the role of leadership in the management of creative processes. By linking Verkhovsky's experiences and insights with the literature on creativity, Simon derives lessons from the actual practice of leadership for creative collaboration.

We hope you enjoy this issue of the TIM Review and will share your comments online.

For our August and September issues, we are accepting general submissions of articles on technology entrepreneurship, innovation management, and other topics relevant to launching and growing technology companies and solving practical problems in emerging domains. Please contact us (timreview.ca/contact) with potential article topics and submissions.

Chris McPhee
Editor-in-Chief

About the Editor

Chris McPhee is Editor-in-Chief of the *Technology Innovation Management Review*. He holds an MASc degree in Technology Innovation Management from Carleton University in Ottawa, Canada, and BScH and MSc degrees in Biology from Queen's University in Kingston, Canada. Chris has over 15 years of management, design, and content-development experience in Canada and Scotland, primarily in the science, health, and education sectors. As an advisor and editor, he helps entrepreneurs, executives, and researchers develop and express their ideas.

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Introduction to the Special Issue on Creativity in Innovation

Patrick Cohendet and Laurent Simon

> *"Today… corporations spend a great deal of money and time trying to increase the originality of their employees… but such programs make no difference unless management also learns to recognize the valuable ideas among the many novel ones, and then finds ways of implementing them."*
>
> Mihaly Csikszentmihalyi
> Professor of Psychology and Management

Managing creativity for innovation is a key challenge in today's economy; therefore, the management of ideas will play in increasing role in driving the growth and resilience of organizations. Rather than simple inspired insights, ideas have to be addressed as complex socio-cognitive processes, to be organized and managed. To benefit from the full value of new ideas, management must constantly balance the formal and the informal, the logic of creation and the logic of production, and must learn to couple idea-generation processes and innovation processes through renewed knowledge management practices. In this introduction to the *Technology Innovation Management Review's* special issue on Creativity in Innovation, the guest editors highlight the need to manage: i) ideation processes to foster creativity, ii) the tension that exists between the logic of creation and production; and iii) disruptive innovation to transform a traditional industry.

Introduction

Managing creativity in order to accelerate and improve innovation is the key management challenge that will be faced by companies in the coming years, and this challenge will be faced in an environment of ever-increasing complexity. These were the main findings of a recent face-to-face survey of 1500 CEOs, general managers, and senior public sector leaders around the globe (IBM, 2010). The effects of rising complexity – hybridizing business issues with social, environmental, and ethical concerns – and the sudden convergence of digital, social, and mobile spheres, call for CEOs and their teams to lead with bold creativity, connect with customers in imaginative ways, and design their operations for speed, agility, and flexibility to position their organizations for sustainable success.

Business leaders across 16 sectors recognize creativity and innovation as their major challenges, and yet, they admit that they are not fully prepared to meet this challenge, as discovered in a recent survey of business trends and challenges by Strategy& (Rothfeder, 2015). The surveyed leaders identified three paths to explore in preparation for the upcoming evolution of business and markets: operational flexibility, two-way relationships with customers, and a greater focus on the medium-term future needs of customers. If social technologies, (big) data management, and analysis are going to play an important role in these transformations, then management – structure, processes, culture, and leadership – still has an essential role to play in setting up the right context for innovation to thrive.

The articles contributed to this special issue include many examples of actual drastic changes made by organizations attempting to cope with creative challenges. Managing creativity is a challenge for all the different functions of the enterprise and leads us to reconsider traditional ways of managing marketing, human resources, logistics, accounting, and finance, as well as strategy and planning. As a result, creative or-

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ganizations expect to make deeper internal changes in their operations, and to experiment with drastic, sometimes disruptive evolutions of their business model to realize their strategies. To succeed, they take more calculated risks, find new ideas, and keep innovating in how they lead and communicate internally and externally. Thus, embodying creative leadership, reinventing customer relationships, engaging customers as individuals and communities, building operational dexterity, empowering employees, amplifying innovation through partnerships, and unlocking a sense of community within the organization, are some of the emerging priorities put forward to transform existing organizations into creative and resilient businesses.

Not least among these characteristics are the paradoxes and tensions underlying the creation, production, marketing, and distribution of creative products. These tensions are particularly strong in specific industries, such as in the luxury goods industry, as Roberts and Armitage (2015) emphasize in their article in this issue. Because of the volatile and dynamic nature of the environment, firms must navigate through contradictory requirements and develop organizational solutions and innovative practices to survive and prosper (Eikhof & Haunschild, 2007; Lampel & Shamsie, 2000). Thus, many research studies have outlined different and sometimes paradoxical logics, ways of thinking, and knowledge and skills that coexist and co-evolve in the same firm or during the same development process. Paradoxes stemming from these industry features include tensions between creative and managerial controlling logics and values, diverging versus converging thinking, individual versus collective creativity, novelty versus familiarity in products, creativity versus rationalization (Caves, 2000).

In this special issue, we focus on some of these new perspectives followed by innovative organizations to cope with creative challenge. In particular, we focus on how to manage: i) ideation processes to foster creativity, ii) the tension that exists between the logic of creation and production; and iii) disruptive innovation to transform a traditional industry.

Managing Ideation Processes to Foster Creativity

As "new and useful combinations" (Drazin et al., 1999; Mednick, 1962; Woodman et al., 1993), ideas are the raw material of creativity and innovation. Organisations are generally rather efficient at generating new ideas, mostly through daily operations and vernacular experimentations (Styhre, 2006). Many creativity techniques, beyond brainstorming (Osborn, 1953) or lateral thinking (De Bono, 1971), have proven efficient in generating new, even disruptive ideas (bisociation: Koestler, 1964; the Triz method: Altshuller, 1984; the C/K method: Le Masson et al., 2010), or in capturing new ideas from the inside out and from usages (crowdsourcing: Howe, 2008; design thinking: Brown, 2009, Verganti, 2009).

However, the emergence of new ideas is a necessary, yet insufficient condition for innovation. As underlined by Birkinshaw and colleagues (2011), ideas are mostly black boxes in innovation theories, which have to be addressed as processes. Idea management is a long, complex, and highly strategic process. Following the creative "spark" – the *generation* of the idea – the road ahead aims at maturating, challenging, enriching, and validating the insights. This *conversion* of the idea requires an investment in time, resources, and efforts in order to clearly identify, actualize, and extract the potential value of the idea. Mastering this conversion phase gives the organization a significant competitive advantage. This mastery could be defined as a strategic capability that cannot be delegated to the outside partners. It relies on specific internal procedures and leadership, and requires some hierarchical control. Throughout the literature, many researchers insist on the importance of transformation, conversion, maturation, and "valuation" for the development of ideas in innovative organizations (Block & MacMillan, 1993, Christensen & Raynor, 2003, Furr & Dyer, 2014; Govindarajan & Trimble, 2005).

Our own systematic studies of creative processes in different fields, times, and settings, from Cubism with Picasso, to Cirque du Soleil with Guy Laliberté and his creative team – as detailed by Simon (2015) in his article in this issue – or to the "techno-emotional" gastronomy of the restaurant with Ferran Adrià and his chefs – as analyzed by Capdevila, Cohendet, and Simon (2015) in their article in this issue – reveal the key role of two often underestimated artefacts: the codebook and the manifesto. The manifesto, explicit or not, asserts a strategic positioning in differentiation and values. It allows understanding of the idea as a converging vision that does not necessarily require constant coordination from a leader. It provides the creative collective with an agreement on the orientation of efforts, focusing on shared meaning and on a well-understood and accepted common purpose. What appears as a shared orient-

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ation in the symbolic dimension is completed by a systematic, more concrete effort to define the ways the idea is going to be used and exploited; its "grammar of use" is laid out in the codebook (Cowan et al., 2000). The codebook generally emerges from the projection of the creative intention into the realm of users: what they need to know and do in order to fully benefit from the new idea, once it has been concretized into a new product, service, or process. Often, prototyping will help in designing and refining the codebook. Both artefacts act as powerful complements to foster the understanding and acceptance of the idea by the hierarchy.

At the next step, when an idea reaches a sufficient degree of maturity – and there is an understanding of its possible functioning and potential value – the question at stake is its *execution*. Executing an idea supposes to organize its "landing" in pre-existing structures and processes. Formally, this signals the actual beginning of the innovation process itself, as defined, for instance, by Schumpeter himself (1939, 1942).

Hierarchy has a fundamental role to play in giving the "green light" to an idea when it reaches a certain level of ripeness. Officially endorsing and idea and starting a formal innovation process means keeping up with the enrichment, concretization, and valuation of the idea. The idea will benefit from internal and as well as external contributions, consciously channelled, managed, evaluated, and selected by management. Differing from the vision and metaphor of the innovation "funnel", ideas should not be considered only as quasi-material inputs to feed the innovation process. The evolution and actualization of ideas *is* the innovation process. In this regard, many innovative projects have encountered difficulty – when taking a sequential perspective – in recognizing, evaluating, transferring, and exploiting the new pieces of knowledge generated from the process. Generally, these insights are at worst forgotten, or at best, recaptured in complex intellectual property models, to be eventually franchised to external actors. Focusing on the idea generation, conversion, and execution process allows emphasis not only on the expected *outputs* (i.e., the deliverables and their exploitation/valuation model), but also on the *outcomes* (i.e., the potentially useful knowledge produced from the exploration/experimentation process itself). Hargadon and Sutton (1999), for instance, in analyzing the specific internal functioning of IDEO, the world renowned design firm, insisted on the contribution of those "secondary" ideas to the sparking and fuelling of new innovative initiatives and projects.

At this stage of the ideation process, we must identify the active units in the idea generation/conversion processes. Generating and converting ideas is essentially a socio-cognitive process and construction (Callon, 1999). If the original spark is more than often individual, the first validation and valuation of the idea comes from a small, situated group of informal "partners in crime", invited by the first "ideator" to react, comment, and contribute to the idea. In their article in this issue, Cummings, Bilton, and ogilvie (2015), emphasize that creativity in organizations is more than just coming up with a new idea: it must involve action beyond the generation of an idea, which they call "creativitying". Creativitying is group process and an action-embedded creativity.

Then, a defining and critical phase of translation and seduction begins, where the original "ideators" try to convince others of the newness, relevance, and value of the idea. At the same time, they need to foster reactions, criticisms, challenges, enrichments, and contributions from more and more partners. One of our studies in the video game industry (Cohendet et al., 2011), and many other contributions in the literature, emphasize the active and central role of "knowing communities" in this essential phase of the idea management process. Knowing communities share, challenge, and assemble bits and pieces of knowledge around a common object of interest, be it a practice, an emerging paradigm, or the construction of a new frame of understanding in a creative field. They act as an active repository of cognitive and practical resources that feeds not only the exploratory capabilities of the firm, but also its exploitation activities. The members of these communities (for instance, the Ubisoft game designers described in Cohendet & Simon, 2007) have at the same time one foot in the cognitive construction of new ideas, and another one in the innovative projects of the firm. They lie at the best position possible to feedback ideation (exploratory) processes with the elements of knowledge acquired in (exploitation) processes in projects. These communities also compensate for the possible local limitation of resources by connecting to other external communities of knowledge from which they can import relevant elements to enrich their creative explorations and conversion of idea. They represent far more than a passive repository of knowledge. Rather, they act as an active device of exploration, exploitation, and renewal of the "creative slack" (Cohendet & Simon, 2007) that will influence the strategic innovation pathways of the organizations in the future.

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Based on the literature on the management of ideas for innovation and our own studies, Table 1 synthesizes the components and activities involved at the three stages of the idea-development process. The starting point is to acknowledge that ideas should be considered as unfolding, open-ended processes that need to be managed in three main steps: i) the generation of the idea, ii) the conversion of the idea (i.e., looking for its consolidation and validation/valuation), and iii) the execution of the idea through the mobilization or organizational resources and processes (Hansen & Birkinshaw, 2007). The activities at the three stages differ significantly. The first stage is exploratory and aims at generating new insights through knowledge association and recombination. It can involve free exploration or a more disciplined approach using specific methods. The second stage is essentially social and aims at convincing other actors to contribute to the validation and consolidation of the idea. The third stage aims at translating the idea into a value proposition relevant for the organization, and to convince the hierarchy to endorse the idea. The main actors – or "active units" – evolve along the process. Where individuals are generally at the origin of the idea, knowing communities play an essential role in the consolidation and validation phase. At the last phase, formal positions take over and are coordinated by the hierarchy in formal project mode. As mentioned earlier, this idea-development process needs to be enriched by very specific cognitive artefacts, especially at the conversion phase. The manifesto

Table 1. Untangling the idea-development process

	The Spark	**The Social Construction**	**The Landing**
Focus	Idea generation	Idea conversion	Idea execution (Hansen & Birkinshaw, 2007)
Main Activities	Looking for insights • bisociation (Koestler, 1964) • Triz method • C/K method (Le Masson et al., 2010) • design thinking • etc.	*Sensemaking* (Weick, 1995) • sharing the idea • looking for allies • seducing • convincing • learning by intrusion • building legitimacy • etc.	*Sensegiving* (Boland & Tenkasi, 1995) • translating the idea into a value proposition relevant for the organization
Active Units	• individuals	• knowing communities (communities of practice, epistemic communities, etc.) • collectives	• organization/hierarchy • formal projects • functional/operational experts
Cognitive Artefacts	• insights based on pre-existing in-depth knowledge and experience, and research	• manifesto • codebook • boundary objects / prototypes	• validation through valuation • business model
Cognitive Activities	• sensing	• seizing • sizing	• reconfiguring (Teece, 2009)

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defines the spirit, the orientations, the constraints, and the values and identity of the idea. The codebook provides a "grammar of use" for the idea: it is literally a manual that explains how to use it and benefit from its value. The development of prototypes allows demonstration if the functioning and value of the idea or of some of its specific features. At the third stage, the idea-development process must focus on developing a formal value proposition and business model to provide a convincing business case to the organization. This three-stage process is aligned with Teece's interpretation of the firm dynamic capabilities for innovation (2009), where the first issue for the organization is to generate some relevant insights, then to assess their value and select the most relevant one, and finally to reformat the idea as a formal project that is must be implemented in the pre-existing set of organizational resources and process, thus reconfiguring the organization to allow for the concrete development and actualization of the idea as a new product, service, or process.

Managing the Tension between the Logic of Creation and the Logic of Production

In a given organization, the traditional representation of the process of innovation is based on the classic sequential principle of the "stage-gate" (Cooper, 1990) (Figure 1). The first stage, the pre-conception stage, is dedicated to a process of idea generation. Then, through a sequence of stages and gates, an irreversible process of reduction of the variety of available options starts: the process of innovation follows different phases (conception, prototyping, demonstration, production, etc.). In each phase, ideas are put in competition: the ideas that are not selected are definitively discarded, and forgotten. Even if this approach proved its efficiency in terms of control of costs and respect of deadlines, it has, with regards to creativity, severe drawbacks: it aims at concentrating "thematic" creativity at the early stages of the process and discourages significant creativity at the later stages. As Egidi (1996) put forward, at each gate, there is some "incomplete knowledge and there is a need to complete it by recreating its missing components". The classical stage-gate process also entails two major risks: the first risk is to definitively discard an idea that did not seem mature enough at the moment of the decision, but that eventually would have had the potential of being a real breakthrough after additional work and feedback. The second risk is to select and commit to an idea that eventually will prove to be a poor one. Often, in such cases, it is too late to reconsider a process that has taken an irreversible path.

A major lesson learned from creative industries (Pixar, Google, Ubisoft, Whirlpool, Philips, Siemens, 3M, etc.) is that, contrary to traditional industries (where the process of idea generation and the process of project management tend to be sequential), the process of idea generation and the process of management of innovative projects in creative industries are run *in parallel*. They mutually feed each other (e.g., Tennant-Snyder & Duarte, 2008). "Exploitation and exploration tend to be unfolded in an organically intricate and complementary way where they constantly fuel each other" (Cohendet & Simon, 2007). The process of idea generation

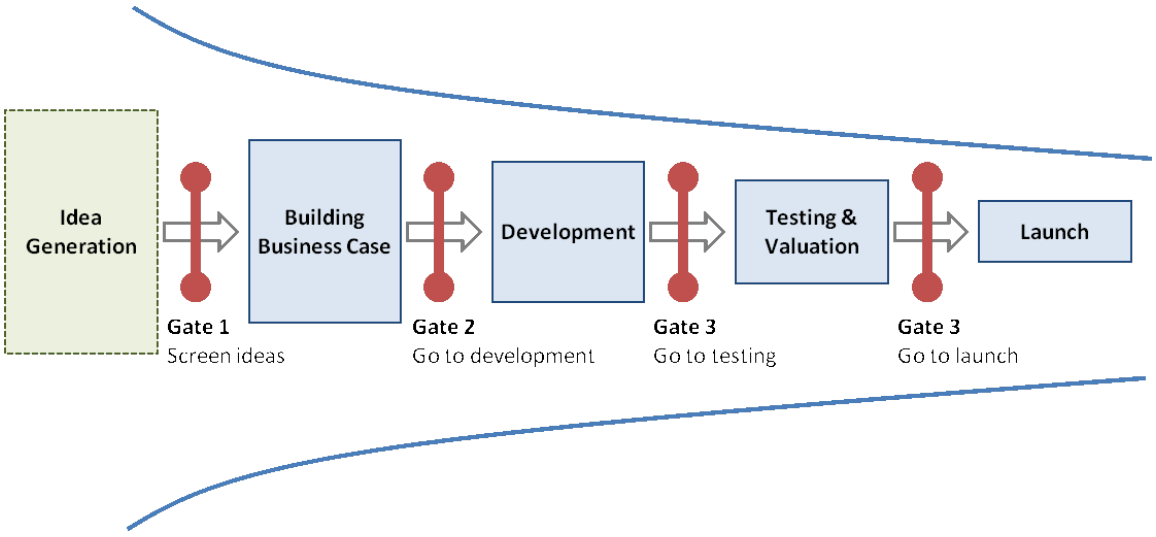

Figure 1. The "classic" process of staging and gating of a project

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assures the sustained creativity of the firm. Along this process, ideas are developed, nurtured, enriched, etc. as explained in the above section.

These "dual" dynamics of two main processes need subtle coupling and decoupling phases that must be orchestrated by an adequate process of knowledge management (Figure 2). Here, the main challenge for knowledge management is to ensure a dynamic relationship between two heterogeneous frames of references. On the one hand, ideation processes are essentially fed and nurtured by communities. These processes are informal and merely divergent and somehow chaotic, which implies that the classic means of control, such as contractual schemes of incentives, are irrelevant. What matters for agents involved in these ideation processes is the recognition of their contribution to the building of ideas (reputation), and intrinsic motivation. On the other hand, classic innovation processes, which are based on project teams, are mostly managed by the hierarchy, focusing on the convergence on value generation and actualization. These are mostly formal processes. To be consistent, the dynamic of these creative powerhouses supposes that both processes are to be constantly mutually enriched. This role mostly belongs to management, in charge of implementing various socio-cognitive transversal practices and processes to harness the idea generation dynamic to innovative projects. In the wide array of options possible, we can mention encouraging boundary spanners and knowledge brokers, designing technical cognitive platforms, and fostering and supporting communities. This area opens an extremely rich research agenda for academics and practitioners as well.

In the case of the conception of new artistic and acrobatic performance at Cirque du Soleil, it appears clearly that most efforts are inspired by a convergence on a common artistic vision, and at the same time a constant concern of consolidating multiple constraints of aesthetic value, physical prowess, and risk assessment. The reconciliation of these tensions is only possible through a constant back-and-forth process between the convergence of the innovative process and the divergence of the new ideas originating in the common rich experiences of all the stakeholders. In this regard, mobilizing multiple views and voices on ideas, and staging debates and conflicts, appears as a very efficient way to reach an optimal agreement for the enrichment and concretization of ideas. As the project progresses to-

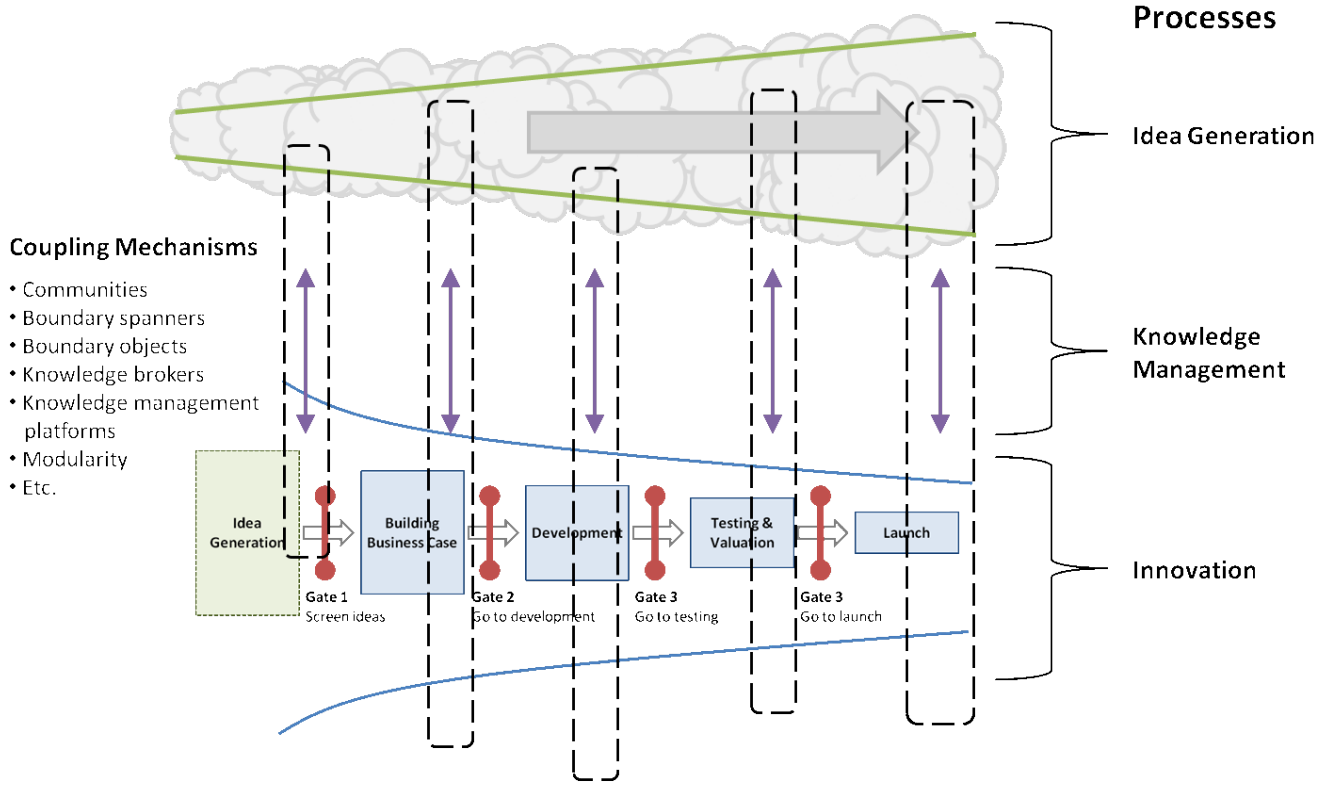

Figure 2. Coupling and decoupling ideation processes and innovation processes

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wards a stabilized framework for a new Cirque act, the many discussions are formally recorded in the knowledge base of the organization, and informally stored in the memory of individuals and of the community through stories and souvenirs, contributing to the accumulation of a creative reservoir (or "creative slack") for future insights and endeavours.

Essentially, nurtured by the creative communities, the fundamental element of the ideation process is the creative reservoir. The remarkable characteristic of the process is the formation of a creative reservoir viewed as a "repertoire of creative opportunities" that contributes by guiding the choice of future projects for the growth of the firm. The creative reservoir is shaped by the culture of the firm and is essentially understandable through the jargon of the organization. This parallels the analysis of Penrose, in which previously utilized managerial resources become "slack", and these "unused productive services are, for the enterprising firm, at the same time a challenge to innovate, an incentive to expand, and a source of competitive advantage" (Penrose 1959). In line with Penrose's vision, the firm that has accumulated a creative reservoir is better prepared than any other organization to derive a benefit from the creative potential of the reservoir. Because of these idiosyncrasies, it is much cheaper to valorize the reservoir *within* the firm that holds it than through any other organization (including through any isolated communities). Some may argue that the creative reservoir appears as a *cushion of redundancy* that is costly to maintain. The specific conditions of formation of the creative reservoir in creative companies rely on the functioning of quasi-autonomous communities that naturally produce and conserve the knowledge in their domain of specialization at negligible costs. They offer strong guarantees of the efficiency of maintaining the creative reservoir at low costs. The reservoir is not "possessed by the firm". It is essentially "delegated" to the communities.

To sum up, the traditional vision in management considers new ideas as preformatted "black boxes" (which can come either from outside or inside of the organization) containing well-described pieces of knowledge. What matters for the organization is the potential economic value of the new ideas that guides at each step of the stage-gate process the selection procedures of the managers. More precisely, in the traditional vision, the first step of the process is generally the phase of gathering the maximum number of ideas (using methods such as brainstorming). Then, through a "funnel" process shaped by a sequential "go, no go" procedure, the number of competing ideas is progressively trimmed: "no go ideas" that are not mature enough are generally discarded, and only a small number of "go ideas" pass the various gates before being transformed into some innovative output for the organization. Through this approach, many potentially creative ideas, which did not have time to mature, are definitely eliminated. The risk of killing creativity in pursuit of short-term efficiency is high. The story of IREQ, described in this issue by Raouf Naggar (2015), is a remarkable case of an organization that, after having observed many cases of "lost creative opportunities", has entirely rethought its ideation processes through constant coupling and decoupling between the management of ideas and the management of innovative processes. This today serves as a starting point to re-articulate capabilities in order to provide the organization with disruptive proposals.

Managing Disruptive Innovation to Renew a Traditional Industry

In times of turmoil and crisis, organizations and industries are challenged to reinvent themselves. Through an insider view on the creation of the Swatch, Gilles Garel (2015) illustrates in this issue how a strategy for disruption should bet on deep, first-hand knowledge of the industry, focused explorations, passion, and smart ingenuity. As demonstrated by Christensen (1997), disruption does not necessarily come from more technology, but through a subtle dialog between consumer's knowledge and an unforgiving value-analysis of the different components of the industrial chain, integrated in new business models and strategies. Aligning the core functions and structure of the product or service with the use and expectations of the customer requires a willingness to rethink the organization and the industry down to its roots. In terms of method, the cases of the Swatch, or of Tesla cars, or the iPod, show that successful, entrepreneurial innovators develop a dual capability. On one hand, they project and explore in depth and in detail some "ideals", visions of what the perfect answer to the customer's needs could and should be; on the other hand, in connection with the vision, they investigate varied knowledge bases, and then combine the most promising pieces in new concepts and solutions. Because they arise from a deep knowledge of the product and production methods, disruptive innovations usually emerge from the shop floor up to middle-management. Thus, they are made possible also only by the "enactment" of bottom-up proposals by top management, who should be humble enough and daring enough to reconsider their main strategy and reinvent their business.

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Conclusion

To echo Gary Hamel's call (2008) and Henry Mintzberg's concern (2015), to address the ever-accelerating complexity of the world we live in, organizations need to be reinvented as creative powerhouses, with a higher mission based on the end users' needs and expectations. This reinvention has to be centered and focused on the development of collective and collaborative, open-ended creative capabilities. We need to reclaim the organic side of organizations, as playgrounds for communities, garden for ideas, and dynamic reconnections to larger ecosystems. Our modest view on this, and a lesson from the different cases in this special issue, is that we collectively need to: i) rethink structures around open and transversal forms; ii) reformat processes by putting in tension the exploration of projected values, risk, and ideas; and iii) reboot culture by assessing and cultivating the cognitive work and the interplay of individual talents and communities, in dialog with hierarchy and markets (Adler, 2001, 2015) as the actual identity of the firm. We need to rethink and reinvent management. It is not a luxury; it is a necessity, and an emergency.

About the Authors

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Introduction to the Special Issue on Creativity in Innovation

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Toward a New Understanding of Creative Dynamics: From One-Size-Fits-All Models to Multiple and Dynamic Forms of Creativity

Stephen Cummings, Chris Bilton, and dt ogilvie

> *"[Actually,] I'm a bigger fan of Edison than Tesla."*
>
> Elon Musk
> Business magnate, investor, and inventor
> CEO of Tesla Motors and SpaceX

This article proposes an alternative to a managerial "best practice" approach to creativity based on the notion of creativity as a singular concept. Our alternative draws on three fundamental ideas that are emerging in different pockets of the creativity literature in a way that can be readily conceptualized and applied in practice. The first idea is that creativity is really about "creativities", or a cluster of different and discrete qualities that can be combined to suit the context in which they operate. The second is that creativity is not static: it is about "creativitying", or the action and the practice of combining these creativities, which evolve over time. The third is that being creative in organizations is not an individual act: rather, it is the multiple activities of groups as they go about creativitying.

Introduction

Creativity continues to be a widely used buzzword in management. However, managerial approaches to creativity are limited by two paradoxical conditions. First, a multiplicity of differing notions of the term "creativity" are used across different sub-fields of management. Second, an assumption is held by many managers that "creativity" is a singular concept that can be defined, managed, and directed according to a coherent set of theoretical assumptions: that there should be, in other words, a "one best way" to be creative. A conventional response to these assumptions has been to see the many one best ways as being variations of the same thing or in competition with one another. But, over the past couple of years, at successive Academy of Management conferences, we have sought to explore an alternative approach with a range of colleagues. This alternative approach is threefold. First, it refers to an emerging consensus among both organizational and cognitive researchers that sees "creativity" as a cluster of different and discrete qualities (i.e., multiple intelligences or competences). Managers, leaders, and organizations can combine these multiple "creativities" to suit their own unique contexts and considerations. Second, we wish to promote thinking about how these creativities combine and evolve dynamically, over time. Hence, it may make more sense to think of the action and practice of "creativitying", than think of creativity as a static label. Third, rather than focusing on the individual or on individual talent as the creative "unit of analysis", as is often the case in both creative management (Prichard, 2002) and creative education (Cochrane et al., 2008), we think it might be better to examine the multiple activities of groups as they go about creativitying.

Although many of these insights are available in the creativity literature (e.g. Anderson et al., 2014; Sawyer, 2006; Sternberg, 1988), this knowledge has not, in our experience, resulted in progress in management practice. By gathering our ideas into a diagram, we hope to show how these perspectives on creativities and creativitying can be combined to achieve dynamic change in organizations. We explore this model in more detail in the next section of the article, arguing first that creativity derives from multiple creativities, not from a singular property, second that creativity is dynamic (something we do) rather than static (something we have). These two perspectives combine in a third argu-

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ment, that creativity occurs through dynamic group behaviour (teams and systems) or "creative dynamics". Each of these perspectives is developed successively in the remaining sections of the article. As noted above, most of these insights can be located separately in existing literature on creativity; our model attempts to gather them together in a combined model that can inform management practice and deliver creative outcomes in organizations.

A Matrix for Promoting a New Understanding of Creative Dynamics

One of the most creative and inspirational writers in management is Karl Weick. One of his most compelling ideas on the way in which thinking about strategy became bogged down in the 1980s was outlined in a book chapter called "Substitutes for Strategy" (Weick, 1987). Here, Weick argued that strategy did not exist in strategic plans, even though when asked what an organization's strategy was, people often pointed to the plan that was thought to precede actions. Rather, a strategy emerged, Weick suggested, as groups took action. And, through acting in and interacting with their environment, they developed a clear orientation and at once became animated to achieve and further develop the goals that this growing orientation brought into view (Weick, 1987).

Weick illustrated this idea through a now-famous tale (albeit likely an allegorical one: see Basboll, 2010) of a group of Hungarian soldiers stranded in the mountains after an unanticipated snowstorm whited out what was supposed to be a routine training exercise. Paraphrasing Weick (1987):

> The young lieutenant of a Hungarian detachment in the Alps sent a reconnaissance unit into the icy wilderness. It began to snow immediately, and unexpectedly continued to snow for two days. The unit did not return. The lieutenant feared that he had dispatched his own people to their death. However, on the third day, the unit came back. Where had they been? How had they made their way? "Yes," they said: "We considered ourselves lost and waited for the end. We did not have any maps, compasses, or other equipment with which to ascertain our position or a probable route out. But then one of us found an old tattered map in a seldom used pocket. That calmed us down. The map did not seem to quite fit the terrain but eventually we discovered our bearings. We followed the map down the mountain and after a few wrong turns eventually found our way." The lieutenant borrowed the map and had a good look at it. "This isn't a map of the Alps", he said. "It's a map of the Pyrenees!" (Cummings & Wilson, 2003; Swieringa & Weick, 1982; Weick, 1987).

The tale illustrates that strategy does not come from a plan or a map; action may be inspired by these things (even if they are inaccurate or out of date in their characterization of the environment), but strategy happens as people start acting. Through acting in relation to an environment, they start learning, and through this learning, they start recalibrating, and thus continue to act and react.

In other works (e.g., Cummings & Wilson, 2003), we have sought to illustrate the interplay and development of Weick's two substitutes for strategy – orientation and animation – in a diagram or, more exactly, a two-by-two matrix, as shown in Figure 1.

We continue to use this matrix as a framework for checking the validity of the effective use of other strategy frameworks. If the strategy developed does not create a clear sense of orientation among those who have to implement it, and animate them to enact this orientation, then it may not help create the desired outcome.

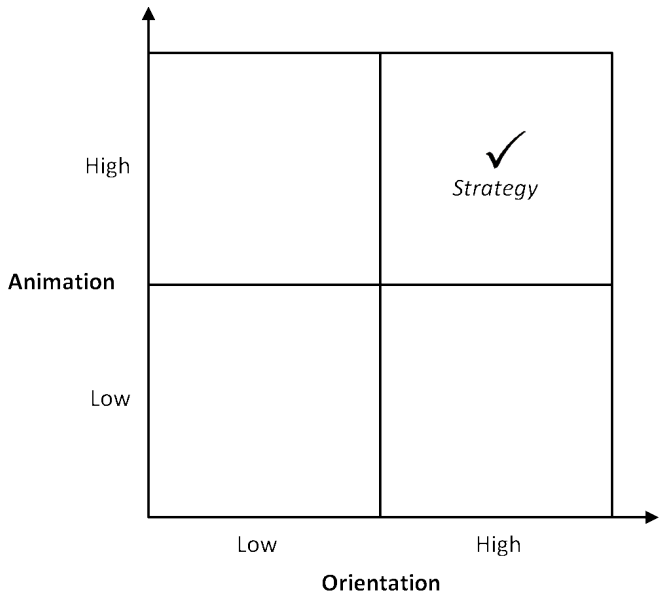

Figure 1. Strategy as the combination of increased orientation and animation (Adapted with permission from Cummings & Angwin, 2015)

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Our purpose for drawing on Weick's substitutes and its presentation in a two-by-two matrix is to promote three ways for thinking differently about creativity, and by doing so, raise awareness about a need to move beyond creativity as a singular, static term directed toward the individual.

Although talk of creativity now gets people's attention in management and its many sub-fields, what people tend to associate with the term limits the value that a substantive emphasis on it could add. The matrix shown in Figure 2 illustrates how we might move away from three assumptions that are associated with the discourse of creativity in management (Prichard, 2002):

Assumption 1: Creativity is singular and there is one best way to achieve it.

> *Alternative:* Multiple "creativities" that can be orchestrated and combined.

Assumption 2: Creativity is static. It is a noun describing a subject or an adjective describing an object or a set of characteristics, not an active verb.

> *Alternative:* "Creativitying" as a verb, valued for what it does (effects) rather than for what it is (properties).

Assumption 3: Managers tend to think of creative properties as belonging to individuals rather than to groups.

> *Alternative:* "Creative Dynamics", in which groups combine multiple creativities to achieve dynamic effects (creative outcomes).

In the sections that follow, we discuss each of these assumptions and alternatives in more detail, and in so doing, we show how we might set a course to a new approach: by orienting eastwards on the x-axis; animating or giving life to our thinking about creativity by moving upwards on the y-axis; and by combining both orienting and animating in a diagonal line stretching north-eastwards, plotting a course towards "creative dynamics".

1. Orienting Eastwards: From Singular Creativity to Multiple Creativities

A PhD student we spoke to recently had an epiphany. His project, sponsored by one of the world's largest advertising agencies, sought to contrast the creative process in one of their major Western offices with those in the relatively new office in Beijing. The aim was to ob-

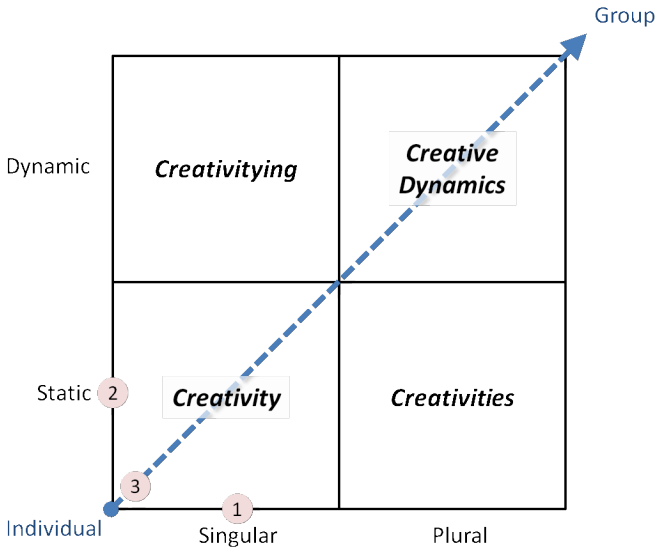

Figure 2. Creativity "squared": A creative dynamics matrix, including the positioning of the three common management assumptions about creativity

serve the processes in the Chinese office as they "matured". A key underlying assumption here was the idea that creative processes have matured in the West and that they are yet to mature (i.e., become more like current Western approaches) in "less developed" parts of the world. There must be a singular view of what best practice in creativity is, and West is (obviously) best. The reality that many of the people at the top of the world's major advertising agencies are British nationals corresponds with this view, because the British are understood to be "creative types" (more on this in point 3 below). In any event, the epiphany occurred when a third office was added to the study. This, even newer, office was in India.

If creativity was singular and there was, by association, a maturity scale, then it should simply have been a matter of plotting the Chinese and the Indian offices on this scale: except, that approach did not work. The differences between the Indian and Chinese approaches to the creative process made the student and the subjects he was observing think again. They realized that, in effect, there were three different approaches to creativity at work, and they could not be explained by being at different stages of the same singular lifecycle. They were different in kind, not degree, drawing from different mental maps and shaped by their different contexts and relationships. More than this, he saw that rather than the West informing the way the Eastern creativity should progress, it could be that each could learn from the other.

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This story sums up the problem with the assumption that there is one type of creativity; that there is subsequently one best way to do it; and this way can be divided into discrete steps or stages that represent the evolution of the creative process. This assumption may be best illustrated if one does a Google image search for "theories of creativity". What comes up are *n*-stage frameworks that purport to explain not a process, but *the* process, such as:

> inception → incubation → illumination → realization → verification
>
> trigger → learn about → incubate → learn-by-doing → develop know-how
>
> occupation → incubation → insight → evaluation → elaboration
>
> frame → explore → test and assess → narrate
>
> preparation → incubation → illumination → verification

Although these models tend to be promoted in a circular shape (perhaps because circles are seen to be more creative than straight lines, although we debate that point further on), they are still presented as a single series of steps that occur one after another. Yet, on closer inspection, some of the "stages" require different, even contradictory, modes of thinking. Such creative tensions echo Howard Gardner's theory of multiple intelligences (Gardner, 1983) and Frank Barron's (1958) argument that creative processes require "tolerance for contradictions". These contradictions (to which we will return later) are typically elided in the smooth lines of the modular creative process or cycle framed by Google images of creativity. And, although these models acknowledge the need for different competences, reflecting a move away from individualistic "trait-based" theories of creativity towards an analysis of creative teams (West, 2012) and creative systems (Csikzsentmihalyi, 1988), they still prioritize certain personal attitudes, behaviours, and talents over others, with the moment of "illumination" or "insight" taking centre stage.

The first movement in our thinking about creativity that we would like to promote here is one that re-orients us from seeking to find the single best way of (or series for) being creative, toward accepting that there may be more than one way to be creative.

So, for example, we should think more about creativity as potentially occurring throughout the value chain or network, not just at the beginning with a single originating creative idea. Indeed, we should reflect on whether activities at different stages of a value or production chain might require different modes of creativity; or whether industries or products at different phases of an industry or product lifecycle would necessitate different approaches yet again. Again, this is not just a case of breaking down a generic creative process into component parts (Zien & Buckler, 1997) but challenging the assumption that a single set of interlocking creative competences can fit every application and every outcome. What happens when we change the sequence or reprioritize one stage in the value chain over another?

Furthermore, we have suggested elsewhere (Bilton et al., 2015) an approach based on four distinct modes of creativity – generative creativity, adaptive creativity, executive creativity, and consumer creativity – that would be useful to consider:

1. *Generative creativity* is the perception that creativity is primarily concerned with idea generation, and some of the assumptions (e.g., motivation, organizational behaviour and structure, education and training) that focus on this aspect of creativity (Amabile, 1998, 1990; De Bono, 1993). This is perhaps the dominant paradigm for understanding creativity in management – but we would argue that, although important, generative creativity is only one type of creativity.

2. *Adaptive creativity* is the under-rated but important role of adapting and improving existing ideas in order to add value (Kirton, 1984). This is a key aspect of innovation as the purposeful application of a creative idea, and it also links to the capacity among organizations and individuals to recognize and build upon an incipient creative idea. In terms of a conventional value chain, adaptive creativity is focused on the creative idea or product away from the traditional notion of creativity related to idea generation toward giving existing ideas form and substance. This approach requires a different set of skills, often more ordered than imaginative, as well as an understanding of the collective context in which creative ideas will be applied. This view is consonant with March's (1991) notion of exploitation of existing ideas. Yet, this form of creativity is often undervalued by managers – indeed the whole machinery of intellectual property law is premised on the primary importance of "originality" over adaptation.

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3. *Executive creativity* highlights the importance of moving towards "proof of concept" or prototype. Executive creativity is more practically oriented towards "doing" than "thinking" and also requires a combination of pragmatism and purposefulness (as in other "creativities", the combination is internally paradoxical, as well as challenging or even contradicting the mindset and principles of other phases in the creative process described above). As Verganti points out in relation to design, radical innovation depends on the "integrative capabilities of executives" rather than the divergent thinking of individual designers (Verganti, 2009). This in turn means empowering design managers rather than seeking out the talents of individual designers (von Stamm, 2008). Very often, this kind of creativity is disparaged as "convergent" or "conventional" thinking, and the importance of this creative contribution to the overall process is routinely underestimated or dismissed outright (Bilton, 2014).

4. *Consumer creativity* relates to the notion that the value of a creative idea is only really apparent in the mind's eye of the beholder – this is what makes conventional creative work inherently risky and unpredictable. Increasingly, the process of consumption is not only about interpreting and re-imagining an artefact, it is a creative process in its own right (Gauntlett, 2011). Technologies and changing market structures have "empowered" consumers, and it is now possible for them to generate and distribute their own ideas without recourse to creative "professionals" (Lessig, 2008). Marketing and distribution also influence consumer creativity – reconfiguring the context in which a creative experience takes place or enabling customers to recognize and value new forms of creativity are, in themselves, modes of creativity. Consumer creativity, like design thinking, involves recognition that innovations can be initiated at the point of consumption, by radically reimagining the ways in which a product can be interpreted or used (Verganti, 2009).

Although we should expect differences between each mode, there are also different, often seemingly opposed, skills or elements at play to varying degrees within each of the four: the need for free-thinking *and* focus; an orientation for taking risks *and* knowing how to mitigate them; the value of dilettantism *and* structured approaches; the need for thinking abductively *and* clear criteria for measuring success. This is an idea that takes us back to one of the oldest, but often forgotten, theories of creativity: that creativity processes draw from the tensions between "bisociative characteristics" (Koestler, 1964); and one that we have recently used to structure (in an fairly opened-ended way) the recently published *Handbook of Management and Creativity* (Bilton & Cummings, 2014). However, much more remains to be done to develop our understanding about how these different modes and differing characteristics combine to create something.

By opening ourselves up to the notion that there is no one type of creativity and no one set of creative characteristics, we may be able to move beyond the often heard refrain: "But I'm not a creative person". This statement is often used to count people out of creativity because they do not believe (or other people do not believe) that they have the conventional shared characteristics of the creative sensibility. For example, they believe that they do not possess those things outlined in Perkin's (1981) snowflake model of creativity: excellence in finding problems; mental mobility; willingness to take risks; objectivity; inner motivation; and commitment to a personal aesthetic. But, just as the idea made popular in the 1980s that there are different types of learners, so that if you were a visual learner you would struggle to learn in other ways (Gardener, 1983), or the notion popularized in the 1990s that creativity resides in the left lobe of the brain, have been superseded by views that we all benefit from multi-modality when it comes to learning and that the left side of the brain can only function to its potential when in combination with the right side and other parts, so we hope that we might recognize that creativity takes many forms and is made up of many more characteristics than those on the "snowflake". In fact, we believe that thinking of creativities rather than creativity (singular) would be a good first step in this direction.

A multimodal, bisociative approach takes us past singular models of creativity as special types of thinking or special types of person. In this context, we welcome a growing emphasis on "pluralism" and eclecticism towards theories of creativity (e.g., Kozbelt et al., 2010) and would like to see this reflected in practices of management. While both the online FreeDictionary.com and Wikipedia define the "creative person" as "a person whose creative work shows sensitivity and imagination", we wonder whether only relying on such individuals to drive creative dynamics is selling us short. Not only does this person-based approach suggest that creativity is a static property, invested in individual talent, it also implies a passive approach to managing creativity. Person-based creativity is a matter of human resources recruiting and retaining the best

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creative "talents". "[T]his view that creativity is the province of only a few individuals pushes the organization to focus more on finding those few people than on viewing its entire workforce as a potentially creative resource" (ogilvie & Simms, 2008). Multimodal creativity requires a more proactive approach, combining and configuring different modes of thinking and individual capabilities. We shall pick up on this idea again in the third of our proposed movements: away from creativity thought of in terms of the individual to creativity in group dynamics.

2. Raising the Animation of Creativity: From Static Creativity to Active "Creativitying"

One of the lessons that can be learned from the writing of Karl Weick, whom we mentioned earlier, is that organizational behaviour emerges, shifts, and changes, and takes shape over time. It is not static. And it is relational. A similar train of thought occupied the mind of Henry Mintzberg at the time that Weick's chapter outlining orientation and animation as substitutes for strategy appeared. His aim, from his first book, *The Nature of Managerial Work* (1973), to articles such as "Crafting Strategy" (Mintzberg, 1987), was to show that management and strategy were not solid objects. They were not best thought of as "things".

A strategy was rather something that emerged over time, as a piece of clay might become this kind or that kind of object as it was crafted by the hands of the potter; or as Weick's Hungarian soldiers in the mountains gathered momentum through action, trial, and error. It made more sense according to Mintzberg and those who surrounded him, such as strategy-process scholars including Andrew Pettigrew (1979) and those who followed up on his lead, such as the "strategy-as-practice" movement scholars (e.g., Jarzabkowski, 2005; Vaara & Whittington, 2010; Whittington, 1996), to talk and think in terms of active verbs such as strategizing instead of static nouns such as strategy.

This idea, that all aspects of life (relationships, learning, strategy, creativity) emerge over time and are crafted in real time rather than being sedentary or following preprogrammed steps, spans a wide literature from Martin Heidegger's opus *Being and Time* (1962), with its focus on thinking and acting in terms of becoming rather than being, to Mathew Crawford's recent pop classic *The Case for Working with Your Hands: Or Why Office Work Is Bad for Us and Fixing Things Feels Good* (2010). However, we do not think it has been focused on enough in thinking about how creativity works.

Being creative is not a straightforward process. It is interactive, iterative, and messy, and most often includes small failures (Sitkin, 1992) from which the creator learns, and through her actions, creates meaning (ogilvie, 1998; Weick, 1979) by using old materials in new ways or finding new materials to use or trying new methods (Fabian & ogilvie, 2005). Creativity in organizations is more than just coming up with a new idea, it must involve action beyond the generation of an idea, which we call "creativitying". That action can be in the form of thought experiments or in physical action to turn the idea into a reality. We view creativity as a verb, a way of doing, rather than a competence – nouns (creativity) become commodities, verbs (creativitying) are active. Creativitying, then, is action-embedded creativity. Creative leaders view creativity as an active practice or craft that involves learning through doing, failing, and re-doing. Creativitying is a group process, not the province of the lone superhero or the special few (Light, 1997; ogilvie, 1999). Research based on groups showed that creating diverse solutions and multiple solutions led to higher quality solutions (Maier, 1970; Wanous & Youtz, 1986).

"In a world that punishes failure more than it rewards action" (Ford & ogilvie, 1997), organizations need a new leadership model in which leaders must not only actively give their people permission to be creative, but must encourage them to do so. Ackoff (1988) sees this type of transformational leadership as an aesthetic function. Creative leaders actually need to "do things". In particular, they need to create safe environments in which they give people permission to be creative (ogilvie, 1994, 1998), to fail, learn, and succeed. They need to challenge repressive cultures and apply creativity back into the organization. Thought experiments notwithstanding, it is important for creative leaders to recognize the importance of encouraging the physical act of making something with the hands – prototypes of the creative idea. Witness the image of the sensory or motor homunculus, which is a physical embodiment showing the parts of the body in relation to their sensory or motor connections to the brain, with the hands being extremely large compared to most body parts. The ability to use our hands is a defining characteristic of humans. Using one's hands is active, not passive.

Creative leadership means that leaders give up the notion of control in the sense of command-and-control, and let creativity flow, allowing others to take the lead in their exercise of creativitying (Mumford et al., 2002; Oldham & Cummings, 1996). The creative leader's (or leaders') role is to connect together the multiple creativ-

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ities discussed above into a productive system. Individuals and organizations may contain many forms of creativity, as we highlighted previously. But, these creativities are often contradictory, unstable, and undirected. Without some system for aligning these creativities, there is a danger that singular creativities become destructive, either for the creative individual or for the organization as a whole.

Therefore, much as the brain controls, coordinates, or directs the execution of other programmes or routines in a cognitive system, so the creative leader reconfigures creative modes in an organizational system. The kind of leadership competences best suited to creative organizations are the ability to broker connections; accept and embrace the idea that creativity is multiple and messy and that the process is fraught with failure; believe "that everyone had the potential to be creative" but may need training to unleash that creativity (Light, 1997; ogilvie, 1999; ogilvie & Simms, 2008); and understand that leadership in such contexts often means handing the reins to others to give them the authority to lead creativity not from the front or top of the organization, but from the middle, or even from the bottom. The creative leader not only creates a "culture of creativity" (Kelley, 1997; ogilvie & McDaniel, 2004) that fosters conditions for creativitying by driving out fear and promoting courage, they recognize that creativity is not only about generating new ideas; it requires a series of further creative acts, creativitying, to convert the novel idea into a valuable outcome.

3. Seeking a Prevailing Nor'Easter: From Individual Creativity to the Dynamic Creative Group

The final assumption that we believe is holding back thinking about creativity, is the notion that, when managers think about creative acts, they tend to picture an individual being creative: an artist, a poet, a programmer, an entrepreneur, an Einstein, or an Edison. They do not tend to picture a group with different attributes becoming creative together. And, this image forms despite the fact that most creative outcomes emerge from groups or, at least, from relationships between two or more individuals, and despite over 30 years of creativity research moving away from trait-based models towards a "sociocultural paradigm" of creativity (Becker, 1982; Sawyer, 2006; Wolff, 1990).

This focus on the individual as the creative agent is not surprising given that the stage models that defined the creative process outlined in our first section were sold to individuals: the students or managers or those who sought out the pop-management books and textbooks that first emerged in the early 1980s. And, what was sought from these books by those who used them was self-improvement, not group-improvement. This tendency has been reinforced by the continuing use of individual creativity testing among human resources professionals as a mechanism for identifying and recruiting creative talent (Torrance, 1988).

A further key, one that differentiates the textbooks that emerged in this period (but which are often still in current use, in their tenth editions or beyond) from their predecessors, was the inclusion of the *n*-stage frameworks or models to capture the essential characteristics of an approach or a sub-field, in a way that brought together a large amount of information, looked scientific, and fitted nicely onto a PowerPoint slide. These frameworks were used by individuals such as management consultants and other "change agents" to analyze the behaviour of other individuals: employees, job applicants, customers, and so on.

Indeed, even those who sought to promote a more systematic, less pop-management or less introductory "textbooky" approach have kept the emphasis on the individual. Hebert Simon's (1969) dynamic framework of creativity still places "the person" and "personal creativity" at the centre of the system of "the field" and "the domain". And, whereas Michael Csikszentmihalyi's (1988) dynamic framework of creativity avoids many of the conventional traps we have outlined above, it also speaks in terms of the individual. It is "the person" that is seen to interact with the "domain" or "culture", and the "field" or "social system", not the group. Even team-based frameworks, such as Belbin's "team roles at work", are built on assumptions about individual aptitudes, locking team members into static individual job descriptions, backed up by psychological tests and predictive models of individual creative ability (Belbin, 1993; Torrance, 1988). And, it is often only these simple frameworks that students learn and managers use.

But, just as Kurt Lewin's last works (1947, 1951) on understanding change are generally cited only to allude to obscure fragments that are then remade into what is seen as the first and foundational change management model (unfreeze → change → refreeze), rather than one of its major points that in research into managing change the group, not the individual, should be the unit

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of analysis, there is a danger here (Cummings et al., 2015). The danger is that, in our desire to get to the heart of creativity, we pick out fragments of earlier research to divine a simple, one-best-recipe to the exclusion of research that looks at the multiplicity and messiness of group dynamics.

More should be done to investigate the group as the creative actor. And, in so doing, we can return to the first limiting assumption that we confronted at the start of this article: the idea that creativity is the preserve of those who possess the characteristics commonly associated with creativity: imagination, sensitivity, flamboyance, eccentricity, and a disorderly or unconventional mind that sees in circles and spirals. But, as we have argued elsewhere (Bilton & Cummings, 2010), and have already alluded to in this article, creative outcomes that add value often require the polar opposite of these things: focus, organization, diligence, planning, Gantt charts, and other straight lines.

A nice example of how these characteristic bisociate to create in group settings can be seen in the notebooks of Thomas Edison. For a time, Edison's ideas books were divided in two. Edison would scrawl out his barely legible flashes of inspiration. And then, on the facing page, an associate, such as precise and highly-organized Charles Batchelor, would work out these ideas more fully and start to plan out if and how they might be worked out and realized (Figure 3).

Edison may not have been as brilliant or eccentric or flamboyant as his competitors, such as Tesla, for example, but it is his creativity that has had the greatest impact on our lives. Edison had a good group. He knew how to combine different characters. And, he knew how to animate all of this toward outcomes that added value to people's lives. Indeed, a focus on the creative dynamics of groups enables a wider set of people and characteristics to be included in our understanding of the creative process. It is the third and final change of direction in moving our understanding from creativity as singular, devoid of time, and associated with individuals in the first instance.

Conclusion

The aim of thinking differently about creativity in the way we have outlined in this article is to recognize that creativity is not only about generating novel ideas, it often requires many and varied other types of creative acts and combinations to see a novel idea emerge or

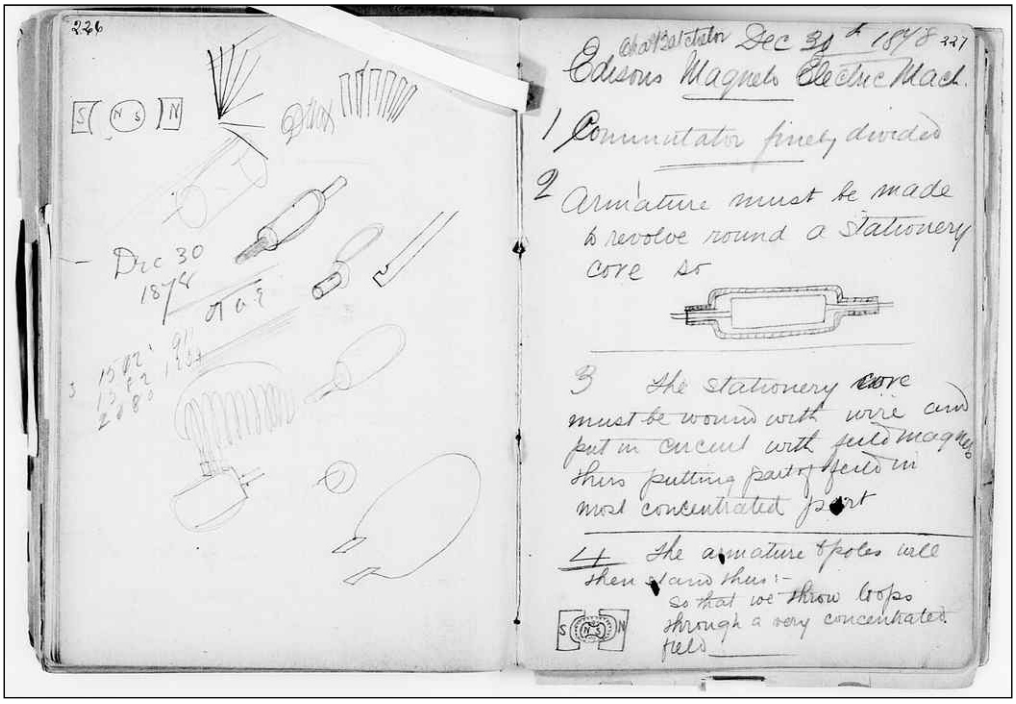

Figure 3. An excerpt from one of the Edison/Batchelor notebooks. From the digitized collection of Edison's Menlo Park notebooks at Rutgers University: http://edison.rutgers.edu/digital.htm; Notebook #10, December 31, 1878: N-78-12-16 (1878-1879): N010228.

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morph into a valuable outcome. Thus, we hope that the kind of thinking advocated here – multiple, dynamic, and focused on groups rather than an individual of the "creative type" – also shifts our thinking about creativity into a closer orbit with the practical outcomes of creativity (Figure 4). And, in this way, it makes it easier to think from the outcome back to the idea, rather than from what is assumed to be the start of a creative process forward. We have become so enamoured with the creativity myths surrounding the flamboyant creative genius and the lightbulb flash of inspiration, that we never fully get past what should just be the initial steps in our modelling, missing the multiplicity, the emergence, and the group dynamics that contribute to valuable creative outcomes.

Most creative outcomes come from a combination or recombination of different modes and capabilities; most creative outcomes emerge through turning thoughts into action, doing and active iteration, trying and failing, and learning and recalibrating, and getting closer; and most creative outcomes come from groups, not individuals. And, we believe that we could do well to consider this further through "squaring" our understanding of creative dynamics, as we have sought to do in the final iteration of our matrix, as we seek to further develop our knowledge of creativity in organizations.

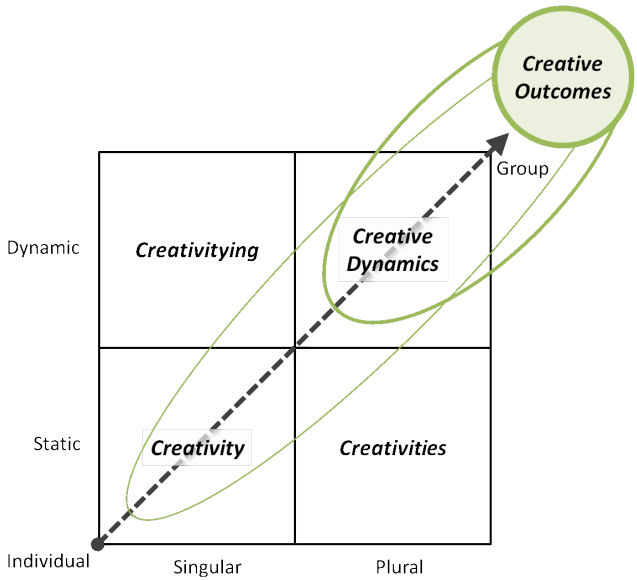

Figure 4. Creative dynamics brings our orbit closer to creative outcomes

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Establishing New Codes for Creativity through Haute Cuisine: The Case of Ferran Adrià and elBulli

Ignasi Capdevila, Patrick Cohendet, and Laurent Simon

> *"Creativity comes first; then comes the customer."*
>
> Ferran Adrià

Ferran Adrià is one of the most recognized chefs in the world. His restaurant, elBulli, was awarded five times the title of the Best Restaurant in the World. Through an analysis of the last 30 years of the creative journey of elBulli, this contribution highlights that Adrià and his team of chefs succeeded in articulating two different processes: i) a process of creativity that aimed at defining a new "school" of high cuisine and ii) a process of innovation that was expressed by the new gastronomic experiences offered to the (happy few) customers of the restaurant until its closure in 2011. A careful examination of the coupling and decoupling of these two processes shows how they fueled each other, and how the management of the organization (through a specific type of ambidexterity) was conducive to the adequate articulation of the two processes.

Introduction

Ferran Adrià's restaurant, elBulli, on the northern coast of Catalonia, Spain, gradually gained international recognition, initially as a restaurant among connoisseurs and later as a creative firm that transcended the world of gastronomy. The restaurant was awarded three Michelin stars in 1996 and was awarded five times the title of the Best Restaurant in the World by *The Restaurant Magazine* (2002, 2006, 2007, 2008, and 2009). While becoming one of the most recognized chefs in the world, Adrià contributed to the institutionalization of the new Spanish cuisine (Lubow, 2003) and also gained popularity beyond the domain of haute cuisine. In 2004, *Time* magazine included Adrià in the list of the 100 most influential people in the world, all fields considered. After closing the restaurant in 2011, Adrià and his team began transforming elBulli into a foundation to focus on the enhancement, research, and diffusion of creativity and innovation, with application not only within gastronomy, but to all creative fields.

Like other creative industries, *haute cuisine* has to deal with the balance of tensions between the expressions of creative values and the managerial and commercial aspects (Caves, 2000). The competitive advantage in the world of haute cuisine is strongly based on the chefs' creativity and capacity to bring novelty to the market. Nevertheless, creativity in gastronomy can be applied in two distinct ways, either to introduce novelty for product differentiation or to develop a market innovation by defying the existing rules (Lampel et al., 2000):

1. In the first case, creativity is related to the search for new uses and combinations of existing ingredients, processes, and techniques, or experimenting with existing, commonly accepted rules. From this form of creativity (that could be called a "weak form") emerge new recipes that are the inventive assets in cooking and that lead to innovations (i.e., new dishes proposed in a menu to the consumers). This case corresponds to a large extent to the classical Schumpeterian linear model of innovation: a first step is the phase of creativity assimilated to the phase of searching (for new combinations), the second step is the phase of invention (of new recipes), and the following steps are devoted to the transfer of innovative ideas to the market (new dishes on the menu).

2. In the second case, the creative process contributes to go further in the exploration, to end up breaking the previous rules of cooking imposed by the dominant school (at this time the rules of the French Nouvelle Cuisine) and establishing new rules. In that

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case, a specific process of ideation has to be undertaken by the creative team: new rules have to be clearly enunciated (most of the time through a "manifesto"), new processes and techniques have to be invented, a new grammar of usage (or "codebook") has to be completed and progressively adopted through a diffusion and institutionalization process (Rao et al., 2003) before being able to conceive new dishes and propose them (innovation) on the "market" (on the menu of the restaurant). In such a context, the ideation process (which corresponds to a "strong form" of creativity) and the innovation process are run in parallel with coupling and decoupling interactions. The creativity associated with the ideation process contributes to the realization of new innovative dishes, but in turn, from the day-to-day practices when serving new dishes in the restaurant, new ideas are permanently transferred to the ideation process to nurture the creative endeavour. There is no linear process of innovation, no given sequence of distinct phases, but continuous feedback loops between the creative and innovative processes. Ferran Adrià always strongly stated that all his activities were focused on this second case.

This article analyzes the last 30 years of the creative journey of elBulli – from being a beach bar to the best restaurant in the world – with the aim of disentangling Adrià's creative process. This article focuses on the emergence of the "new *nouvelle cuisine*" (Lubow, 2003) that has represented a challenge to the French hegemony and its *nouvelle cuisine*. The article analyzes Adrià's creative process by highlighting some of its most important characteristics. From this in-depth analysis of the processes of ideation and innovation followed by Adrià and his team at elBulli, our objective is also to highlight some consequences that could be useful for more classical contexts of technology management. Our view is that, if both scholars and practitioners were to recognize the increasing importance of creativity in management processes, they would tend to restrict their focus to the so-called "fuzzy front end" (Koen et al., 2001). This term refers to the activities that take place around an opportunity, idea, or concept prior to its transformation into a formal and well-structured project leading to an innovation. Although the fuzzy-front-end phase of the innovation process has been recognized as chaotic, unpredictable, and less structured in comparison to the new product and process development and commercialization phases (Crawford & Di Benedetto, 2008), scholars agree that it offers the greatest potential for improving firms' innovative abilities (Verworn et al., 2008). However, despite the increasing interest in the fuzzy front end, this concept still refers to a linear process of innovation, with an upstream phase (the fuzzy front end) sequentially followed by the other classical phases of the process of innovation (invention, prototyping, developing, marketing, etc.). Clearly, the example of elBulli is at odds with this view. It suggests that, in highly creative contexts, ideation and innovative processes can be run in parallel. The delicate coupling and decoupling between these two processes is made possible through new ways of combining creative and productive activities such as ambidexterity, as explained in the following sections.

The article is structured as follows. First, the history of elBulli highlights the phases of the creative evolution of Adrià. Second, we provide some clues to understand Adrià's creative process, underlining the importance of coding and documenting as well as the combination of different frames of reference. In the third section, we explain the organizational ambidextry at elBulli. Before concluding, we analyze the current projects of Adrià and his team (after the closing of the restaurant) to diffuse their creative process to other creative and organizational fields.

The History of elBulli: From a Beach Bar to the Best Restaurant in the World

Our work relies on a rich collection of publications on Ferran Adrià and elBulli. These references are not only from the academic literature (which includes significant contributions from Sylviya Svejenova, 2005, 2007, 2010; and from Rao & Giorgi, 2006) but also from Adrià and his team, who have published numerous books on the history and management of creativity at elBulli. In particular, Ferran Adrià, Juli Soler, and Albert Adrià published *A Day at elBulli* (2008). The book, which describes 24 hours in the life of elBulli in pictures, commentary, and recipes, also contains illuminating discussions on the notion of creativity, innovation, and management. In order to validate our hypotheses, the authors of this contribution also conducted seven days of investigation and interviews with chefs from elBulli at "Foundation Alicia" which is a research centre under the leadership of Ferran Adrià. This Catalan centre is devoted to technological innovation in cuisine, to the improvement of eating habits, and to the evaluation of food and gastronomic heritage. Table 1 summarizes the analysis of the chronological evolution of elBulli and, by extension, Adrià himself, from his initial learning of the dominant rules of the nouvelle cuisine to the development of his own style.

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Table 1. Chronology of the evolution of the creative process at elBulli

Time Periods	Creativity Phases	Creativity Rationale	Places and Organizational Settings
1983–1986	Adopting "old rules" (the rules of "nouvelle cuisine")	Copy French cuisine recipes	• elBulli (1983: Adrià starts as chef; 2011: restaurant closes)
1987–1992	Adapting old rules	Recreate Spanish/Catalan cuisine based on French cuisine	• elBulli (new kitchen facilities)
1993–1999	Developing new rules: using scientific methods (molecular gastronomy), using new principles in gastronomy (deconstruction processes), etc.	Introduce other artistic disciplines in haute cuisine	• elBulli catering (1995–2009) • The workshop in the aquarium (Barcelona, 1997)
2000–2006	Codifying new rules	Separate exploration (workshop) and exploitation (restaurant) Codification of new knowledge (new codebook)	• elBulliTaller (on Portaferrissa Street, Barcelona, since 2000) • elBulliCarmen (facility to centralize all the activities that had no direct link with creativity) • Science department in elBulliTaller (2003) • Setting up of the Alicia Foundation (2004)
2007–2011	Diffusing new rules (through the writing of a manifesto and a series of books)	Exclusive focus on experimentation and research on creativity	• Closing of elBulli restaurant
2011–2015	Creativity beyond gastronomy	Focus on creativity in general, as applicable to other disciplines beyond cuisine	• elBulli Foundation (elBulliLab, elBulli1846, Bullipedia)

In 1961, Dr. Hans Schilling, a German, and his Czech wife Marketa, decided to open a restaurant in a piece of land they had purchased, overlooking a charming Mediterranean cove in Catalonia's north coast. Initially, it was a beach bar that soon became a popular meeting point for bathers and scuba divers. The name "elBulli" came from the French bulldogs the Schillings owned. After building a kitchen and a dining area, the first restaurant was opened in 1964. The restaurant won its first Michelin star in 1976 while under French chef Jean-Louis Neichel, who followed the French *nouvelle cuisine* trend.

In the summer of 1983, Ferran Adrià completed a training period at elBulli. That training was the first contact Adrià had with the world of *haute cuisine* and the experience changed his life personally and professionally (elBulli, 2011). In 1984, he joined elBulli, first as co-chef and later he became the restaurant's only chef. In the first years at elBulli, Adrià and other members of the restaurant regularly visited French restaurants as customers to get inspiration. Through the social contacts gained in those gastronomic trips to France, Adrià had the opportunity to undertake in-service traineeships in prestigious French restaurants. Later in elBulli, Adrià started to adapt and recreate traditional Catalan and Spanish recipes with a new haute cuisine approach. In 1987, a visit to Nice radically changed Adrià's approach to cuisine when Chef Jacques Maximin told him that "creativity means not copying". This simple sentence

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had a strong impact in Adrià, who decided to start focusing on creativity and on finding his own identity.

From then on, Adrià has been dedicated to the development of a new concept of cuisine, driven by methodical and profound introspection. Such a perspective drastically changed the organization at elBulli. First, the team of chefs at elBulli began an intense period of exploration. For the first time in gastronomy, an in-depth analysis of the connections between science (in particular chemistry) and cooking was systematically realized. This exploration led to the invention of many new processes (e.g., spherification, foaming) that were successfully tested and used in the elBulli kitchen. Also, Adrià and his team explored new relationships between artistic disciplines and cooking to find inspiration and offer unique experiences to customers (e.g., using deconstruction principles from architecture to invent new ways of presenting dishes, as described later in this article). Second, this emphasis on exploration led to a major change in the way the restaurant was managed: from 1987 onwards, the restaurant would close for five months (that later became six months) to dedicate time to creativity and research. These two drastic changes are detailed in the following sections.

Bridging Together Science and Cooking at elBulli: Clues to the Deconstruction of Ferran Adrià's Creative Process

Adrià considers that "to create is not something mystical, an illumination that comes from the sky. It is simply a job. A job that is similar to the industrial design, but much more fragile" (Fancelli, 2011). Adrià also highlighted that creativity should not be considered as a classical first step in a linear process of innovation. Creativity is a permanent process of building ideas that is conducted in parallel with the process of innovation that consists of offering new gastronomic experiences to consumers. On the one hand, creative ideas permanently fuel the offering of new menus, recipes, and ways of serving clientele, while on the other hand, micro-creative ideas are constantly emerging from the day-to-day restaurant activities and practices, and they contribute to and nurture the creative process. Adrià faces the creativity process in a very methodological, precise, and collective approach, by gathering, analyzing, synthetizing, contrasting, and mixing ideas and concepts to create new ones. From 1987 onwards, Adrià began a deliberate process of culinary exploration. His idea was that cooking and science go naturally together. Cooks acted as chemists when they discovered through trial and error that we could use tools, heat, and fermentation to transform natural foodstuffs into safer, more nutritious, and more interesting foods. As the knowledge of food chemistry grew, a number of scientists, including Justin Liebig and Louis Pasteur, came to write about cooking and food preparation. Such a perspective explains, for instance, why Adrià actively participated in scientific biannual workshops on molecular gastronomy at Erice, Italy, which became the source of inspiration of some of his culinary discoveries. For example, there is famous spherification process, which forms spheres through the controlled gelification of a liquid that is submerged in a bath – this process led to the discovery of new dishes such as asparagus taking the shape and texture of eggs. This emphasis on the continuous exploration of the relationships between science and cooking led to two main activities that shaped the creative processes at elBulli: i) coding and documenting, and ii) combining frames of reference.

1. Coding and documenting

This willingness to bridge science and cooking explains why Adrià started his creative approach by gathering and classifying the knowledge of: all ingredients used in cooking, the main reactions and techniques used in the kitchen, and the scientific explanations of how and why some ingredients produce certain reactions. This intense effort of classification helped him and his team to discover the potential of a wide range of products that can be used in a diversity of preparations. He published a very detailed lexicon – *Léxico Científico Gastronómic* (2006) – that defines the chemical material and processes that are the basis of cooking. This lexicon was at the origin of the ambitious project Bullipedia, recently launched by the elBulli foundation. Besides this fundamental lexicon, Adrià wrote several books to explain his creative processes.

Gastronomy has been a field where new developments have always been codified in the form of recipes and cookbooks. Writing and authoring new recipes has a high importance for chefs. First, it ensures them the authorship of the novelty, what is specially crucial in a field where the intellectual property system is based on social norms and not on legal intellectual property rights (e.g., grants, patents, copyrights) (Fauchart & von Hippel, 2008). Acknowledged authorship reinforces the chefs' prestige among peers and public. Second, recipes represent codified knowledge that can be easily transferred geographically, increasing the chef's international influence. This aspect is particularly critical in haute cuisine, where scalability is a limitation due to

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the fact that the number of people that can actually enjoy the recipe in the chef's restaurant is low. By codifying recipes, innovative products can be reproduced elsewhere by amateurs but also by peer chefs. This replicability and potential reinterpretation at a distance allows the reinforcement and diffusion of the new and emerging gastronomic movement. Before codification, the diffusion of the new recipes and techniques is done through the situated learning (Lave & Wenger, 1991) that takes place in the kitchen in a master–pupil relationship. In this sense, it is usual for first-class restaurants to employ (often at no cost) a large number of trainee cooks.

In 1993, Adrià and his team published their first book *elBulli: The Taste of the Mediterranean*. The book represented the start of the development of their theory and concentrated on the analysis of their gastronomic style. In the case of elBulli, the codification has gone further by, not only documenting their original recipes (1846 so far) but also theorizing on the creative process. Adrià's creative process is based on a detailed observation and meticulous compilation and synthesis of his environment and experiences while travelling and visiting prestigious restaurants around the world (Svejenova et al., 2005). The books published by Adrià and his close partners (2002, 2003, 2004) are a comprehensive internal analysis of their gastronomic, organizational, and value-related dimensions. In 1999, the elBulli team initiated a cataloguing and classification work that led to the first part of the elBulli General Catalogue. In 2006, elBulli published a 23-point codebook, representing the synthesis of the team cognitive work. The same year, Ferran Adrià and Chefs Heston Blumenthal and Thomas Keller, together with writer Harold McGee, published a statement that summarized the fundaments of the "new cookery" (Adrià et al., 2006).

2. Combining frames of references

Once the efforts of classifying and codifying scientific knowledge on cooking were undertaken, Adrià used different techniques to enhance creativity. One he used frequently is to combine different concepts to come up with a new one. As he explains: "What I do - and it's something that's useful - is to type a series of lists into the computer: base ingredients, garnishes, cooking methods, temperatures, textures, vinaigrettes, aromatic herbs and spices, flavors ranging from sweet to sour, etc. Then I combine these variables because they help me to think and, above all, to discover that these really aren't immovable categories" (Adrià, quoted in Svejenova et al., 2005). This approach resonates with the point of view of Koestler, who considered that a creative act is the result of the clash between "two self-consistent but habitually incompatible frames of reference" (Koestler, 1964). As an example, the famous "foam of potato" resulted from the clash between the concept of "foam" and the knowledge on potatoes. There were no recipes using foams to deal with potatoes. Adrià tried to bridge this gap by inventing a new culinary process (through a gas-conditioning siphon using cartridges) to open a new field of culinary recipes.

However, soon people started identifying him as a molecular gastronomy scientist, which Adrià strongly and vehemently denied. For him, research in chemistry is just one component out of many sources of inspiration in his quest to change the rules of cooking. Artistic influences are also important: Adrià's approach to creativity is strongly based on capturing and integrating other's artistic disciplines into gastronomy. For instance, in the summer of 1991, Adrià spent a winter in the workshop of the Catalan sculptor Xavier Medina Campeny. For the first time, Adrià could develop his creativity without the need to serve tables at the restaurant (elBulli, 2011). By tapping into different art forms, Adrià has been able to revolutionize his own. He also found inspiration from architecture. For instance, deconstructivism, which is a movement of postmodern architecture that began in the late 1980s, influenced some of elBulli most famous dishes. A notable example is the "deconstructed tortilla":

> *"To understand how it works, let's look at what he does with a classic dish of his native land, tortilla española - Spanish omelette. First, he reduces the old-fashioned tortilla to its three component parts: eggs, potatoes and onions. Then he cooks each separately. The finished product, the deconstructed outcome, is one-part potato foam (food-foaming is another technique Adrià has given the world), one-part onion purée, one-part egg-white sabayon. One isolated component is served on top of the other in layers, and topped with crumbs of deep-fried potatoes. The dish, minuscule, comes inside a sherry glass. Adrià, with the playful irony that exists in practically everything he does, names this dish... tortilla española."* (Carlin, 2006)

Also, one cannot reduce Adrià's influences to the domains of science and art alone. He paid immense attention to the day-to-day reactions and emotions of customers tasting the new dishes, which were patiently elaborated, and this explains why he finally defined his movement as "techno-emotional gastronomy". Adrià

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thus never considered that his team at elBulli was following a linear process of innovation initiated by a preliminary phase of research. There was constant feedback between the ideation process and the innovative process. He was continuously coupling and decoupling the two distinct processes.

Managing Creativity at elBulli: Building an Ambidextrous Organization

The separation between the activities focusing on exploration and exploitation has been a basic organizational pillar at elBulli. The decoupling between exploration and exploitation was not only implemented in space but also in time. To sustain his commitment to creativity – and for lesser-known economic reasons – Adrià decided that, from 1987 onwards, the restaurant would close for five months during the winter (which later became 6 months in 1994) to dedicate time to creativity and research. So, in the winter time, Adrià and his team of chefs used to explore, create, and dream up the menu for the following season, in the elBulliTaller ("taller" meaning "workshop" in Catalan) – a place conveniently located just a two-minute walk away from the famous La Boqueria market in Barcelona. Since the launch of elBulliTaller in 2000, two distinct teams were formed: one team in elBulliTaller dedicated to research and experimentation to create new recipes and another at elBulli restaurant reproducing those recipes (Svejenova et al., 2007).

This remarkable form of organization creates "contextual ambidexterity" (O'Reilly & Tushman, 2008; Gibson & Birkinshaw, 2004; etc.) that enables and encourages all individuals to decide for themselves how to allocate their time between activities aimed at alignment (oriented towards the exploitation) and those aimed at adaptability (oriented toward exploration). In comparison, *organizational ambidexterity* can be defined as an organization's ability to balance exploration and exploitation in order to be creative and adaptable. This term, which was first coined by Duncan (1976), has been highlighted by a famous article by March (1991). In his article, March emphasized that, on one hand, organizations that focus solely on exploration face the risk of wasting resources on ideas that may not prove useful or may never be developed. On the other hand, organizations that focus only on exploitation may accept status quo performance and products and may fail to reach optimal levels of success. Therefore, *contextual ambidexterity* expresses the capacity to simultaneously achieve alignment and adaptability at a business-unit level. The origin of structural ambidexterity can be traced to arguments that a company must innovate to ensure long-term success and should consider a dual structure, one to initiate and another to develop innovation as a way to achieve its objectives.

Considering the diversification of activities, a new organizational branch called elBulliCarmen was created in 2001 to deal with all the activities that do not have a direct link to creativity. In this way, having different organizations, the team avoided interferences with the creative work run at elBulliTaller. Also, to reinforce the priority given to exploration, Adrià decided in 1998 to serve only dinner, which allowed the team to undertake more exploration activities during the daytime.

Applying elBulli's Creativity to Other Fields

One main innovation of elBulli has been to integrate different art forms into *haute cuisine*. Adrià has been inspired by diverse sources as sculpture, painting, and design. In parallel, the exploration developed in elBulli workshop has also served as a source of creativity to be applied in other artistic fields. For instance, in the early 2000s, elBulli started to work with top designers to develop new concepts of utensils for preparing and serving food. elBulli has also collaborated with scientists to research physical and chemical processes. Those projects were later transferred to the Alicia Foundation, a collaborative project that has a scientific, gastronomical, social, and cultural role to research food processes, health, and gastronomy. In 2004, the social interest also pushed the elBulli team to start the Fast Good project in collaboration with a major Spanish hotel chain to provide healthy quality food at a low cost.

elBulli has also supplied consulting services on creativity, mainly in the hospitality sector. For instance, a consultant project with a hotel's restaurant near Seville was extended to the whole hotel (now elBullihotel), aiming to transfer the experience of a 3-hour dinner to a 24-hour hotel stay(elBulli, 2011). Since 1999, elBulli has signed agreements with major consumer brands to apply their expertise to the food industry. Collaborations with other companies also aim to extend the concept of gastronomy to a holistic experience. For instance, elBulli, together with Cirque du Soleil, will soon launch a project in Ibiza to "to explore what happens when food, music, and art collide" (Cirque du Soleil, 2015). All these collaborations beyond the world of haute cuisine show how Adrià and his team have been able to apply their creativity developed in gastronomy to develop new business.

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Closing of the Restaurant and the Future of elBulli

Despite its worldwide reputation and the fact that the restaurant, which could accommodate 8,000 diners a season, received more than two million requests, Adrià voluntarily closed the restaurant in July 2011. Some invoked financial reasons. Indeed the restaurant was regularly losing money. "For example, from a strictly financial perspective, choosing to close elBulli for lunch — which Adrià decided to do in 2001, just as the restaurant's popularity was soaring — cost him and his partner an estimated €1 million a year" (Borden, 2015). However, for Adrià and his team, the reason for closing at lunch was not financial – the aim was clearly to increase the time spent during the day for exploration, and the lost time for exploitation was an accepted side effect. Nonetheless, there could have been ways to improve the situation. For instance, considering the waiting list of millions of people, Adrià could have increased the price of the meals to balance the budget – the average cost of a meal was €250, far less than some of the other best restaurants of the world. Also, reducing the number of employees could have been another solution (of April 2008, the restaurant employed 42 chefs). All these financial considerations were not for Adrià a major issue. Despite the fact that the restaurant was not profitable, it served to increase Adrià's international reputation and allowed him to develop "by-product activities" that made their business model sustainable. Those activities (such as conferences, books, and revenues from elBulli's catering division) brought in up to €400,000 a year, and revenues from V.I.P. fundraising dinners earned about €3.5 million. The reasons for closing the restaurant were more related to the search for new creative frontiers beyond the daily life of serving tables rather than for purely economic reasons. According to his brother Albert: "We had to kill the beast. After so many years, there was a fear of the passion dying" (Collins, 2013). Ferran Adrià's priority has always been creativity beyond profitability. As he used to say: "Don't look for success, look for happiness".

The closing of the restaurant in 2011 and the announcement of the launch of elBulli Foundation have initiated a new phase by enlarging the research on creativity to other areas beyond gastronomy. Adrià is working with talents of different disciplines; the goal is no longer to define the rules of a new movement in gastronomy, but to write the manifesto of what could be unique experience offered to customers by mixing different artistic and scientific approaches from many domains, including gastronomy. The concept of the foundation is still under construction, but several projects have already started. The former restaurant facilities will host the elBulli1846 project, which will be a space where a team will work for six months a year on creativity applied to gastronomy. Another project is elBulliLab, a space that centralizes different projects around creativity based on a methodology to decode creative processes that can be applied to gastronomy as well as other creative disciplines.

Conclusion

From a beach bar to a "laboratory of innovation", the history of elBulli is the story of an institutional entrepreneur that succeeded in developing an individual business model based on creativity (Svejenova et al., 2007; Svejenova et al., 2010). elBulli as a restaurant was not a profitable business, but its success was based on being a creative powerhouse where new codes of *haute cuisine* were developed. The influence of Ferran Adrià and his team has gone beyond the world of gastronomy and has allowed them to develop profitable projects based on elBulli's reputation. The capacity for creativity at elBulli was far more important than the restaurant itself. Proof lies in the closing the restaurant, which did not represent the end of creativity, but rather the opposite. The elBulliFoundation represents a new venture that focuses on fostering and researching creativity and innovation in a wider spectrum of fields. In contrast to other star chefs that have decided to capitalize on their prestige by opening several restaurants around the world (e.g., Joël Robuchon, Alain Ducasse, or Pierre Gagnaire) or by becoming TV celebrities (e.g., Gordon Ramsay or Jamie Oliver), Ferran Adrià and his team decided to diversify and apply their knowledge and creative capacity to other fields.

The elBulli case illustrates how creativity can be put at the heart of a business. In the case of elBulli, creativity is not only the source of innovation to develop successful products and services, but it is the main goal of the organization. Adrià and his team have succeeded in developing their creative skills and internal processes to the point of revolutionizing *haute cuisine* and influence other fields.

Although ideas are mostly black boxes in innovation theories, the elaboration of the elBulli case in this article demonstrates that idea management is a long, complex, and highly strategic and specific process that requires investments of time, resources, and effort. The analysis of Adrià's creative process presented in this article provides some conclusions related to the manage-

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ment of creativity and innovation in organizations. They can be summarized in five points. First, in contrast with a linear conception of the innovation process with an initial chaotic ideation phase (i.e., a fuzzy front end) followed by a controlled stage-gate process, the case shows that, in highly creative contexts, ideation and innovation processes are intertwined and intimately linked in a continuous process of coupling and decoupling. Second, the case illustrates the importance of organizational ambidexterity, where activities of exploration and exploitation feed each other, ensuring the present as well as the future competitiveness of the organization. Third, a creative endeavour is not the result of luck or randomness; it is an intentional process of deep analysis of the phenomena involved (e.g., in the case of elBulli, to understand the scientific principles in cooking) and the internal creative process (e.g., Adrià's extensive coding and documenting). Fourth, creativity can be enhanced by actively searching for combinations of different knowledge bases. Integrating external knowledge and practices (from other fields and industries) can potentially lead to new and unexpected innovative outcomes. Finally, the case shows how creativity can be present in all the activities of a company, to the point of becoming the core of the company and its main purpose.

To a large extent, we consider that the lessons learned from this extremely creative organization could be useful to understand the evolution of the management of innovation in a context of growing need for creativity.

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Keywords: creativity, innovation, creative process, exploration, exploitation, ambidexterity, haute cuisine, gastronomy, elBulli, Ferran Adrià

Lessons in Creativity from the Innovative Design of the Swatch

Gilles Garel

> *"I see no advantage in these new clocks. They run no faster than the ones made 100 years ago."*
>
> Henry Ford (1863–1947)
> Business magnate and founder of Ford Motor

No space is off-limits to innovation, even those occupied for many years by leading players and proven solutions. The case of the innovative Swatch watch, re-examined in this article with new information and insights, demonstrates that, without knowledge, design is not possible; but, with only knowledge, all we can do is reproduce. Innovation also requires creativity, the introduction of new concepts. Knowledge needs to be associated with unbridled, surprising, and hitherto unknown creativity, as described by the concept-knowledge theory of design. In this article, a new analysis of the well-known but misunderstood case of the Swatch yield lessons about the importance of creativity and knowledge in developing innovative products.

Introduction

If all rival companies had the need to innovate on a permanent basis, many would be wary because innovation always represents risk. This risk is not only financial but also somewhat philosophical, because it requires acceptance of uncertainty, the possibility that the result does not correspond to what was initially planned, and the potential for complete failure. Faced with these fears, renovation often prevails over innovation: everyone dreams of revolution but most firms end up working towards evolution. It is "starkly rational", explains Christensen (1997).

Strategic management research can explain the actions of leaders through mimicry, but without clear points of reference. When it is foggy, and you have no clue of where to go, you follow the person right in front of you, because it is reassuring to have someone to lead the way. But does that necessarily mean that you are on the right path? When everyone follows everyone else, we all go round in circles. Fortunately, the innovator is there to break that circle. The innovator refuses to accept the situation as it is. The innovator breaks the rules, moves to the side, shifts everything around, goes beyond the framework in order to challenge and set a new one. The innovator chooses the side roads and takes the risk of starting a revolution.

How do you go about changing how you think in such a way that you end up creating new ideas that were previously considered impossible or unacceptable? This article starts with this broad question and uses it to revisit the case of the Swatch watch. The aims of this article are to unveil the unknown story of the Swatch design to highlight the innovation mechanisms that took place and to extract lessons to apply to other innovation contexts. The Swatch design process is analyzed through to the concept-knowledge theory of design. Throughout the Swatch design story, there was continuous interaction between concepts and knowledge, with engineers participating in conceptual matters and with creative people involved in engineering matters. Without knowledge we cannot design; but with only knowledge, we only reproduce. Innovation requires knowledge and creativity. On the other hand, the Swatch case highlights how designers both eliminated and reused various components.

Technology innovation never starts from scratch. Thus, we first revisit the history of the watch industry in Switzerland and the industrial crisis that the industry

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faced in the late 1970s. Then, we examine the development of the Swatch as innovation in response to this crisis. Then, by analyzing the interactions between concepts and knowledge through the interactions between engineers and designers, we are able to extract valuable lessons about creativity in innovation.

The Swatch Design: The Unknown Story

"Every business person knows the Swatch story" (Moon, 2004). The "Swatch" is a quartz wrist watch, made of welded plastic. It is simple-looking, sturdy, very inexpensive to manufacture, and it possesses the quality and durability of traditional Swiss watches. This watch is also known for its drawings, designs, and infinite colours that have been created over many years and through multiple re-launched collections. It is more than a functional object. It is a creative, artistic, emotional, and fashion accessory. On March 1, 1983, the first Swatch watch was launched on the Swiss market. Today, Swatch is among the iconic brands of the world. Nearly 550 million Swatch watches, of various models, have been sold. Before Swatch, it seemed impossible to mass produce and sell a quality Swiss watch for barely 50 Swiss francs while achieving comfortable margins. More than thirty years later, the watch remains virtually unchanged from its original version – an exceptional accomplishment for a consumer product. The history of Swatch is so well known that it seems vain to revisit it.

But actually, the genesis of the Swatch flagship innovation is actually unknown or falsely known. This distorts the lessons that one can normally draw from such an innovation. Until now, we have known little about the pre-launch period, the time that elapsed between the original concept of the Swatch and its early success on the market. Yet, this period is rich for learning about innovation and creativity management. Many studies concerning the Swatch have already been conducted (Gabarro & Zehnder, 1994; Tushman & Radov, 2000). These publications are characterized by two main ideas. First, they begin at the point of the initial product launch on the consumer market and largely neglect the pre-launch conceptualization and development of the product, thus focusing on Swatch as a marketing success; much attention is given to the global distribution, permanent recovery design, and affordable fashion accessories associated with the product. Secondly, the approach of these studies promotes the notion of an inspired vision of a great leader. An individual imagines a future innovation and their vision is turned into reality by engineers and skilled marketers. Such an analysis could be inspiring and flattering for future senior managers who can imagine how they would be able to influence the course of business life by their personal inventiveness. However, this interpretation of the history of Swatch is not borne out by a thorough analysis of the facts. Contrary to popular belief, the famous Swatch watch was not invented by Nicolas Hayek (Wegelin, 2009), who arrived at the company two years after the original concept was devised. The paternity and managerial mythology is still an interesting question when you deal with innovation and creativity management.

Very few people who have written about the Swatch management were close to the real actors, the people who actually created the design. We only had access to some of the firm's archives, because the Swatch Group did not support our efforts. Now, we have been able to interview actors involved in producing the Swatch, in addition to consulting academic works, including case studies and articles in the business press and Swiss newspapers published around the time the Swatch was launched. In particular, this article draws upon on *La fabrique de l'innovation* (Garel and Mock, 2012), a book written by the current author (a researcher) and Elmar Mock, one of the two inventors of the Swatch. Indeed, we found that the pre-launch period in the Swatch story is rich for learning about innovation and creativity management. How was the Swatch invented? Where did the original concept come from? What are the innovative management principles that can be learned from this design?

The search for answers to these questions must be undertaken with an understanding of the historical context of the Swiss watch industry. In 1980, the cheapest watch movements cost 14 Swiss francs. The cost of producing a complete watch with hands, case, bracelet, packaging, and warranty cards was 25 Swiss francs. However, economic realities within the industry led Ernst Thomke, the CEO of ETA (today part of Swatch group), to mandate a production cost of 10 francs. To achieve a radical 60% cost reduction, one thing was clear: there must be no reliance on past experience to achieve the required improvements. All previous knowledge and experience must be challenged. Instead of looking to the past and searching for improvements, they would have to start from scratch and design a completely new watch. The Swatch was developed in a time of crisis, which both shaped and stimulated the innovation.

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A Deep Industrial Crisis

In the late 1970s, a crisis directly threatened the survival of the Swiss watch industry. After World War II, Switzerland controlled 90% of timepiece production and retained, until 1970, 85% of the world wristwatch market. In just ten years, its share of the market collapsed; by 1980, it controlled only 22% of the market. In 1983, this share dropped even further to 15% (Donzé, 2009). Asian competitors, mainly Japanese, started pushing the Swiss out, notably by offering cheap quartz watches. The Swiss had invented quartz technology, liquid crystal displays, and the first electronic watches, but it was in Asia that these technologies were transformed into new products at the end of the 1970s. These countries flooded world markets with digital and analog quartz wristwatches, which even replaced cheap, but less accurate, Swiss mechanical watches such as the Roskopf. At that point, anyone could make an accurate timepiece without skills in the art of watchmaking. This new reality represented an upheaval, a major paradigm shift in the sector: accuracy no longer depended on quality work and therefore price. The wristwatch was now available to all and the Swiss were the big losers in this revolution. Any company could now buy very low-cost quartz movements and enter the world wristwatch market. The crisis had catastrophic consequences in terms of employment. Between 1970 and 1980, the Swiss watchmaking industry lost two-thirds of its workforce, shifting from 90,000 employees to around 30,000. Of the 300 million watches sold worldwide at the start of the 1970s, only 80 million were produced in Switzerland. Quartz replaced mechanical movements, transforming the Swiss industry into a museum for luxury brands. At the start of the 1980s, Switzerland was completely absent from a world market of 450 million watches for less than $100, while it represented 97% of the market for watches with price tags over $350. Foreign competitors even offered to buy up prestigious brands such as Omega, Longines, and Tissot. In 1980, the Swiss watch industry was indeed threatened with extinction.

Innovation in Response to a Crisis: The Swatch Project

The saga of the Swatch started at the end of 1979 at ETA, a key firm in the Swiss watchmaking cartel industry. The initiative was triggered by an unlikely encounter involving three people from ETA: one senior manager, Ernst Thomke (the CEO), and two young Swiss–French engineers at the bottom of the corporate ladder, Elmar Mock and Jacques Müller. The Swatch was never planned. It was not the result of a deliberate innovation strategy, a carefully thought out scheme or a brilliant vision.

The first Swatch drawing (Figure 1), which at this time was named “Vulgaris”, was proposed to Thomke by Mock and Müller on March 27, 1980. Even though it looked like a child's drawing, Ernst Thomke decided to support the engineers who had represented what they

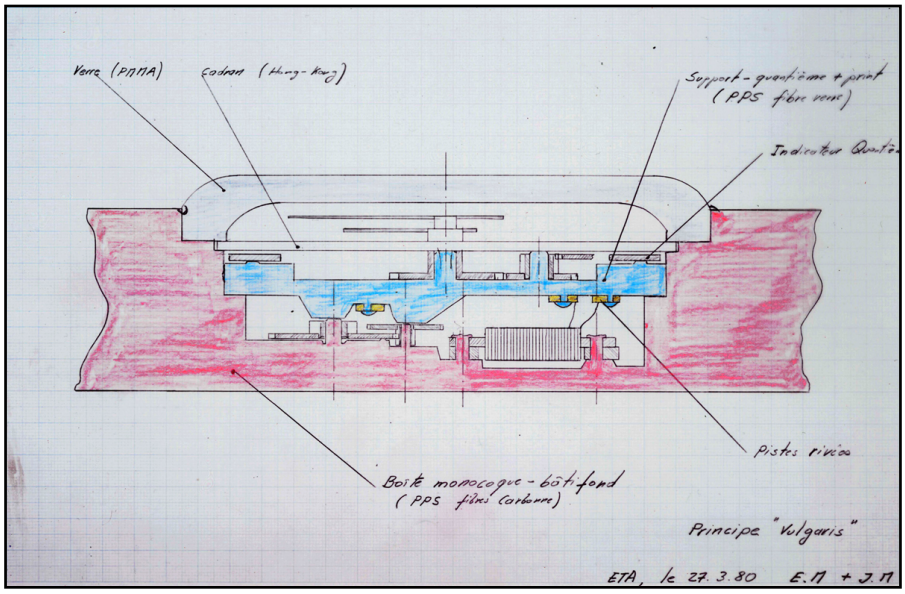

Figure 1. First sketch of the "Vulgaris" watch (March 27, 1980), which ultimately became the Swatch. Reproduced with permission of Elmar Mock.

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envisioned from their own experiments with a new engineering plastic process. Thomke had already requested his R&D group to design a radically different watch, but he had received no worthy proposals. Mock and Müller's design was the first concrete and tangible proposal. There is no innovation without a definitive representation that speaks to the decision maker: a drawing, a model, a prototype, etc. Mock and Müller's simple drawing and proposed process clearly spoke the decision maker: the project was launched and would finally be completed in exactly three years with the launch of the Swatch onto the European market on March 1st, 1983 (Figure 2).

However, the European launch was not the first. In November 1982, the Swatch experienced an early setback with a failed launch of 10,000 watches in Houston Texas. Marvin Traub, CEO of Bloomingdale's, did not want to promote and sell such a product. He demanded at least twenty different models, a new collection every six months, and not only colourful watches, but designer watches as well. The American launch, while a commercial failure, was a decisive learning experience in differentiating the watch. The American market was in fact a test of ETA's iterative process of designing the Swatch: work well and fast, act without delay, learn, and try again.

Innovation as a Rigorous and Continuous Interaction between Concepts and Knowledge

To return to the pre-launch activities, the story of Swatch actually started on the plastic-process side. Because Mock learned how car signal lights and headlamps were welded, he was able to experiment with, and then propose, solutions for, mounting plastic glass onto the plastic case of an injection-molded watch. After his training, he met with many plastic suppliers, and in particular with Branson, a manufacturer of plastic-welding machines, who would lend him equipment. Mock was also influenced by compass designs, certain of which are assembled using ultrasonic welding and contained liquids. After many trials and discussions, the technological choice of ultrasound welding prevailed. ETA would gradually acquire new knowledge in plastics and, above all, learn how to use them. The choice of ultrasound entails paradoxical consequences: a strong and water-resistant watch, a low-cost product (that would also contribute to achieving one of the criteria of a 10 Swiss Franc production cost), and an "unrepairable watch", which constitutes a very innovative but perplexing property. Why bother to repair a product that only cost 5 francs to manufacture? And, because the watch is welded, it cannot be repaired, and because it cannot be repaired, its manufacturing pro-

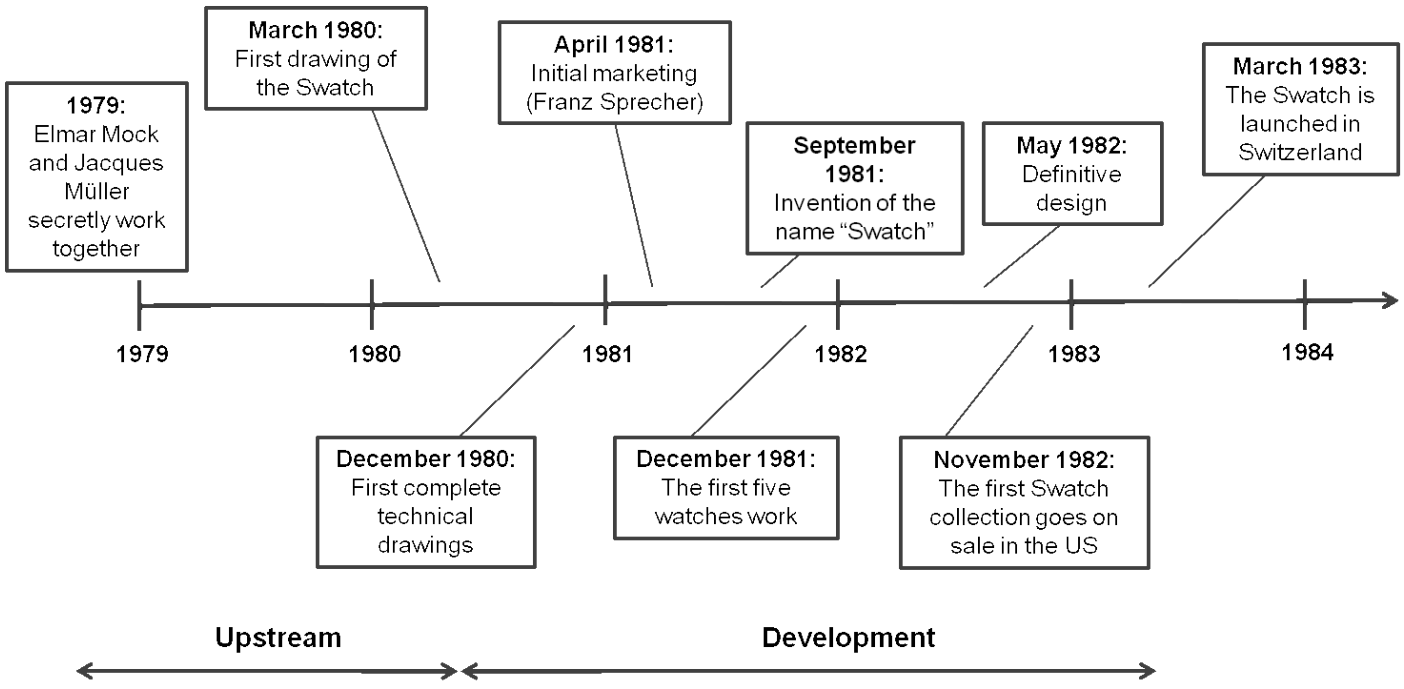

Figure 2. The Swatch timeline

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cess must be flawless. Although the impossibility of repairing the Swatch could have put the brakes on the project, in the end, this characteristic forced the firm to constantly improve its mastery of the manufacturing process. This constraint condemned the firm to strive for total quality, which spurred on the designers to increase the performance of the process and quality of the watch. Finally, the quality of the Swatch was based on a simplified architecture and reduced number of components to 51, down from the more than 150 parts required to make a traditional mechanical watch and even less than the 91 parts needed to make a quartz model. The design cycle is a virtuous one: a welded watch → that cannot be repaired → produced with zero defects → running without fail → built using a simplified architecture → with a reduced manufacturing cost → and a reliable process.

The design process was not spawned by an initial product brief, but exploited new industrial knowledge to define innovative concepts. According to the concept-knowledge theory (Hatchuel & Weil, 2002, 2003; Le Masson et al., 2010), the design process therefore consists of an interaction between a concept space (including ideas considered outrageous: in the concept space reside propositions that are neither true nor false), which gradually takes shape, and the knowledge space (in the knowledge space reside propositions with known logical status: we know whether they are true or false), which develop concomitantly. The cycle progresses with a back-and-forth movement. A concept is created and challenged, from which knowledge is produced, which is then used to challenge and create a new concept. In other words, the concept highlights insufficiencies in the knowledge of the different players who explore them and trigger the development of new knowledge that, in return, calls into question the concept, which can then be extended to new partitions or innovative proposals, as depicted in Figure 3.

Further innovation and iteration occurred when Franz Sprecher, consultant and former relation of Thomke, became the lead marketing for the Swatch design. He arrived after main architecture has been frozen by the engineers, but together, Sprecher and Thomke would transform the watch into an interchangeable accessory, a bit like a tie or earrings. The Swatch was "fashion that ticks", according to Sprecher. This fundamental turning point would transform the technical object into an innovation as a fashion product. Sprecher enriched the original concept of the Swatch as a low-cost, Swiss-made watch, by shifting and extending it and positioning himself as a visionary strategist behind a world watch and accessory for the masses. This was no ersatz product – it was not a fake, low-cost Rolex in plastic, for example – but a full-fledged innovation.

Sprecher also considered the product as a perpetual event, with a continuously renewed lifecycle via the repeated launch of new Swatches into the market. At that time, the lifecycle of a product was defined in terms of duration, not as the continuous redefinition of the product itself, and thus Sprecher's approach to the product lifecycle was a further innovation.

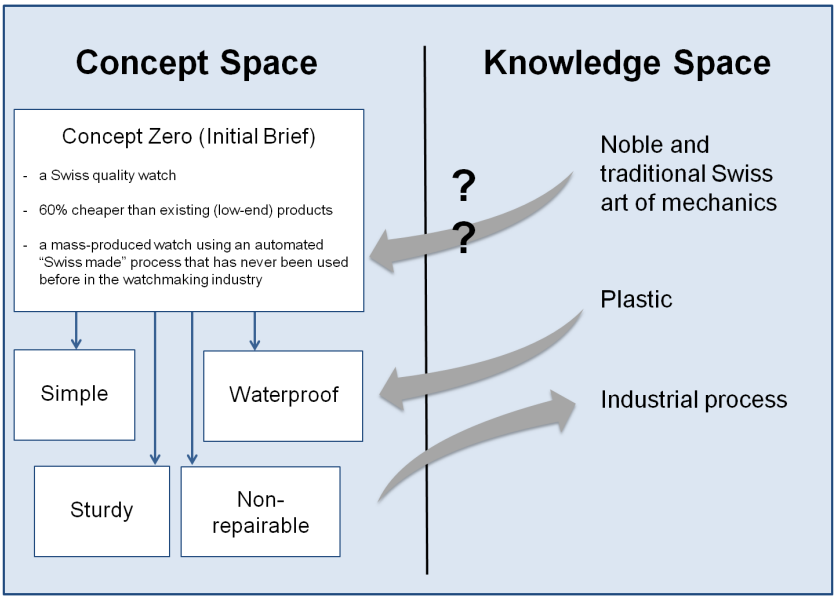

Figure 3. Interactions between concept and knowledge spaces in the early stages of the Swatch design

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The fashion orientation put forward by Sprecher influenced the external shape of the Swatch. The designers could not imitate metal cases that were the reference at that time. Fake metal was trendy then, but it was also a trap that needed to be avoided. The challenge was to make something "noble" out of plastic. To achieve this goal, the designers proposed case shapes that were neutral: like water, they were colourless, tasteless, and insipid. The Swatch design would stand out by its lack of character. The watch was to be subdued. The simplicity and neutrality of its design would not shock anyone. The case, with its lack of charisma and boldness, was meant to blend in and be accepted. This was the beauty of its design. The excellent neutrality of the shape would allow the watch to work with all sorts of graphic designs. The plastic's tactile qualities (a soft-touch matte plastic) result from sanding the mold that shapes the polymer resin. The Swatch must be seamless, without any rough edges. To achieve such a result, engineers and designers had to closely work together through the concept-knowledge iterations described earlier and illustrated in Figure 4.

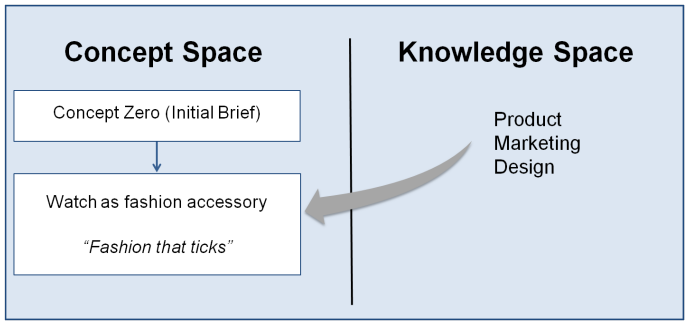

Figure 4. Interactions between concept and knowledge spaces in the later stages of the Swatch design

Conclusions and Lessons Learned

An essential condition in this design process was to fundamentally question "everything that goes into a watch", an idea that had been taken for granted before, while preserving its traditional properties so the customer could still recognize them. The Swatch is finally an oxymoron: a watch with a case, glass, hands, strap, etc. that is no longer a watch in that it has new properties as a fashion accessory. From our analysis of this case, we conclude by offering two key lessons: i) a reuse strategy for design and ii) the importance of concept and knowledge as cornerstones of the design process.

Reuse what already exists

Reusing old ideas has been part of innovation strategies for a long time (Majchrzak et al., 2004). But, using what already exists and hiding it from the customer while only showing them some new aspect instead, is a difficult thing to do. In the case of Swatch, many aspects of existing watchmaking knowledge went into its design: the case mainplate had already been patented in 1880; cheap plastic watches had already been launched by Fortis, Oris, and other brands; the handsetting mechanism was inspired by the one on Cyma clocks from the 1930s; a simplified Lavet motor had been developed by Ebauches Bettlach; and so on. Reusing existing ideas supposes a huge knowledge base. Mock and Müller were not just aware of modern or new technologies, they also acted as genealogists and historians of watchmaking techniques. Some recycled knowledge also came from elsewhere, including sectors entirely unrelated to watchmaking. For example, welding the Plexiglas watch glass to the case in ABS plastic comes from a common practice in manufacturing car headlights. It is sometimes necessary to look in distant sectors for the knowledge needed for the design process. We never disrupt from scratch!

Concept and knowledge are the cornerstones of the design process

The Swatch case demonstrates that, without knowledge, we cannot design; but, with only knowledge, we can only reproduce. Innovation requires knowledge and creativity. The Swatch design process adhered to the concept-knowledge) theory of design. There was rigorous and continuous interaction between concepts and knowledge with engineers participating in conceptual issues and creative people involved with engineering matters. The engineers are also on the concept side and the creative people on the knowledge side of engineering. No space is off limits for innovation, including those areas occupied for long periods by leading players and proven solutions.

Recommended Reading

La fabrique de l'innovation by Gilles Garel and Elmar Mock (2012). English translation scheduled for publication in 2016 by Taylor and Francis.

Lessons in Creativity from the Innovative Design of the Swatch

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Luxury and Creativity: Exploration, Exploitation, or Preservation?

Joanne Roberts and John Armitage

> *"Craftsmanship names an enduring, basic human impulse, the desire to do a job well for its own sake."*
>
> Richard Sennett
> In *The Craftsman*

This article considers the role of creativity in the production and delivery of luxury. The concept of creativity is closely aligned to the idea of luxury goods as rare and highly crafted, often unique, objects produced through artistic endeavour. Moreover, some luxuries, such as expensive cars and private jets, require leading-edge design and technologically advanced inputs. Although creativity is essential for the development of new luxury goods and services, this article highlights that some luxuries are timeless and eschew the changes associated with radical creative transformations. Following a brief discussion of the nature of luxury and creativity, a number of examples are employed to illustrate the different roles of creativity in the development and delivery of different types of luxury. The relationship between luxury and creativity is shown to be varied and complex.

Introduction

The global market for luxury goods and services is expanding rapidly. Its value exceeded €850 billion in 2014, having grown at a rate of 7 percent on the previous year (D'Arpizio et al., 2014). This luxury market growth is accounted for by increasing incomes in advanced countries, especially among the wealthy who have been relatively unaffected by the global financial crisis of 2008, and the expanding middle classes in emerging countries. Moreover, the luxury sector can be regarded as an important element in the creative economy. Indeed, it has been highlighted as a key driver for growth in Europe (ECCIA, 2012; Foray, 2010).

In this article, the link between luxury and creativity will be interrogated. The production of, for instance, seemingly avant-garde haute couture collections from Chanel and Alexander McQueen in line with the increasingly rapid fashion cycle does require creativity; but, to what extent is creativity an essential component of all types of luxury? Is it not possible that luxury may derive from stepping out of the rapidly changing world of creative transformations into a timeless landscape where a major component of a luxury depends on the preservation of traditions and age-old practices? To investigate these questions, we consider a number of different luxuries to evaluate the extent to which creativity is present in their production and delivery. In so doing, we seek to reveal the varied and complex relationship between luxury and creativity.

We begin by considering the contemporary meaning of luxury, drawing on a critical engagement with the work of Berry (1994). Creativity will then be explored, before the relationship between luxury and creativity is examined. Illustrative examples will be employed to highlight how the nature of creativity and its significance varies between different types of luxury goods and services. The article concludes with consideration of the implications of the findings for managers of luxury businesses and for scholars concerned with creativity in the luxury sector.

The Nature of Luxury

In popular discourse, luxury is often associated with expensive, elegant, and refined goods and services of the highest quality as well as with a rich, comfortable, and sumptuous lifestyle. Additionally, luxury is related to ex-

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cessive quantity and viewed as superfluous, unnecessary, or indulgent. In his highly influential book, *The Idea of Luxury,* Christopher J. Berry (1994) provides a detailed historical exploration of luxury and defines it as the antonym of necessity, in that it is distinct from basic needs, which are non-intentional and universal. For Berry, luxury occupies the realm of wants and desires. Yet, he goes on to argue that luxuries must be the object of socially recognized desire, and, as such, are capable of giving pleasure rather than merely relieving pain.

What is clear from Berry's (1994) analysis is that luxury cannot be objectively defined because it depends on cultural, social, and individual contexts and meanings. Goods and services that may be regarded as socially non-necessary by some may be "needed" by others, either in a specific instrumental sense or because they are the object of intense desire (i.e., psychologically necessary) or intense identification (e.g., cherished objects). Consequently, not all unnecessary goods or services are luxuries to everyone.

Veblen's (1899) concept of conspicuous consumption, which is so often associated with luxury goods and services, can, according to Berry's perspective, be interpreted as the instrumental consumption of luxury with the purpose of signalling social status. Hence, some consumption of luxuries may actually be necessary for individuals to maintain their social position. For Berry (1994, original italics), *"luxuries are those goods that admit of easy and painless substitution because the desire for them lacks fervency".*

In contrast to Berry (1994), in an earlier article, we offered an alternative definition of luxury goods and services inspired by Marcuse's (1964) critique of elites who follow their economic desires or "false" social needs. Hence, we defined luxuries "not as painless substitutes lacking fervent desire but as alienating surrogates saturated with the urgent sense of a life determined by external forces, and consequent lack of control or authenticity and oneness with ourselves" (Armitage & Roberts, 2014). In this view of luxury, media and its deployment by luxury businesses plays a crucial role promoting "false" needs. Hence, creativity in the use of media underpins the demand for luxuries of all sorts and drives the luxury sector's growth.

From a business and marketing perspective, Chevalier and Mazzalova (2012) argue that a luxury product must meet three criteria: i) it must have a strong artistic content, ii) it must be the result of craftsmanship, and iii) it must be international. The link between art, craftsmanship, and luxury is not new. Works of art and the products of craftsmanship normally require high levels of skill, time, and expensive materials. Therefore, their consumption has been the preserve of wealthy individuals and institutions. Nevertheless, changing income levels and techniques of production have made these products increasingly available to a wider range of individuals since the late 20th century. Chevalier and Mazzalova's (2012) suggestion that, for something to be a luxury, it must also be international, is very much a consequence of the globalization that has taken place from the mid-1980s onwards. It is also a suggestion that is embedded in a business perspective on luxury, which is primarily concerned with market size and the expanding geographical reach of brands as a means to produce sustainable profits, especially among the large luxury sector conglomerates including, for instance, LVMH, Kering, and Richemont.

Thus, if luxury is international, it must be recognized as such in various different locations and different cultures. This suggests that there is a homogenizing process. Yet, if luxury is socially constructed, and we live in a diverse social world, how can luxury be recognized as such across the globe? The international recognition of items as luxury occurs among a global elite who have more in common with one another than they do with their national counterparts. A wider population aspires to join these elites and they satisfy these aspirations by imitating the consumption behaviour of elites.

Luxury has also been classified in terms of its accessibility by Allérès (1990) who identifies three levels of luxury: i) inaccessible (exclusive unique items), ii) intermediate (expensive replicas of unique items), and iii) accessible (factory produced in large production runs). In the contemporary era, we are witnessing a democratization of access to luxury, and a proliferation of terms, such as new luxury or mass luxury. According to Kapferer and Bastien (2012), this is the result of, on the one hand, the efforts of traditional brands to trade up, and, on the other hand, the drive for profits among luxury businesses by offering products and services to a wider global market. Such changes also reflect the fragmentation of the production process, such that the design of luxury goods and services may involve significant artistic inputs and craftsmanship, but the final goods and services can be mass produced in low-cost locations without any loss of quality (Thomas, 2007). Moreover, globalization has given rise to highly profitable niche luxury markets that can be reached through the Internet and social media platforms (Anderson,

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2009) as well as in the first class airport transit lounges through which the wealthy pass en route to their next destination. Formerly regional and national niche luxury markets can be aggregated into highly profitable global markets, allowing producers to gain economies of scale, yet because their luxury products are distributed across the globe, they retain an exclusive quality in local contexts.

This shift to mass luxury has been accompanied by the emergence of the idea of meta-luxury (Ricca & Robins, 2012) and über luxury (Quintavalle, 2013) as counter terms to those that signify the trend towards luxury for all and to make a distinction between mass produced luxuries and those luxuries that remain exclusive, often because they are the result of high levels of skill and craftsmanship, and their cost renders them accessible only to ultra-high-net-worth individuals (i.e., those individuals having a net worth of at least $30 million USD [Wealth-X and UBS, 2014]).

The meaning of luxury varies through time and space, and across economic, social, and cultural contexts. For instance, in 1900, a telephone would have been a luxury, but today it is a necessity in most parts of the world. Additionally, the possession of an Internet-connected computer may be regarded as a luxury in present day's least-developed countries, yet this is seen as a necessity in advanced nations. Moreover, the meaning of luxury has become stratified, reflecting a hierarchy of luxury. In other words, luxury is not a fixed concept but rather a relative and socially constructed term.

Clearly, luxury is a complex idea, but it is also manifested in a very real form in the global marketplace where luxury goods and services may be defined by high price. The characteristics of demand for luxury goods and services differ from those of normal goods. They are often referred to as Veblen goods because they display high price elasticity of demand such that increases in price enhance their desirability (Kapferer & Bastien, 2012). According to Veblen's (1899) theory of conspicuous consumption, as the price of a luxury good increases, the utility that is gained from its consumption rises because it allows consumers to signal their own rising status. Hence, a Veblen good is not necessarily of a higher standard than a normal good; its status as a luxury depends on the perceptions of consumers of its ability to indicate social standing through, for instance, recognizable luxury brand logos. Although there is much anecdotal evidence to suggest that luxury goods and services do display the characteristics of Veblen goods (Bagwell & Bernheim, 1996), it would be inappropriate to suggest that the price of all luxury goods and services is merely determined by consumer demand underpinned by the utility gained from signalling status. Although accessible luxury delineated by Allérès (1990) may be differentiated from normal goods largely by higher prices, with consumers willing to pay more to display their social rank, for those luxuries that Allérès defines as inaccessible, in the sense of being exclusive unique items, their high price relative to normal goods is likely to be determined by the greater costs of production. Although the high price of such inaccessible luxuries will attract consumers who gain utility from signalling status, the price of such luxuries will primarily be based on the high costs of production rather than solely on demand derived from the desire of consumers to demonstrate their elevated social position.

From a business perspective, goods and services acquire luxury status from the perceptions of consumers, or the high production costs, or a combination of the two. Nevertheless, whatever the source of luxury status, it is important that managers of luxury businesses remember the socio-cultural underpinnings of the meaning of luxury. This is because, as a socially constructed concept, what is defined as luxury and therefore what are recognized as luxury goods and services can shift rapidly due to factors beyond the commercial domain.

The Nature of Creativity

Creativity is the capacity to bring into being original ideas, whether embodied in tangible or intangible forms. Discussions of the nature of creativity often focus on identifying the characteristics of creative individuals (e.g., Amabile, 1997; Csikszentmihalyi, 1996). For instance, in her theory of creativity, Amabile (1997) identifies three key components of individual creativity: expertise, creative-thinking skills, and intrinsic task motivation. She argues that creativity is most likely to occur when an individual's skills overlap with their strongest intrinsic interests; and, the higher the level of each of these three elements, the greater the propensity for creativity. This focus on the individual as a source of creativity is evident in popular debates, which emphasize the role of creative individuals and their need for freedom to express their talent or vision (Bilton, 2007). It is a conception that is often reflected in the field of luxury by the emphasis on, say, the promotion of the name of fashion designers producing luxury garments and accessories. Luxury fashion houses bear the name

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of their originators and subsequent fashion designers are promoted in their own right as well as part of the fashion house. By linking the product to an individual designer, luxury brands attempt to reinforce the importance of the individual's creative talent that inspires the product. Yet, such creativity is, more often than not, the work of many individuals working as a team, with each member contributing their own specialist skills and creative input. As Cummings, Bilton, and ogilvie (2015) argue, creativity occurs through group dynamics. So, for instance, the creative talents of the fashion designer Karl Lagerfeld at Chanel are facilitated and realized by a team of individuals working closely with him, including the many métiers d'art upon which Chanel couture designers rely (Colapinto, 2007). Moreover, as Bilton (2007) argues, conflating creativity with individualism disconnects creative thinking and creative people from the socio-cultural and economic contexts that give meaning and value to innovations and individual talents. So, the meaning and value of Karl Lagerfeld's creative talents must be considered within the context of the Parisian haute couture community and the broader global fashion culture.

We are all creative to some degree, and creativity occurs at numerous levels and with varying degrees of originality. According to Amabile (1998), in the field of business, creativity goes beyond originality: "To be creative, an idea must also be appropriate – useful and actionable. It must somehow influence the way business gets done – by improving a product, for instance, or by opening up a new way to approach a process." This understanding of creativity is close to Tushman and Nadler's (1986) definitions of innovation as "the creation of any product, service or process which is new to the business unit". In contemporary discussions, the terms "creativity" and "innovation" are often used interchangeably (Bilton, 2015), yet they are not synonymous. Although creativity is a necessary component for innovation, alone it does not guarantee innovation, which, from an economic perspective, involves the development of some new knowledge or invention such that it can result in the production of intermediate or final processes, goods, or services available in commercial markets. Innovation, then, necessitates the development of value from creativity and invention. Involving more than the creative process, innovation includes activities such as marketing, sales, and production. Moreover, the synthesis of market needs with technological possibility and production capabilities is required for effective innovation (Tushman & Nadler, 1986).

Following Amabile (1998), we take creativity in the business context to go beyond the generation of new knowledge, and to include the application of new knowledge in the commercial sphere. Hence, the focus here is on the nature of creativity that is taken up by luxury businesses in terms of whether they adopt radically creative developments of their goods and services or production and delivery processes, or whether the creative input in these areas is more incremental. Furthermore, we seek to highlight what Bilton (2015) has recently termed "uncreativity", which he defines as "resistance to new ideas". Bilton (2015) views uncreativity as essential to the creative process in the sense that the "purportedly uncreative traits of scepticism, doubt and resistance to change are essential to the creative process". However, we seek to build on his observation that uncreativity directs attention to issues of value and fitness for purpose, thereby providing a counterbalance to the pursuit of novelty for its own sake (Bilton, 2015). We argue that, in the field of luxury, the changes brought about by creativity may be eschewed by some producers in favour of preserving existing goods, services, and production and delivery practices.

Nevertheless, although some luxury producers resist the change that creativity may bring, others embrace such developments, whether such creativity leads to incremental developments or more radical transformations. In relation to the development of knowledge in organizations, March (1991) makes an important distinction between the *exploration for new knowledge* and the *exploitation of existing knowledge*. The exploration for new knowledge can result in radical new production processes or intermediate or final outputs. However, the exploitation of existing knowledge, for instance, in new situations or applications, can lead to incremental changes to existing production processes or intermediate or final outputs. March (1991) argues that maintaining an appropriate balance between exploration and exploitation is a primary factor in determining the survival and prosperity of organizations. However, we suggest that, in certain luxury sectors, it is necessary to highlight the importance of the *preservation of knowledge* rather than the creation of new knowledge through exploration for knowledge or the exploitation of existing knowledge in new ways. Through preserving knowledge, by resisting change, or adopting only the very lowest levels of creative input, the essence of certain luxuries is maintained. Contrary to March (1991), then, we argue that the survival of certain luxury businesses depends on preservation of knowledge rather than a balance between exploration for and exploitation of knowledge.

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So, for example, the delivery of a greeting to a guest by the doorman at a luxury hotel may be viewed as an act of creativity in the sense that the greeter is performing a role and, in so doing, creating a welcoming atmosphere, which is essential to the quality of the service provided. But, such daily acts of creativity replicate, and preserve knowledge of, original creations largely set out in service delivery systems designed to ensure an excellent service interaction in a given context (Polaine et al., 2013). In contrast, the original introduction of such service systems involves an act of creativity based on either the exploration for new knowledge or the exploitation of existing knowledge. In either case, the creativity involved adds value in the business context because it offers something that is new to the world, such that it deviates in some way from established business norms and conventions, and thereby offers the opportunity to set the business apart from its competitors. While embodying an element of creative action, repetitious daily acts or tasks are not creative because they offer little, if anything, that is new. Rather, they preserve existing ways of doing and acting. Nevertheless, the consistent performance of such daily acts is crucial to the maintenance of service quality and thereby to competitiveness.

Luxury and Creativity

The exclusive element of luxury requires that it should always be beyond the reach of many people. Yet, as incomes rise, more luxuries become accessible to more people, and in the process they become commonplace and lose their exclusive quality. Consequently, there is a constant drive to create new or enhanced luxuries that replace those items and experiences that fall from luxuriousness due to their widespread availability. The current prevalence of mobile phones in the advanced countries sends luxury telecommunication to a new level of exclusive and opulent experience. So, although a mobile phone is accessible to the majority of citizens in advanced countries, one of the world's most expensive mobile phones, such as the British designer Stuart Hughes' Black Diamond iPhone 5, which is covered in 100 grams of solid gold, 600 white diamonds, has a sapphire glass touch screen, and a 26-carat black diamond replacing the "home button", is, at a price of $19 million CAD, out of reach of all but a small number of ultra-high-net-worth individuals (Armitage & Roberts, 2014). In this example, creativity in the design and the use of rare materials take a standard mobile phone from the commonplace into the realm of the extraordinarily rare and hugely expensive. The nature of the creative activity involved in the production of the Black Diamond iPhone is based on the exploitation of knowledge from the jewellery sector and its application to the production of the luxury mobile phone.

The search for ever more luxurious products and services can also be seen in the field of tourism. Although this search may involve exclusive locations and increasingly sumptuous accommodation and service provision, there is also a growing market for adventure-based activity such as space travel. The US company Space Adventures (spaceadventures.com), in collaboration with the Federal Space Agency of the Russian Federation, has for example facilitated space flights for private tourists such as Guy Laliberté, the CEO of Cirque du Soleil, at a reported price of $35 million USD in 2009 (Bertoni, 2011). Clearly, such a price puts this experience out of reach of all but the very wealthy. Not only is the price prohibitive, but the months of training accompanying such adventures rule them out of reach for even many of the ultra-high-net-worth individuals. To cater for the time-poor, and to reach out to a wider market, Virgin Galactic is one among a number of companies that is working to provide commercially viable space travel at a cost of $250,000 USD per seat (Chang & Schwartz, 2014). But, of course, such luxury experiences are heavily dependent on high levels of technological advancement that require huge investments in the exploration for new knowledge. The development of this knowledge into commercially viable services requires a complex innovation process. Nevertheless, such technologically advanced innovation depends upon an initial idea, that is, it depends on creativity. In this case, the idea is radical and requires substantial investment in costly technological resources for its realization.

Related to what might be regarded as more down-to-earth luxuries, we can also see high levels of creativity involving the exploration for new knowledge in, for instance, the production of luxury watches. The development of one of Patek Philippe's 175th anniversary watches, the Grandmaster Chime, priced at $2.63 million USD, for instance, gave rise to six patents (Patek Philippe, 2014). The transformation of the creative ideas embedded in new watch designs through to the actual production of the final product involves a complex innovation process. Similarly, luxury products such as expensive cars, super yachts, and private jets involve high levels of creativity in their design and development and in the integration of new materials and technologies. Although the production of such luxuries also involves the exploitation of much existing know-

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ledge, they also require extensive innovation processes to bring incrementally creative ideas through to the production of marketable products.

Consequently, many categories of luxury evolve through the application of creativity inputs that feed into complex innovation processes, which result in the production of new luxury goods and services or production and delivery processes. However, we argue that there are some luxuries whose very essence is a sense of inertial timelessness and unwavering continuity. Such luxuries do not become widely available as incomes rise because a major component of their costs rises as incomes increase. As a result, some luxuries retain their price differential with other less luxurious goods despite general changes in the organization of economic activity that lead to productivity increases in many sectors. For instance, in highly skilled craft production or service delivery, it is not possible to increase productivity at the same rate as is possible in highly technologically assisted production systems such as factory production or self-service delivery. Therefore, the cost per unit of production cannot be lowered through the application of increasing amounts of technology to increase productivity. So, as incomes rise, so, too, does the cost of the skilled labour required to produce and deliver such goods and services. There are, then, some luxuries that do not become relatively more accessible as the economy expands and incomes grow.

It would however, be a mistake to assume that technology is not essential to the production and delivery of these types of luxury goods and services. Technology, in its broadest sense of the application of scientific knowledge for practical purposes, is central. Although the tools and techniques employed by, for instance, a present-day bespoke luxury jeweller are those that have been in use for many centuries, they are nevertheless technologies that are employed to realize the creative ideas of contemporary designers, such as the British luxury jewellers Gary Wright and Sheila Teague (wrightandteague.com).

Luxuries that are handmade using only traditional tools and techniques or that involve personal delivery by highly skilled individuals persist in their capacity to command high prices beyond the reach of the general population. Moreover, they might even become rarer as the skills required in their production become increasingly scarce. A prime example would be bespoke shoes; here, the age-old techniques of handmade custom shoe production are central to their luxurious quality. Commanding a price far in excess of factory-made shoes and requiring the consumer to have the patience to wait for the shoes to be made, a process that involves a number of fittings, bespoke shoes are generally the preserve of the wealthy, aside from cases where public healthcare systems may provide free or subsidized handmade shoes to those whose health and mobility is impaired by the lack of availability of suitable footwear. Luxurious bespoke shoes require the preservation of shoemaking knowledge and skills, and they command a high price because of the sheer time and labour involved in their production.

Dimitri Gomez (dimitribottier.com), for example, is a bespoke shoemaker, working out of Crockett & Jones' boutique in Paris. His shoes are constructed entirely by hand and take four to six months to produce – a process that includes measurement and the production of a trial shoe; prices start from €3,000. Of course, this is not to say that creativity does not occur in any aspect of the process by which the shoes are provided. For instance, shoemakers at John Lobb Ltd travel across the globe to meet the needs of their bespoke clients – a service that is advertised on the Lobb website (johnlobbltd.co.uk) and is facilitated by innovations in transportation and communications. Here, the use of the Internet has become necessary as a means of marketing and reaching out to old and new clients alike. However, the fundamental production of the shoes remains the same. Shoemakers must undergo a lengthy period of apprenticeship before they are competent to practice and apply their knowledge to produce luxury footwear for their wealthy customers. Moreover, such craftsmen and craftswomen are not driven by market competition. Rather, they endeavour to practice their skills for the satisfaction of producing a well-crafted good or service.

The examples outlined above indicate that the relationship between luxury and creativity is varied. Indeed, there appears to be a spectrum in relation to the extent to which luxuries depend on creativity. So, for instance, at one end of the spectrum, significant levels of creativity are employed to develop new and more sumptuous and extravagant or technically advanced luxury goods or services. However, at the other end of the spectrum, knowledge remains relatively static with creativity being concerned with customization and the accommodation of client requests within a given and restricted tradition of age-old craft practices. Table 1 provides a typology of luxury goods and services with consideration given to the level and nature of creativity involved in their production as well as to the way knowledge is employed in luxury production and development.

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Table 1. Types of luxury goods and services and their relations to creativity and knowledge

Luxury	Source of Luxury (Beyond High Price)	Level and Nature of Creativity	Predominant Relationship to Knowledge	Examples
Handmade shoes	Bespoke; quality, exclusiveness	Low, based on customization and materials available	Preservation of existing knowledge	Dimitri Bottier, working out of Crocket & Jones' boutique in Paris; John Lobb Ltd., London
Luxury hotels	Quality, customization of service; design of hotel building and tangible facilities; quality location; brand	Low, frontstage maintenance of tradition and quality of customer-client interactions; High, backstage creativity to improve efficiency in service delivery	Frontstage: preservation of existing knowledge Backstage: exploitation of and exploration for knowledge	Claridge's of London; Ritz of London; Le Meurice, Paris
Handbags	Brand; quality of production; design	Low when handmade with high levels of craftsmanship; High in factory production and supply chain to gain quality at relatively high production scales	Preservation of leathercraft working knowledge; Exploitation of and exploration for knowledge	Hermès; Mulberry; Louis Vuitton
Haute couture	Bespoke, with highly creative design and brand recognition	High levels of creativity following the industry determined fashion cycle	Exploitation of and exploration for knowledge; preservation of the skills of métiers d'art	Chanel; Christian Dior; Alexander McQueen
Luxury mobile telephones	Quality of design and craftsmanship; rarity of materials; exclusive services (e.g., concierge)	High in design and development of services	Exploitation of and exploration for knowledge	Black Diamond iPhone 5; Vertu luxury mobile phones
Cars	Brand; bespoke elements; comfort/safety; design; craftsmanship; prestige; speed; embodiment of the latest technological developments	High in design, materials, and technological development	Exploitation of and exploration for knowledge	Rolls-Royce Cars; Bentley; Ferrari; Lamborghini
Space travel	Exclusive	Highly creative; at the forefront of technological developments	Exploitation of and exploration for knowledge	Space Adventures; Virgin Galactic

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Conclusion

This article has revealed the complex relationship between luxury and creativity. Although luxury is often associated with highly creative products and services, from haute couture and luxury cars to exclusive experiences such as space travel, some luxuries are less dependent than others are on high levels of creativity. Indeed, the very attraction of certain luxuries is that they remain unchanged or uncreative. However, even these luxuries are touched by the creativity that has facilitated recent technological changes. The Internet, email, and social media are today mainstream means of communicating with customers and clients. Nonetheless, a core component of certain luxury good or service remains timeless. Moreover, some luxuries require a combination of levels of creativity. So, for instance, luxury hotels may go to great lengths to preserve the traditional forms of customer–client service interaction (frontstage), yet behind the scenes (backstage), they may employ highly sophisticated technology in the form of supply chain management and customer relationship management systems.

The investigation of the relationship between luxury and creativity detailed in this article suggests that managers of luxury businesses need to reflect on the place of creativity in the goods and services that their companies produce and deliver. It is vital that managers identify where preserving existing production and delivery techniques is central to the maintenance of the luxury status of their goods and services. There may be occasions when managers need to avoid change and put resources into ensuring stability. In other instances, change through the introduction of incremental or radical creativity may be vital to ensure the survival of the luxury firm. Importantly, the changes necessary for the realization of creative ideas are not always conducive to the survival of luxury businesses. Knowing when creativity should be embraced and when it should be resisted is vital for the successful management of luxury companies.

What is evident from this examination of the relationship between luxury and creativity is that their interaction is complex. There is great variability in the role of creativity in the production and delivery of luxury goods and services. This is evident in the way that knowledge is employed in the production of luxury. In some cases, where luxuries are dependent on technologically advanced inputs, the boundaries of knowledge are pushed back through exploration. In other cases, luxuries are produced through the exploitation of existing knowledge by its application in new contexts. Yet, as we have shown in this article, in some instances, the production of luxury depends on *preserving* knowledge and the manner of its application. Gaining a deeper appreciation of the nature of creativity of relevance to particular luxuries would be of benefit for those managers engaged in the development and production of luxuries. Where can creativity be introduced without diminishing the luxuriousness of a good or service? And, crucially, where must creativity be eschewed to preserve the core nature of a luxury? To address these questions managers and scholars must recognize the variety that exists among luxury goods and services and they must adopt a more nuanced approach to explorations of luxury and its relationship with creativity.

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The Creativity Canvas: A Business Model for Knowledge and Idea Management

Raouf Naggar

> *"We must cultivate our garden."*
>
> Voltaire (1694–1778)
> In *Candide, or All for the Best*

Innovation depends on ideas generated through creativity and the knowledge and research that make it possible to put ideas to work. However, these two activities are very dependent on the people who perform them. As demonstrated by a pilot project realized at Hydro-Québec's research institute (IREQ), any approach that does not take this understanding into account is doomed to failure. This article proposes that what must be developed is a knowledge and idea management system designed as a coherent ecosystem that takes all controlling factors into account and is based on stakeholder interest and preferences. This ecosystem is the result of a meticulous design of each of the elements that must generally be taken into account in a business model. A business model approach includes not only developing a value proposition for knowledge and idea management that suits the target clientele but also a good understanding of the resources and activities required to deliver this value proposition and especially the ways to finance them. Key to the development of such an ecosystem is the creation of fully functional innovation communities, which are responsible for building up and nurturing their ideas and knowledge assets and getting value out of them.

Introduction

Creativity plays an essential role in the innovation process because it generates the ideas that will initiate innovation. Ideas emerge at every level of the process and they correspond to various challenges, such as responding to an issue, meeting a target objective, solving a problem, making use of knowledge, or understanding a phenomenon. But it is knowledge that makes it possible to put ideas to work and hence to innovate. In addition, knowledge feeds creativity, and ideas stimulate research. Thus, the success of innovation relies largely on these two activities, which are very dependent on people who perform them.

The need to concomitantly manage both knowledge and ideas has been a key innovation management challenge at the Institut de recherche d'Hydro-Québec (IREQ; tinyurl.com/pcodg52), a research institute to support Hydro-Québec, the government-owned public utility that generates, transmits, and distributes electricity throughout the Canadian province of Quebec. IREQ has approximately 500 staff, including scientists, technicians, engineers, and specialists. The Institute's work covers the five following priority fields: i) the smart grid, ii) the aging of materials and long-term viability of facilities, iii) the efficient use of electricity, iv) renewable energy, and v) battery materials and electric transportation. IREQ owes its existence to the success of its innovations and thus to the creativity, knowledge and know-how of its staff as well as to its state-of-the-art installations. Confronted with an energy context in transformation and with major scientific advances, it became essential for IREQ to manage explicitly, not only its innovation projects and its research activities, but also its creativity. This article draws upon projects and research to meet this challenge during the last five years at IREQ, where the author is responsible for strategic innovation and creativity.

Based on a survey of its own staff, managers, and researchers, and a benchmarking with similar companies, IREQ has identified a number of problem areas associated with creativity:

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1. Idea generation is seen as a project proposal exercise.

2. When proposals come from creativity-based activities, the scope is defined and the time allotted is limited – this approach may not lead to the best ideas being generated.

3. When proposals stem from an open call for ideas, only a few of the proposed ideas are used. Because so many ideas are rejected, the motivation to propose new ideas diminishes, and good ideas that are rejected for various reasons end up being lost.

4. When an ideator is busy, they hold on to their idea to retain ownership of it and to ensure that it will not be assigned to other researchers.

5. When searching for options and problem solving during projects, the range of ideas being proposed is limited because the ideas are only coming from the project team.

6. The ideas discovered during a project are not always shared outside the project team.

7. Embryonic ideas do not have an opportunity to develop.

An approach proposed to tackle these problem areas was tested in a pilot project during 2011. Its aim was to recognize creativity as a full-fledged activity that can be performed continuously without necessarily having to be associated with any project. It instituted a storehouse of ideas designed to desynchronize the time when ideas are generated from the time they are used and to favour the sharing of ideas and their development (Naggar, 2010).

The approach used in the pilot project was successful to an extent given that it gathered together many participants within IREQ's staff who supported it, but it also revealed new difficulties (Naggar, 2012):

1. It was assumed that, in stimulating the generation of ideas, the approach would encourage the participants to share the challenges that the teams face in their daily work and identify challenges considered important for the company. However, in mind of the participants, it is management's responsibility to identify the challenges that are important to the company, whereas the scientific challenges are under the responsibility of the teams responsible for projects and do not need to be shared.

2. The process called for ideas and project proposals to be kept in a storehouse of ideas. However, the participants saw no advantage in publishing their proposals in an impersonal storehouse and running the risk of missing opportunities; instead, they would rather pitch their proposals directly to the decision makers. It also appeared that the participants did not consider the effort required for the formulation of the ideas in a long-lasting and shareable format to be worth investing considering that the expected profit is uncertain and long term.

3. The pilot project was designed around informal work, realized in the community around ideas proposed by the participants. But, it appeared that the simple act of proposing the ideas was already difficult because people were already overloaded within the framework of the formal projects. Furthermore, the participants were reluctant to share their ideas (except within their trust network) or to discuss them in public. Also, the motivation for informal work with a widened community seemed difficult to reconcile with the entrepreneurial spirit resulting from a system in which recognition is based on the impact of the realizations.

4. The process called for the numerous ideas identified during the projects to be collected so that they could be reused in other projects. However, participants found it difficult to spend time on this activity because no budget was allocated to it and, usually, projects are rather tight in time and budget.

In summary, there were three main obstacles to any attempt to manage knowledge and ideas:

1. Reluctance to share knowledge and ideas beyond a trust network and to face exposure to criticism and competition

2. Lack of motivation to disclose and share knowledge and ideas when there are other priorities and there is no personal benefit from doing so

3. The additional effort required to share knowledge and ideas beyond the work and the projects to which one is already assigned

In earlier studies (Harvey et al., 2013; Naggar et al., 2014), we examined management paradoxes associated with these difficulties and presented some ways to overcome them.

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The present article, however, addresses the problem using a different approach. It proposes that what must be developed is a knowledge and idea management system designed as a coherent ecosystem that takes all controlling factors into account and is based on stakeholder interest and preferences. It is the set of processes, people, tools, and ways to get organized that we call the "system". And, it is because we want this system to function naturally that we say it is an "ecosystem". Yet, we noticed that a good design of this ecosystem needed to take into account the same elements that, generally, must be taken into account in a business model. In fact, a business model approach includes not only developing a value proposition for knowledge and idea management that suits the target clientele but also a good understanding of the resources and activities required to deliver this value proposition and especially the ways to finance them.

It was following a conference presentation by Yves Pigneur in Montréal in 2013 (Pigneur 2013) – in which he presented the business model canvas he developed with his colleague Alexander Osterwalder at Université de Lausanne (Osterwalder et al., 2010, 2011) – that IREQ started to experiment this approach for strategic innovation project proposals. The interest of this approach was that it systematically considers each of the conditions for the success of a project, especially getting the support of the targeted customers. From this experience emerged the idea that the business model canvas could also apply to the knowledge and idea management system itself, where the targeted customers are the persons involved in the system and thus the stakeholders of the ecosystem we want to create.

Each of the remaining sections of the article corresponds to one or several sections of the canvas. First, we are interested in the profiles and the motivations of the stakeholders, and we present the value that this ecosystem proposes to each of them. Then, we identify the key activities that are essential for the system in order to keep its promises. We are then interested in what will make these activities possible, that is, the resources and the key partners, the type of relationships to be maintained with and between stakeholders, and the channels by which the value will be obtained. Finally, we determine the cost associated with the functioning of the system and the way it could be financed. Figure 1 presents this economic model, which will be explained in greater detail in the sections that follow.

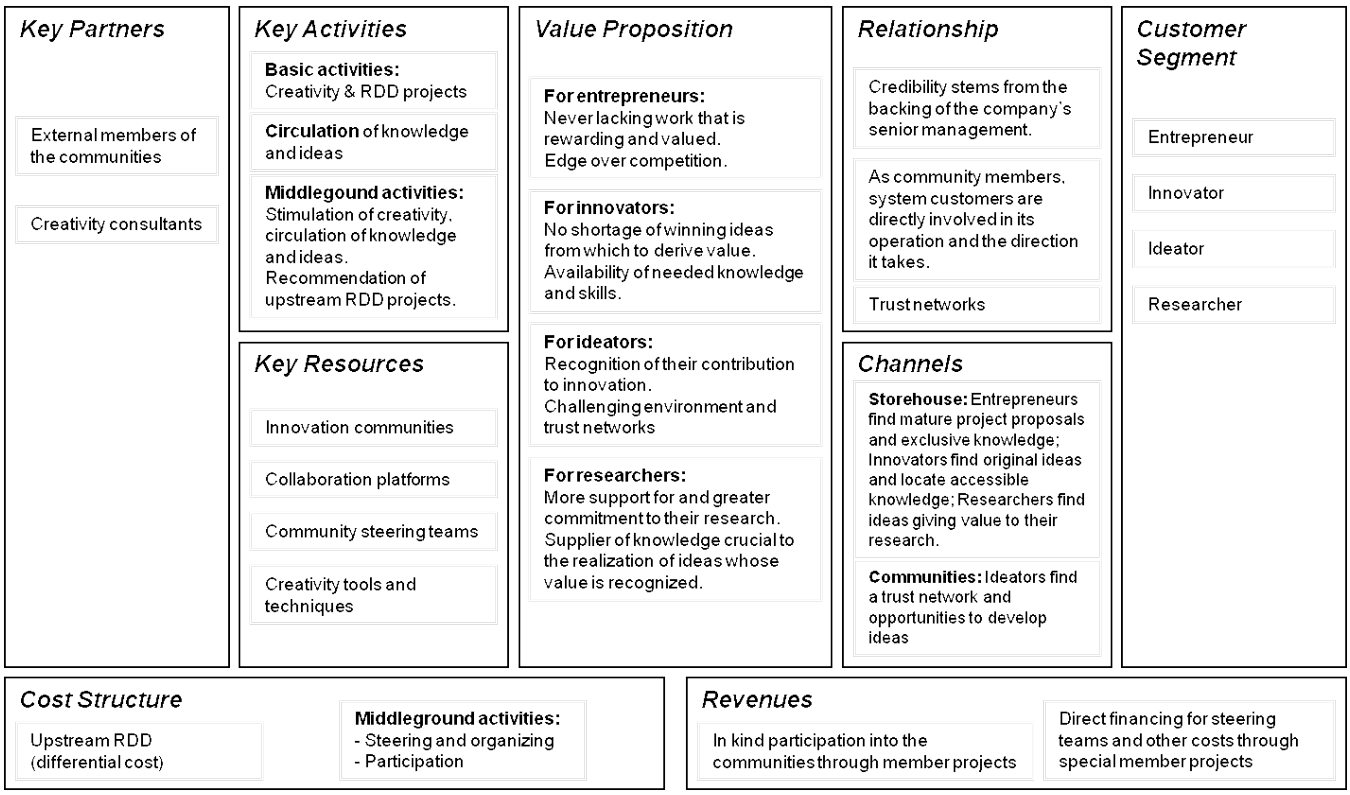

Figure 1. The knowledge and idea management business model, which is based on the business model canvas by Osterwalder and Pigneur (Osterwalder et al., 2010, 2011)

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Customer Segments: Stakeholder Profiles and Motivations

When motivating stakeholders to embrace a technological innovation process, the first thing to do is try to understand what motivates them and what worries them. Each stakeholder, researcher, technician, or manager, can be described by a combination of four typical profiles, which we have illustrated in Figure 2 according to the principles expressed by Sole Parellada (2012) in his works on creativity in small and medium-sized enterprises:

1. The researcher's motivation is the advancement of science and technology by the development of new knowledge. The researcher is worried about the level of support they will receive in their quest.

2. The ideator's motivation is the discovery and creation of opportunities from existing and future knowledge. The ideator is worried about the value granted to their ideas and by the fact that recognition does not go to the person who had the good idea but to the one who has realized it.

3. The innovator's motivation is the creation of value by using knowledge and turning ideas into realities. The innovator is worried about the quality and the relevance of the ideas that are proposed. This profile is typical for a portfolio manager or a project manager.

4. The entrepreneur's motivation is acquisition of projects and the benefits of carrying them out (e.g., success, recognition, compensation.) The entrepreneur is worried about the risk of not having enough projects and of losing precious members of their team during the flat periods. This profile is typical for a business unit manager, a team leader, or a natural leader.

Value Proposition: Benefits for Every Stakeholder

When knowledge and ideas are successfully managed, every stakeholder sees sufficient wins to motivate their active, voluntary participation in the process. Every stakeholder asks: What's in it for me?

1. What's in it for the *entrepreneur*? Never lacking work that is rewarding and valued. Successful idea management means customers are enticed by what is offered and want it to be available. Successful knowledge management gives the entrepreneur an edge over the competition and the skills to carry out their projects.

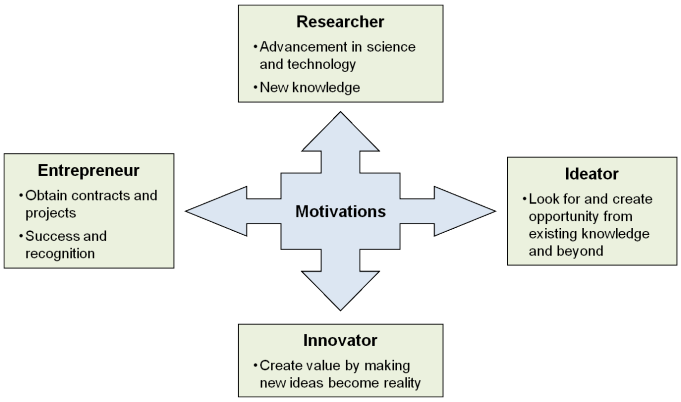

Figure 2. Stakeholder motivations in the ecosystem

2. What's in it for the *innovator*? No shortage of winning ideas from which to derive value plus the certainty that they can become innovations, given that the knowledge required is available and has been mastered.

3. What's in it for the *ideator*? Recognition of their contribution to innovation and an environment rich in new challenges where their ideas can thrive, grow, and develop in trust networks, and where they can find opportunities for their realization.

4. What's in it for the *researcher*? More support and greater commitment for their research, because it is associated with ideas whose value is recognized and because they are the supplier of the knowledge crucial to the realization of these ideas.

Key Activities: Concept-Knowledge Dynamic

Concept-knowledge (C-K) theory was developed at Mines Paris Tech under the direction of Armand Hatchuel (2010), and it teaches us that ideas or concepts (C) are developed by a tree-structured expansion process. One of the main drivers in the generation of new concepts is new or newly remembered knowledge (K). The branch ends of the tree structure of the concept expansion process are, ultimately, the boundaries of what can be conceived. Knowledge, on the other hand, can be represented as an archipelago composed of islands, each corresponding to a field of knowledge that develops separately. By developing knowledge and making

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connections between the knowledge islands, the boundaries of what is conceivable may be pushed back. (Hatchuel, 2010; Le Masson et al., 2014).

As shown in Figure 3, a variety of activities drive the concept-knowledge dynamic suggested by C-K theory. Here, there is a distinction between three main types of activities: i) the informal "underground" activities that are freely realized by the stakeholders without intervention of management; ii) the formal "upperground" activities that are financed and managed by the company; and iii) the facilitating "middleground" activities that are favoured and supported by the management but they aim at stimulating and at directing the informal activities. The activities illustrated in Figure 3 can be summarized as follows:

1. To start, there are the two basic activities of C-K theory: creativity, or the generation of ideas, and research, development, and demonstration (RDD), which consists of developing or acquiring new knowledge.

2. Next, there is the activity essential for connecting creativity and RDD: the *circulation of knowledge and ideas* so that a storehouse of knowledge and ideas can be constituted, shared, used, and developed. This activity also aims at integrating external knowledge and ideas. Nonaka and Takeuchi's four modes of knowledge conversion (socialization, externalization, combination, and internalization) find their place in this activity (Nonaka et al., 1995).

3. Ideas and knowledge acquisition flourish among the various players involved in technological innovation. These players manage their ideas and knowledge themselves, sharing depending on their interests and their passions. To obtain results, however, this *underground* activity needs *middleground activity:* the organization of stimulating events and favourable environments where proximity and diversity are balanced, so people can understand one another yet find their imaginations stimulated and their horizons broadened. *Middleground* activities also bring together the different people who play a role in the path of an idea (Cohendet et al., 2008, 2010).

4. RDD activities are *upperground* activities: they require substantial work and funding. In terms of technological innovation, RDD is downstream of ideas, on the path to the creation of value. With respect to knowledge and idea management, however, RDD is also required upstream of ideas, to assist in idea development, growth, convergence, and renewal. RDD thus also needs *middleground* activities for the selection, development, and acquisition of project financing upstream of technological innovation. Throughout these activities, it is understood that the

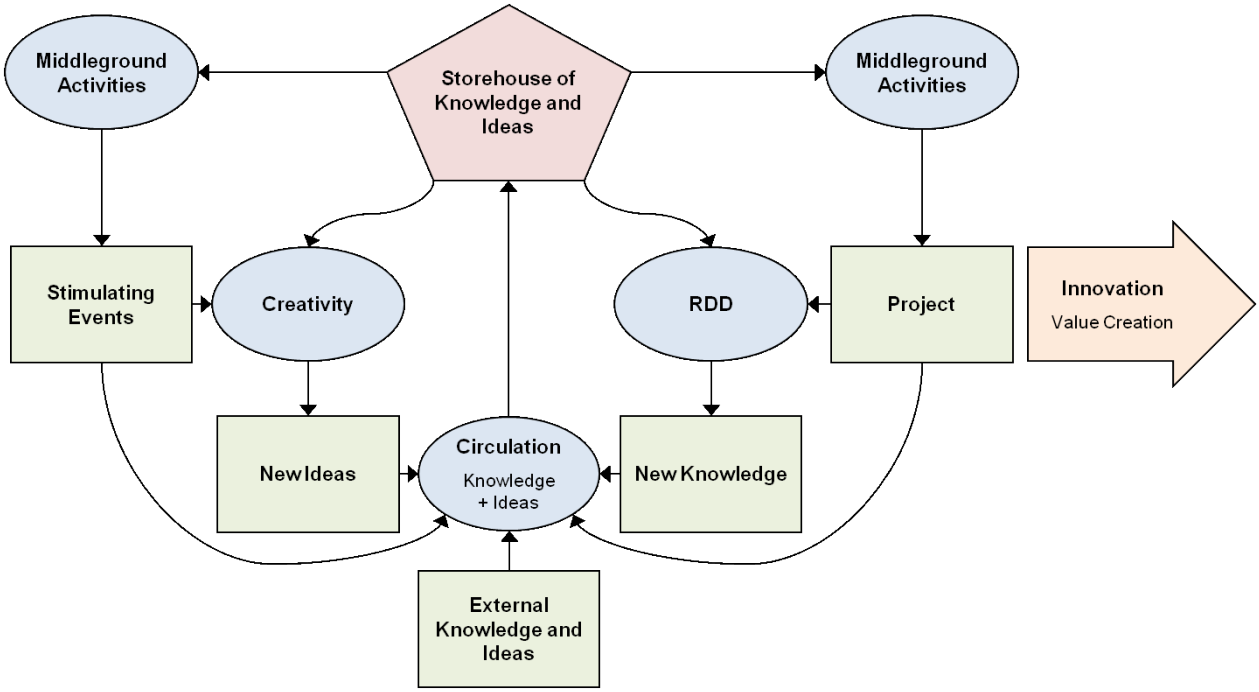

Figure 3. Required activities driving the concept-knowledge dynamic

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purpose of research is to discover and understand; the purpose of development is to model, deduce, and design; and the purpose of demonstration is to convince.

Key Resources, Partners, Relationships, and Channels: The Role of Communities

Key resources
Underground activities require no dedicated resources. Though upperground activities require the complete array of resources that RDD demands, nothing new is required because we are already in a technological innovation context.

Middleground activities to stimulate creativity, disseminate knowledge, and conduct RDD upstream, on the other hand, require new types of resources:

1. A whole set of innovation communities, large and small, specialized and all-embracing, serving as sites for middleground activities and keepers of the storehouse of ideas and knowledge, explicit as well as tacit, distributed among the communities. Community members must see these communities as a trust network, where they are not only willing to share but feel it is in their interest to do so.

2. A collaboration platform where each community has its own space, where the tacit becomes explicit, the precarious becomes permanent, and contributions are traceable. This platform allows and facilitates communication without regard for distance or time, and serves as the support for the storehouse of knowledge and ideas.

3. Community steering teams that keep the communities active. Each community is autonomous in this respect, but collaboration among the steering teams of the different communities is crucial.

4. Creativity tools and techniques for productive exercises within the communities.

Key partners
Besides the research institute's resources, the knowledge and idea management system should include external members within its communities. These members, coming from the scientific community, from the user community, or from the supplier community, shall enrich the sharing by bringing different points of view, new knowledge, and original ideas.

It could also be necessary to invite creativity specialists, because various methods are constantly in elaboration to favour the emergence of the ideas.

Relationships
The communities ensure the relationship between the knowledge and idea management system and stakeholders, that is, the management system's customers. As community members, system customers are directly involved in their community's operation and the direction it takes, making sure it operates in their interest and delivers value to them.

Also of great importance is the credibility of the community, among community members as well as within other communities. This credibility stems from the backing of IREQ's senior management, or outside the context of IREQ, decision makers in general. Such backing is expressed through communication of issues, challenges, and opportunities and responsiveness to the communities' recommendations and proposals.

Finally, the relationships between the stakeholders are solidified within the framework of trust networks, where it is possible to gradually share one's knowledge and ideas, at first in a personal network, then in wider communities. Although this approach may appear to favour secretive actions rather than sharing, our experience is the opposite. This paradox is explained by the interest that stimulates sharing and not the obligation to reveal. This interest will constantly be revived by the middleground activities and will leave to each stakeholder the choice of playing its cards at the convenient moment.

Channels
Channels are the vehicles whereby stakeholders get what they want from knowledge and idea management:

1. Entrepreneur community members find what they want in the part of the storehouse of ideas containing the most mature project proposals, those that have demonstrated their value and credibility and have found customers. Entrepreneurs count on the exclusivity of the knowledge they hold.

2. Innovator community members find what they want in the variety and originality of the ideas in the storehouse, selecting those that can be used to develop innovative projects of great value. Innovators count on the availability of the knowledge required, within and outside the company.

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3. Ideator community members find what they want in the very structure of the communities, a trust network where they can share and develop ideas and a forum for collaboration offering access to developing knowledge and challenges and issues that need solutions. Ideators count on the different opportunities to play their cards and showcase their best ideas so they can obtain RDD investments to develop them.

4. Researcher community members find what they want in the ideas that would never have occurred to them and that give value to their work and their passions. Researchers count on the contributions to the permanent storehouse of knowledge made by current and past peers to find those "eureka moments" essential for the advancement of science.

Cost Structure: Middleground Activities and Upstream RDD Projects

Middleground activities and associated resources are new budget items for IREQ. Upstream RDD projects are not really an additional cost: when not conducted upstream, RDD has to be integrated downstream of innovation projects. It is not the cost that changes but the value of the results obtained.

Revenue Streams: Integration with Existing Processes

In the context of setting up a process for knowledge and idea management, the notion of "revenue streams" must be understood as being the mode of financing of the process, that is the "revenue" that will cover the operating costs of the process.

It is not a question here of asserting profits expected from knowledge and idea management in order to justify a new budget for that purpose. It is rather a question of designing a setup through which financing comes naturally from structures already available, that is the projects, because the success of the process should be the result of contributions by stakeholders.

The final profit will come from the greater value of the realized projects, including higher generated profits, lesser costs, shorter lead times, technology transfers, startups, etc.

Financing of communities
The real challenge is not so much the actual funding of innovation communities but rather overcoming the perception that devoting resources to such communities compromises technological innovation activities. It can be difficult to explain that diverting time to community activities actually increases efficiency; some may expect the opposite. One way of overcoming this seeming contradiction is to build real collaboration between projects and innovation communities, as shown in Figure 4.

Projects have approved mandates and correspond to innovation strategies. Projects are carried out by a team and must produce deliverables. Communities bring together members with a common interest, offering a place to share ideas and visions and engage in scientific intelligence activities. To ensure that community activities do not encroach on activities that must be conducted in project mode, the work performed in the community must be an efficiency and quality vector in carrying out projects and developing innovation strategies. This happens by building on creativity and knowledge dissemination/capitalization activities.

However, to ensure this works as it should, the area of interest that the community shares with certain projects must be recognized. Projects should thus be asked to join the community and to contribute to it, helping to move it in a direction that serves project interests and develops vision in the field. Through a project's membership in the community, project team members are authorized to contribute in kind as community members. This type of collaboration ensures that community activities are relevant and that time devoted to them is funded through member projects.

Such indirect funding also preserves the independence of the communities, which have no mandate and no deliverables, only a shared passion and interest, because direct funding would mean the communities would be accountable to their funders. This independence contributes to the creativity and motivation of the communities.

Note that, to promote openness and diversity, a community must integrate members from outside IREQ as well as members working on internal projects.

Upstream RDD funding
Plans for the financing of innovation often include funding of upstream RDD. These budgets, however, are usually for research in new fields, not for synergy with creativity in existing fields.

It is thus important to convince planners that rearranging the total innovation budget to devote some funds to upstream RDD will mean not only better innovations

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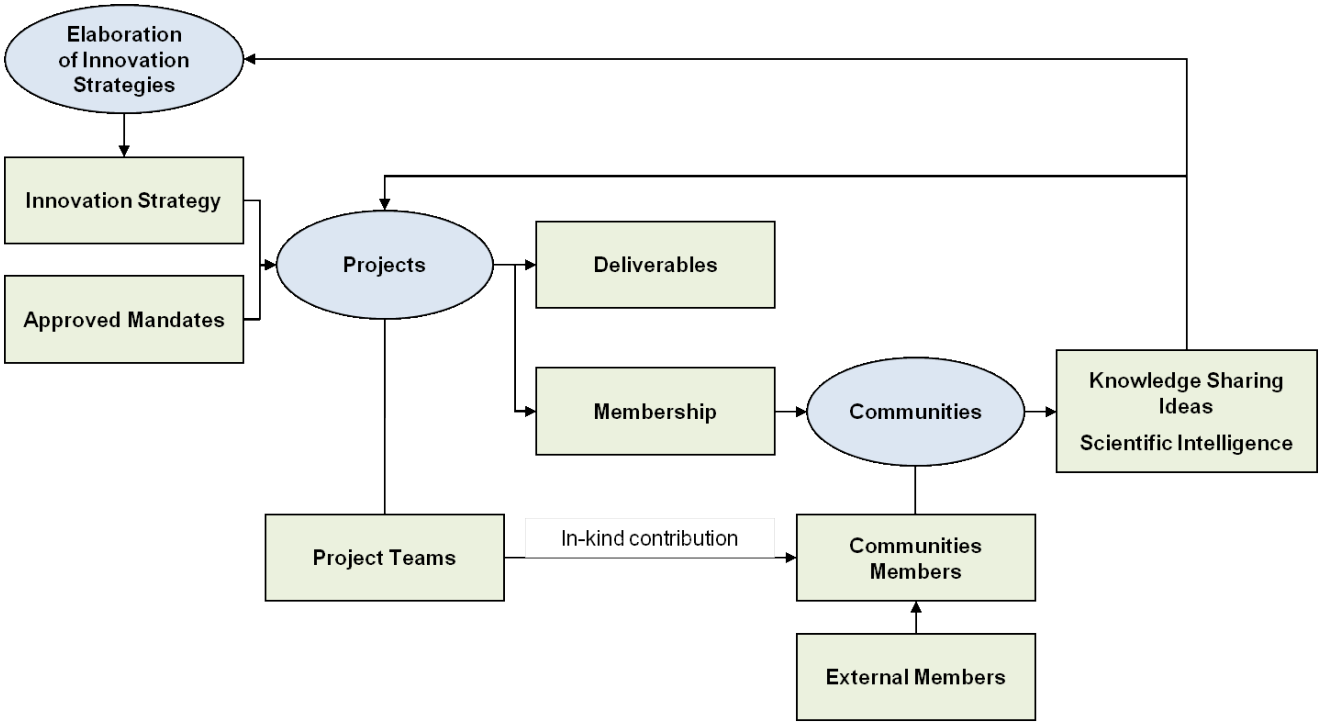

Figure 4. Collaboration between communities and projects

but faster and more efficient innovation development. In other words, such budget reconfigurations could mean a better outcome for zero or perhaps even negative cost. This assertion, however, remains to be demonstrated.

Conclusion

This article suggests that a coherent ecosystem be developed that takes all controlling factors into account and is based on stakeholder interest and preferences. Key to the development of such an ecosystem is the creation of fully functional innovation communities responsible for "cultivating their gardens", that is, building up and nurturing their ideas and knowledge assets, and deriving value out of the ecosystem. This approach makes it possible to overcome the obstacles identified through IREQ's experiences: reluctance, motivation, and effort. To minimize the required effort, knowledge and ideas may remain tacit, codified only as needed. To recognize and support the effort required, a way of funding participation in communities through ongoing projects is proposed. To motivate stakeholders, the "what's in it for me" is clearly established, and participation is voluntary and geared to topics of importance to participants. Last, to reduce reluctance to participate, a method of disclosure that respects trust networks and contribution traceability is proposed, as is the organization of events providing opportunities to benefit from knowledge and idea sharing.

The business model canvas elaborated in this article summarizes the ecosystem business model proposed for managing knowledge and ideas for technological innovation at IREQ. This model takes into account all factors crucial to the success or failure of such management and provides a coherent picture of solutions developed to handle difficulties encountered by the research institute. It is hoped, however, that the underlying general model can be applied by others to overcome broader problems where creativity plays an essential role but must be reinforced with the knowledge and research that are required to turn ideas into innovations.

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Raouf Naggar is Head of Strategic Development at Hydro-Québec's Research Institute (IREQ), where he is responsible for strategic innovation and creativity. During his career at Hydro-Québec, he has worked as engineer and as researcher in various fields such as: generation and transmission systems planning, power systems reliability, customer service, energy efficiency, system analysis and management, as well as knowledge engineering. He is presently responsible for the institute's Strategic Innovation Projects Portfolio, where upstream RDD is performed. He is also in charge of introducing idea management in the organization. Through this role at IREQ, he became an active participant in Mosaic , the Creativity and Innovation Hub at HEC Montréal.

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Version Française

A version of this article is also available in French:

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Setting the Stage for Collaborative Creative Leadership at Cirque du Soleil

Laurent Simon

> *"A good juggler improving his skills, will juggle with more balls. An excellent juggler will juggle with balls of many different sizes and shapes."*
>
> Boris Verkhovsky
> Director of Acrobatics and Coaching, Cirque du Soleil

Debates about the nature of leadership for creativity have been ongoing since the 1950s. But, despite the central role leadership plays in the management of creative processes, few contributions highlight the actual practice of leadership for collaborative creative ventures. This interview with the Director of Acrobatics and Coaching at Cirque du Soleil addresses the reflexive experience of a creative leader faced with the challenges of integrating multiple expertises around complex, technological, human, and poly-sensorial creative performances. In this context, leadership for collaborative creativity appears as a constant and dynamic balancing act between people, ideas, deliverables, and the position and personality of the leader.

Introduction

Cirque du Soleil, the Canadian live entertainment powerhouse, represents an extreme case of the strategic capability to exploit creativity. Founded 30 years ago in the Province of Québec, Canada, Cirque started as a street show in 1984. Through a memorable series of shows in the nineties, which literally acted as a manifesto – with, for instance, "Le cirque réinventé" (We Reinvent the Circus) – Cirque du Soleil disrupted and reinvented the circus arts. It has been tremendously successful, and widely followed and imitated. Cirque ended up as multidimensional international creative business with 8 shows in Las Vegas, and 10 shows on tour all over the planet, and many developing franchises in media, cruises, resorts, and even restaurants. Renowned as a unique success in the entertainment industry, with a brand amongst the most admired and respected, Cirque du Soleil has always been strongly focused on the expression and demonstration of exceptional, individual and collective human physical performance. For the last 20 years, Boris Verkhovsky, Director of Acrobatics and Coaching at Cirque, and former coach of elite athletes in sport acrobatics in Russia and Canada, contributed to the creation and development of most original physical performance acts at Cirque.

The interview with Boris Verkhovsky that forms the basis of this article was "performed" at Cirque du Soleil headquarters in Montréal, Canada on May 15, 2015. For the last 20 years, Cirque du Soleil has been described in research as a multi-dimensional creative powerhouse. It has been epitomized as an example of the so-called blue ocean strategy of business model disruption for new market creation in Kim and Mauborgne (2005). Its specific creative culture has been described and analyzed from the inside as inspired by strong leadership, enlightened story-telling, and collective engagement in creative endeavours (Baghai & Quigley, 2011; Ghazzawi et al., 2014; Heward & Bacon, 2006; Mahy, 2008a, 2008b; Saldaña Rosas, 2009). Cirque also appears in several research papers discussing strategic partnerships (Casadesus-Masanell & Aucoin, 2009), creative processes (Aaker & Joyce, 2013; Martin, 2009;), human resources and talent management (Massé & Paris, 2013; Petiot, 2014), as well as its role in urban development and the creative city (Cohendet et al., 2010). Still, the repeated success of Cirque du Soleil retains an element of mystery, and it

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remains challenging to grasp where its differentiation comes from. In this article, we attempt to lift a corner of the veil by discussing the role of leadership at the level of new project development and by analyzing its implementation in day-to-day practice between one experienced manager and the employees and creators involved in creative endeavours.

Interview and Commentary

In the realm of Cirque du Soleil, a show is made of a succession of acts contributing to the unfolding of a storyline inviting the audience into a unique and inspiring imaginary world. Viewed from the inside, an act is composed of a physical performance, performed by athlete-acrobats, a material setting with sometimes highly sophisticated technical devices, and choreography that instills aesthetic power and beauty to the movements of the performers. Original costumes and decors, along with live music and chant complete the poly-sensorial dimensions of the experience and contribute to its uniqueness.

With music, singing, and dancing, circus arts are likely to be among the oldest performing arts in human history. Representations of the staging of physical performance for entertainment purpose, often enhanced by technical apparatus, can be traced back to 5000 B.C. China, Egypt, Ancient Greece, and the Roman Empire. In one form or another, circus arts extended in history all over the world and throughout all cultures. Innovating in this field, with such strong traditions, appears as a major challenge.

Designing a novel, entertaining, unique acrobatic performance means engaging in a complex process, mobilizing varied expertise, deep and diverse experiences, trials and errors, learning in action, and reflexivity. It has to be a collective and collaborative process, and it requires the implementation of sophisticated leadership practices.

Throughout its history, Cirque has proven to be very efficient in attracting the best talent and expertise in the relevant fields of circus arts, but also "mise en scène", stage design, decor, composition, lighting, and the like. This attraction fed a pipeline of almost 30 years of continuously disruptive creativity, innovation, and success. However, such success is not achieved without overcoming challenges, many of which originate from the outside of the organization. "When high expertise mixes with repeated success, the risk is to be sometimes too self-focused", states Boris. "At some point, you start to believe that you are the principal, if not unique initiator of creative ideas in your field."

Creative processes at Cirque are essentially formatted as an idea funnel, starting from an artistic vision and the intention to bring forth creative story-telling. Led by a creative director, this first intention has to be translated into a sequence of acrobatic acts, staging sometimes extreme physical performances, which are enhanced by dynamic choreographies, costumes, makeup, music, and chant. The process is complex, mixing a wide array of expert views, experiences, and aesthetic sensibilities. The outputs are largely uncertain and require constant translation from one field of knowledge to another, multiple interactions, and sophisticated debates. In this process, creation is by essence co-creation and requires a lot of maturity in terms of leadership and management practice.

"For thirty years, with repeated successes, we have been in the business of "wow!" That's a very important reality of what we do, and it impacts management. Because there are so many elements, each one should be at the level of 'wow', but the magic is when they collectively become 'wow'! In this regards, collaboration – and openness – is not an option. (…). When you come to the table for creation, an idea that's worthy, perhaps not in its full form, but as an initiator, a stepping stone in the creative process, can come from anybody. It can come from a costume designer, and yet it can transform into a performance opportunity. It can come from a composer or a 'metteur en scène'. We learned to respect it, to appreciate, and to be open enough to it."

Ideas are subtle artefacts, originating from half-conscious insights, fed by intuition, embedded previous experience, context sensitivity, and interpretation. Viewed as unfolding cognitive processes, ideas are at first vulnerable. They need to be acknowledged, nurtured, enriched, explained, translated, and equipped with a codebook, before being validated and legitimated. Respecting ideas, wherever they come from, and their progressive consolidation appears as a complex collective process to be led with extreme caution and subtle diplomacy.

"First of all, I think it comes from accepting people for who they are, and that means accepting mistakes. Our story taught us humbleness. Humbleness came with volumes of experience and repetition of the mandates, and realizing that you don't have a secret re-

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cipe for creation. You realize at some point in time that if you're to compete against the world, you're going to lose. But we work with very intelligent people…"

Yet, even smart people need guidance, validation, approval, and reinforcement. The team leader acts consistently as a sense-maker, stating, wording, and revealing the essence and focus of the moment of collective action.

"If we live a collaborative moment, I would verbalize it: You were brilliant, taking that idea and bringing it to this achievement… If you capitalize on an example right away, you build an atmosphere where collaborative learning is possible. I deal with highly intelligent people and intelligence could lean towards arrogance sometimes… They're good at what they are and they got there in part because they're assertive, self-confident, and sometimes arrogant. If you go directly against someone, then you're in a fight. If you finger-point too directly at mistakes, you're antagonizing your counterpart. In the world of elite sports, the coach is always right; the performer is always wrong when there is a mistake. That is a horrible attitude. In that sense, I tried to make a difference, as a coach, by sharing in mistakes – that is humility. And I use that background and that experience in the way I work with the team. "

In creative developments, mistakes and failures are part of the process. Harnessing a "failing forward" culture asks for a constant "maintenance" of genuine and open communication in the team. It has to be managed by example, based on empathy, respect, and self-awareness.

"I try to bring humbleness in our people when somebody criticizes a concept, of a costume, for instance. I will accept it. I will go into it. But I will shift gradually to the point of 'does it really impact us in a negative way or is it just a personal opinion?' And, when it comes to personal opinion how different is it from that of a professional. (…). Am I really in a position to offer expert opinion on costumes, or music, or makeup? It is a mix of entitlement and expertise… so humbleness is remembering how you would react and feel when somebody criticizes your work, without the basic understanding of it. This gives results, brings more collaboration, for sure. Because, then I will ask candid questions, use an opportunity to learn from you and to influence you, rather than simply pose the judgement on what you do."

The way the leader plays their role when faced with failure appears defining in fostering collective learning and reinforcing a generative dialog between team members.

"If I bring the focus on a failure, I always use myself as a part of the equation. And what I try to do – and I've been criticized for this – I very intentionally avoid the words "my team, my department…". I use the words 'our team, our department'… but when it comes to the error, I would definitely use 'I', like in 'I'm part of the problem, I didn't seen it coming. I failed to deliver on my membership in that team.' (…) That full notion of membership in a team, we put a fair amount of effort into discussing that. As a manager, I'm not with you on the floor, but I'm a member of your team. I have a role to contribute to the project as a member of the team, but just like in hockey, the goalie doesn't chase the puck. That's not his role. You expect him to focus on his role, and yet he is a member of the team, and a critical one! As the manager of my team, most of my role is focused on setting up the conditions for collaboration, in order to collectively generate, evaluate, enrich, and validate ideas."

The collective dynamics are constantly challenged, and there is a risk of irreconcilable divergence. Collaboration must be managed as the essential background of the creative process.

"What could foster collaboration? I have to be very cautious in answering, in order not to oversimplify it, but I would say 'Time'. Time together. For instance, when you say you spend 'quality time' with your kids, it's a fantastic excuse for not being available. No! Quality time implies time in duration. Because, when you schedule the time, it becomes nothing but efficiency, but when you deal with creativity, and when you deal with a human relationship there is melting and molding, and that takes time, and it's very difficult to schedule. I understand that in engineering and technological innovation you schedule the rhythm of activity, because you force it! In our area, it doesn't work like that."

But, the schedule still exerts pressure, and deliverables are expected on time. Reconciling the hierarchical demands and administrative constraints with these "open time sanctuaries" appears as a constant trade-off.

"The best way that it can work for me, is that I have really played on both sides of the fence, managing projects from the inside, and applying pressure on projects as an external manager. I have said 'no!' so many times to requests for extra time, and I have explained why. That gave me a lot more credibility later when I came and said 'I need more time'. We just delivered a project. We did it in a horribly compressed period of time, but we did it quite well. And we were ready to cel-

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ebrate and I said to anybody: 'don't' rush to celebrate. Let's just wait. We just delivered.' And… here comes the critics! 'Well, you know, acrobatically I wished it would be a bit more.' When we delivered I knew the critics would come… and my answer was: when you remove all the time to breathe, and you pack the remaining time with so many tasks, there's zero room for development. As a matter of fact, we're so lucky that we were able to sustain the level we delivered. That realization, that assessment of what it takes to generate genuine creative content is not common in most companies, because you can't measure it. As a result, it is always easier to lean more on logistics and finances as the means of determining the time needed, but it is actually very risky when you're expecting the 'wow!' on every factor including the feeling of the story, the feeling of the experience, and smooth travel transitions throughout the show…"

In order to answer to pressure at the level of excellence that is expected by the public, management, the artists, and developers themselves, Boris Verkhovsky insists on the importance of collective engagement and solidarity in the project team as well as on stage.

"In our case, we play on the 'major' and the 'minor'. In the major, you're under the spotlight, performing at the front of the stage, very visible. In the minor, you're in the back, on the side, somehow in the shadows. I used to do things like filming an acrobat when he's in the minor. I film him in a close-up and show them afterwards. It's terrible, because they're thinking they're in a shady part of the stage. Yes, but still, probably 200 people are still looking at you at his very moment, so… picking your nose or not paying attention is really not an option! In the truthfulness of that, when you're in the minor, you're still on stage. It is the same during the development phases with the project team. The difficulty of major and minor and shifting from and to is definitely complicated with the group of people that we work with, in part because of personalities. In artistic and creative milieu, some people are so dynamic in their personality that their mode of operation is 'loud'. It's not a relay switch they can ramp up part-time. It's on or off. It's really tough, because partnership and co-work, co-ideation, co-creation is more about dialog. It's really tough on other people because the loud ones don't listen. That factor is a tough one for me, because it leans heavily on personality. What can I do with personalities? It has to go through dialog, time, and respect. I wouldn't impose a decision, sometimes even if the team was asking me to. I negotiate: 'You be who you are, but this is where I am in the process. Can you please, in the next session, help me in my quest? After that, you be how you want to be.' Sometimes I play that game."

If team diversity is clearly an asset in terms of creative potential and enriching ideas with multiple perspectives and worldviews, it is also a major challenge for managers, who have to acknowledge unique personalities at every moment of the collaborative process.

"With the team, whenever you deal with more than two individuals, the sophistication of their thought and their background and philosophy make it a complex process. They're so different. It's normal. They're humans. I don't think you can have a formal model. One size doesn't fit all! It's not possible. (…). When you're coming out of elite coaching, effectively a very, very good coach has their methodology, and the students adjust. A master coach, will adjust the methodology. I think, in managing, when you're getting better at what you do, when you're really close to mastering that, you give yourself the freedom of adjusting the methodology with which you operate."

Adapting to individual personalities is a challenge, but managers must also consider background, expertise, experience, and legitimacy. Finding the right relative position requires a constant balancing act.

"I'm managing two teams of professionals as operational and functional supervisor, and a third one comes in just for creation: the choreography designers. With one group, I have a completely different professional package because I'm one of them. With the performance designers, I'm one of them. With equipment designers, I'm not at all. With choreography designers, I'm not. I understand it, but I'm not a choreographer, nor an equipment designer. And that's a tough challenge, because I have to use a completely different approach. There are times I'm questioning if my management of the group where I'm an expert is relevant because I'm too cautious to be too different from the others. The bases for interaction in one case are established on sharing the expertise, and in another case, not at all! With equipment and choreography, I have experience in managing them, but not experience in actually doing and fully, deeply understanding what they do. So from that perspective, it's a challenge – a major challenge. I think, in the method of their interactive contribution with the others, I would be asking them to be more cautious and smarter in what information they give me; to what degree of the detail they need to go into. Because, I can easily get overwhelmed with details in a field I'm not an expert in."

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Setting the stage for collaboration means switching the focus between the individuals and the progress of the deliverables. Here, the manager aims at gathering pieces of knowledge and integrating them in the wider perspective of the project.

"In any interaction, as a manager, I would specify and re-specify what I need to know, and be very focused about it. I have to be crystal clear if I'm interested in the deliverable, in the schedule, or in some more specific details. Or I would say: on a scale of one hundred percent, do you feel that you've achieved this percent or that percent? Or I need only a bird's eye view, because I only need this or that… I would fluctuate from very concise, very pointed meetings, taking very few, very short notes, to give the notion of formality. I need those. Individuals need that. But then I would move away from it and we would go to a completely different format of a comfortable chair, a cup of coffee, and talk. It's a very critical need to fluctuate, between that format, and the setting, because it will give you very critical indications. You will be learning a lot more, and be able to influence a lot more. You restrict yourself to what is at stake there… I need to insist on the moments of formal validation, and the guys are going to feel constrained to it, but the guys would never miss a session of talk. I need to balance both."

Beyond the continuous adjustment of individuals' involvement and collective dialog on expertise, the most demanding challenge is to extend collaboration to the validation of progress made and deliverables.

"First, I would trust my own judgement, and manage the degree of my exposure. I learned that from theatre managers. I'm allowing myself to not watch the show every night, because then I will not really see it. I need to keep the freshness in order to see. But then, I would supplement it by the notion of peer review. What I would do is, if I feel that I'm over exposed to the project, at the risk of not seeing things anymore, because the eye gets used to it and accept it as a norm, then my critical judgment is perhaps reduced. Then I would not call a big event. Because events are disruptive to the process. They're imposing. So I will protect the process over that event, but I would bring in somebody, an experienced manager, a senior head coach, in order for me to see through their eyes... and we would talk through it."

In order to communicate and follow up with top management, the process needs to be formatted through a classical staging and gating approach. In this generic format, the leader uses gates as opportunities to focus on specific needs to be answered, and precise features to be evaluated and validated.

"I would use that notion of the gates and of course, every so often, I would formalize the gate. But, every time that we formalize the gate, if I have an opportunity, I manipulate what is my objective. It's not always the same. Sometimes it would be: it's an event, for the benefit of my boss. Sometimes that's what it is. And it's ok, if he's getting edgy, nervous, and in need to feel the project more. That's the objective, and I would be very clear. I would tell the guys, don't overdo it, it's not about you, it's for him, because when he speaks about the project, at top management or marketing level, he needs to have that kind of understanding. Sometimes I will prepare my partner who is going to do the peer review and say: 'Hey, please don't be judgmental because, all I want is just to stress for the team that they should focus on the performance with the presence of a first audience.' I use those extreme examples, but there are many in between. Those gates, they are quite specific and there is a range of objectives in them."

In terms of collaboration, a major, well-acknowledged risk is for the process to take over the content. The manager insist on fostering individual and collective reflexivity at the gate.

"You stage the gate with people above you, people that are parallel to you, and people that are below you. You need to do that. If you don't, it becomes pretentious, it causes frustrations, misunderstandings. We had to learn. So when I bring my VP, if I don't discuss with him well enough how I want it to go and what I'm expecting out of this gate, I'm at huge risk, because he would then start expressing an opinion: 'Why wouldn't you do that? Let's do that!' I would want to say: I'm not even interested in that, that's not an option, because that's not where we are now… but do I turn around and say that to my boss, in front of the others? That's out of the question. That means I failed at preparing that moment, and the staging of that. If I don't tie it to my objective, either I don't have the right objective, or I'm a really bad manager."

The need to define objectives extends further from the manager, to everyone involved in the project. "Run-throughs" are used as gates. They act as specific opportunities to refocus on individual and collective objectives, and to put them to the test of performance. Approaching the date of the premiere, the manager would invite a test audience of experienced peers, and even sometimes family members of the performers. It

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raises the level of awareness of the performers, and brings them back to the intention of each individual. But the actual audience remains the acid test, and the ultimate goal.

"From that standpoint to me, it's being self-critical, individually and collectively. The presence of the audience enhances self-awareness and reflexivity. Do they see what we're hoping they would see? We're learning from them, what they see, how they react, and from what that we didn't even see. That's why with the "run-throughs" audience, we try to be cautious and strategic, very focused. We focus on the technical performance and the objectives of the performers. The individual intention has to fit in the moment of the performance – the precision and unique beauty of a gesture, in harmony with music, the decor, and other performers. The intention is to fit in the show, to perform, and to flow. But with the actual audience, it has a bigger goal: the artistic intention. When I say artistic, that is realizing that we're entertainers. We finally gather on this ultimate goal, of entertaining and inspiring people. When it works – if it works – we all know it. That's the greatest reward. It brings us back together, comforts us, reinforces us, and energizes us. We need that, because collective creation is an extremely laborious process".

Conclusion

From a manager's point of view, the organization of collective creativity and its channelling into collaborative performance remains a constant challenge. The direct account of Boris Verkhovsky's experience in managing new venture development at Cirque du Soleil allows us to see "through the looking glass" and draw some significant learning about the actual practice of leadership for creative collaboration.

First, creativity is not the exclusive privilege of some unique, talented, and well-identified creator. Ideas can come from many different stakeholders in the creative endeavour. One of the key roles of the leader is then to favour the expression of creative ideas by setting up a context of openness and respect, but also to sponsor and conduct discussions and debates about the creative and performing value of ideas. While doing so, the leader is also looking for the mobilization of diverse types of expertise in the evaluation of idea, and in complementing the idea with specific operational expertise. This challenge requires a complex balance of humbleness and authority. Humbleness plays an important role in being able to express and share half-baked insights, to play with them collectively in order to consolidate them, make them evolve, or discard them. Managing humbleness also means focusing on the attitude of people, being a role model in terms of listening and respectfully challenging an idea without invalidating the person expressing it. This learning stance, and the promotion of it, allows a team to play with ideas collectively, sometimes failing, making mistakes, and then rebounding from them and progressing.

Second, in this collective dynamic, the experienced leader will aim at setting the right conditions for creative expression and debates, by protecting quality time, and also by valuing solidarity in the team. Debates are worthwhile only if they are focused on the collective endeavour and are based on individual demonstrated expertise and experience rather than mere personal opinions or managerial authority. In order to keep this dynamic, the leader will constantly assess and very carefully manage their own position: mobilizing authority only when legitimized by expertise and experience, candidly requesting explanation and clarification when not in a knowledgeable position, fostering debate, and looking for external advice in case of ambiguity.

Third, in the formal staging-and-gating process, the leader will often tone down their direct authority on the content of the project and look for the validation of some features with specific stakeholders. In order to do so, a fair amount of effort is dedicated to the "staging" of the formal and informal gates. This means setting up a context for the demonstration of a feature, its collective and open discussion by carefully casted experts with the performers, and a fair evaluation of its value for the show. This practice aims at constantly enhancing self and collective awareness and reflexivity, and regularly reasserting the collective purpose: the entertainment of the audience, in this case.

Boris Vekhovsky's account of his experience at Cirque du Soleil in managing creative collaborative endeavours is consistent with the literature on creative contexts: it is based a strong and clear vision and purpose, on the integration of a diversity of expertise and experience, collective learning through trials and errors, and a playful and respectful team culture (Amabile, 1998). It also resonates with advanced leadership practice in creative project management, as fed by sense-making and purpose, connecting people for knowledge sharing and learning, defining and setting up the right playground in terms of freedom as well as constraints, and coaching the individuals and the team in their search for a

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common flow (Csikszentmihalyi, 1997; Simon, 2006). Finally, addressing one of the major issues for contemporary organizations – the transformation of a diversified collective of creative people into a performing creative collective (Hargadon & Bechky, 2006) – it clarifies the expression of leadership for collaborative creativity in practice, as a constant position game, strategizing expertise, authority, and participation and accelerating the exploration and validation of new ideas by fostering individual and collective reflexivity.

About the Author

Laurent Simon is an Associate Professor in the Department of Entrepreneurship and Innovation at the HEC Montréal business school in Montreal, Canada, where he is also the Co-Director of Mosaic, the Creativity & Innovation Hub. His current research focuses on characterizing the management of techno-creative projects and the study of creative environments and practices, the management of creative projects, creative communities, "creative cities", and the determinants of creativity in innovation management.

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