Creativity and Innovation: The Evaluation of Leadership

Rekha Kadam

Shriumiya Kanya Mahavidhyalaya, Rangwasa (Rau) E-mail: rekhakkadam111@gmail.com

Abstract—In today's innovation-driven economy, understanding how to generate great ideas has become an urgent managerial priority. In this article, the author present highlights of the research presented and the discussion of its implications. At the event, a new leadership agenda began to take shape, one rooted in the awareness that you can't manage creativity - you can only manage for creativity. The first priority of leadership is to engage the right people, at the right times, to the right degree in creative work. That engagement starts when the leader recasts the role of employees. Rather than simply roll up their sleeves and execute top-down strategy, employees must contribute imagination. Managers add unique value to building the leadership pipeline beyond that of management development specialists, consultants, academics, or other professionals

The purpose of this paper is to examine the role of leaders' creativity as a predictor of organizational creativity. The authors expected that creative leaders would promote creativity directly by functioning as a model and inspiration for their followers and indirectly by promoting a creativity-supporting work climate.

This paper explores the important role of leadership in the innovation process of organizations. It argues that while culture, strategy, technology, and other management tools are important in generating effectiveness in the 21st century, creativity and innovation are what drive organizational success in many sectors. However, for creativity to take place, leaders must actively implement strategies that encourage it. Therefore, leadership is the catalyst and source of organizational creativity and innovation. In essence, for organizations to be able to achieve constant innovation, leaders must establish an environment conducive to renewal and build organizational creativity also depends on how leaders encourage and manage diversity in the organization, as well as develop an effective leadership structure that sustains the innovation process.

Keywords: Creativity, Leadership, Managerial Roles, Transformational Leadership, Innovation Process, Knowledge sharing.

1. INTRODUCTION

In today's fast moving and complex global environment, the ability to innovate and deploy faster and more profitably than competitors is now a requisite for growth and success. For companies that are founded on new products, such as Apple, the focus on innovation creativity has always been a fundamental part of the culture. For many companies, the move to dynamic-innovation is more difficult for many reasons which include a diverse customer base, a complex mix of products and services, a focus on minimizing risks and a traditional static-control culture. The burst of focus in the last decade has focused on innovation & creativity processes, such as the Stage-Gate, and on the CEO's role in setting a strategic vision and creating organizational structures and processes that unleash creativity, risk-taking, and collaboration throughout the organizational culture. Very little has been written on *Innovation Leaders*, those individuals who lead a new product or service through ideation, design, development, market launch and implementation. These Innovation Leaders will be the catalyst for change by bringing diverse parts of the organization together to launch new products and services.

Our research focuses on the Innovation &creative Leader, specifically:

- What are the distinguishing characteristics or capabilities of a successful Innovation& creative Leader?
- What practices do Innovation& Creativity Leaders follow to enhance their success and conversely, what practices tend to detract from the success of these leaders?
- What organizational practices support and detract from successful innovation and creativity?
- How to select and develop individuals who will be successful?

Drucker (1985) argued that innovation is the tool of entrepreneurship. In addition, both innovation and entrepreneurship demand creativity. Creativity is a process by which a symbolic domain in the culture is changed. New songs, new ideas, new machines are what creativity is about Mihaly(1997). Creativity is the ability to make or otherwise bring into existences something new, whether a new solution to a problem, a new method or device, or a new artistic object or form. Wyckoff (1991) defines creativity as new and useful. Creativity is the act of seeing things that everyone around us sees while making connections that no one else has made. Creativity is moving from the known to the unknown. Culture exerts a negative force on creativity according to Pearce (1974), however, "were it not for creativity, culture itself would not be created." No entrepreneur or enterprise, however successful and big, can continue to hold a place of leadership unless it recognizes that modern business operates in a world of galloping change which creates new problems, risk and opportunities and for which they have to mobilize the enterprise's resources before changes make their impact felt. To do successfully, the entrepreneur and enterprise should know where this firm is going and how the firm will get there. This is turn requires a clear definition of the company's business which will enable it to continually adopt operations to the realities of the market place, 'the very corner stone of survival and growth"

Innovation is defined as adding something new to an existing product or process.

The key words are adding and existing. The product or process has already been created from scratch and has worked reasonably well. When it is changed so that it works better or fulfils a different need, then there is innovation on what already exists. Innovation & creativity is the successful exploitation of new ideas.

All innovation & creativity begins with creative ideas. C creativity is the starting point for innovation. Creativity is however necessary but not sufficient condition for innovation. Innovation is the implantation of creative inspiration.

2. CREATIVITY AND INNOVATION IN AN ENTREPRENEURIAL ORGANIZATION

Growth and development cannot be sustained without additional innovations (usually in the product or services or in its marketing) with additional innovations, firms become "glamorous" Introducing new products is usually seen as part of the process of innovation, which is itself seen as the engine driving continued growth and development.

The "winning performance" of the entrepreneur and the organization focuses on.

- Competing on quality not prices:
- Domination of a market niche;
- Competing in an area of strength
- Having tight financial, and operating controls:
- Frequent product or service innovation (particularly important in manufacturing).

Porter (1985) argues that, while successful businesses will each employ their own strategy, they achieve completive advantage through acts of innovation. Learning and problemsolving are common activities in many working environments today, but some people believe that true entrepreneurship occurs when individuals ignore the established ways of thinking and acting and seek novel ideas and solutions that can meet customers' needs Entrepreneurship is, therefore, the innovatory process involved in the creation of an economic enterprise based on a new product or service which differs significantly from products or services offered by other suppliers in content or in the way its production is organized nor in its marketing.. (Curran and Burroughs, 1986) It has been argued that small businesses have a greater proclivity to innovate & create than their large counterparts and are, therefore, crucial in helping a country respond to myriad changes in the economic, technological and social environment. (Acs and Gifford, 1996). For instance, the OECD¹⁴ points out that small firms are innovative & creative in different ways and are especially active in developing new' management approaches to and marketing. (OECD/DST¹⁵/IND, 2000)

To grow and prosper, most enterprises need to constantly improve their existing products and services through continuously innovating needed changes: and for survival of the enterprise, must also need to create new products and services to meet yet unfulfilled needs. Enterprises that rely exclusively on innovation will prosper until their products and services "ran out of gases and become obsolete and noncompetitive. On the other hand, enterprise that are totally creative will have their new products and services ready to launch, but often too few current products sufficiently up-todate and competitive to generate the cash needed to fund their creativity.

Changes are that the very successful leaders of the future will be more likely to make creativity and innovation a strategic priority in their organization. In today's environment where competition requires business enterprises to be distinct and meet customer needs with better or never products and organization becomes in critical necessity

Joseph Schumpeter views innovation as the source of success in the market economy, a view that is reinforced by today's changing and competitive environment. The organization that is not creative and innovative cannot survive in the market place. Thus, entrepreneurs and enterprises are continuously creative and innovative to remain relevant to the customers, which is the purpose of every business.

What Are the Sources of Creativity and Innovation in Individuals?

A variety of theorists, using case studies, experiments and a variety of research methods, have attempted to better understand the sources of creativity and innovation in individuals. While these efforts have contributed significantly to broadening our comprehension of the subject, there is nonetheless disagreement between theorists and many hypotheses that remain to be fully substantiated. The challenge lies partially in the nature and definition of creativity itself. Broad, complex and multi-faceted, creativity can take many forms and can be found within a variety of contexts. It is embodied by individuals with a broad range of personal characteristics and backgrounds. It appears that the only rule is that there are no hard and fast rules concerning the sources of creativity. As such, the following paragraphs synthesize the current viewpoints, with the caveat that our understanding of the topic is still a work in progress. Creativity arises through the confluence of the following three components:

- **Knowledge**: All the relevant understanding an individual brings to bear on a creative effort.
- **Creative Thinking:** Relates to how people approach problems and depends on personality and thinking/working style.
- **Motivation:** Motivation is generally accepted as key to creative production, and the most important motivators are intrinsic passion and interest in the work itself.

3. THE CASE FOR INNOVATION:

September 2008 marked not only the collapse of financial markets, but the rapiddecline in innovation as a key corporate priority. In the few years prior to the crash, innovation had become the fuel for hot economic growth. And then, "innovation" as an organizational priority dropped off the radar charts. Managing during the crisisfocused on survival. Layoffs were common; R&D¹⁶ budgets were slashed. CEOswere doing everything possible to avoid risk and uncertainty, not pursue them.Now innovation & creativity is back with a vengeance. And on the off chance you're skeptical; in this section we'll delve into why innovation is so important.Not a day goes by without innovation stories on the front pages. According to arecent New York Times article¹, innovation & creativity is "the crucial ingredient in all economicprogress-higher growth for nations, more competitive products for companies, andmore prosperous careers for individuals." Seventy-two percent of CEOs rankedinnovation as one of their top three strategic priorities, up eight points since FY'092. The 2011 Conference Board CEO Challenges report3 placed innovation in the top five challenges list for Asia, Europe, and the United States. Innovation has truly been re-established as the currency of business growth.

Why So Critical: Innovation Drivers

There are a number of driving forces behind the reemergence of innovation

• While the status of the financial crisis remains uncertain, organizations still operatein an environment of conservative spend. R&D dollars are scarcer, meaningthat organizations need to be innovative, while at the same time more targetedin their internal investments. While on the surface those goals appear at odds,that may not necessarily be the case. The Corporate Executive Board recentlydispelled the myth that more ideas always generate more innovation & creativity⁴ Rather, betterperforming companies prefer fewer, bigger and more predictable innovation bets. Internal R&D investment trends match this pattern. A recent Booz Allen Hamilton report⁵ showed a negative correlation between R&D

(research and development) spends and successfulinnovation.⁴

Creating the Conditions for Sustainable Innovation & Creativity

- You've heard this before: there is little you can do today that can't be copied by a competitor more quickly and easily than ever before. Over the last decade, the average time to copy another company's new product has dropped from 369 days to 266!⁶ The impact: companies can't rest on their past laurels. It's why organizations like Apple, Unilever and Marriott continue to launch new products and services month after month, year after year. And, contrary to some pundits who prefer the "wait and copy strategy," first movers enjoy a 36 percent better stock return.⁵
- Innovation & creativity has become more than just a company priority; it has become a national imperative. Noted journalist FareedZakaria pointed out that Barack Obama mentioned "innovation" or "innovative" 11 times in his 2010 State of the Union Address.⁶ The Information Technology Innovation Foundation ranked the U.S. last of 40 countries in terms of improved innovation capacity over the past decade. In the meantime, China's government investment in corporate innovation will shortly outpace that of America's.

The Advantages Innovation & Creativity

There is substantial evidence that companies that focus on innovation & creativity enjoy better business performance.

- Companies who reported high innovation & creativity effectiveness had a 76 percent product success ratio versus 54 percent for companies with medium or low effectiveness ratings.⁴ Highly innovative companies enjoy better sales and profits from new products when compared to their less innovative counterparts (48 percent vs. 21 percent and 49 percent vs. 21 percent respectively).4
- A 2010 Boston Consulting Group study² demonstrated that innovative companies enjoyed a whopping 12.4-percent point advantage in their three-year total shareholder returns compared to their peers.

Creating the Conditions for Sustainable Innovatio^{5: Getting} to Innovation Drivers

Hop on the innovation & creativity bandwagon and expect a long and bumpy ride. Many organizations mistake creativity for innovation. No doubt, it is a very important ingredient in the dish, but not the only one. Looking backward, you can't help but respect the ingenuity behind 3M's Post-It Notes or Steve Jobs' incredible ability to use technology to transform century-old business models. Yet there are many companies with creative ideas and creative people who are not effective at driving innovation in their organizations. They fail because they are unable to turn those ideas into sustainable business. They fail because a "neat" idea may not be something customers want or are willing to pay for or worse yet, because a real winner gets executed miserably. Statistics indicate that 46 percent of R&D dollars get wasted on new products that never get off the ground or fail early.⁷ In 2000 P&G had many new ideas. Yet only 15 percent of them ever realized their profit and revenue targets. A decade later, their success rate has more than tripled.⁸

Their journey, like those of many other successful innovators, began by experimenting with the art and science of the innovation & creativity process. They took a closer look at the structure and process changes they needed to make to move from idea to successful execution. While there is not "one right answer," organizations are addressing a number of key areas:

- What's the best structure and organizational design to optimally foster successful innovation & creativity?
- How do you best combine top-down and bottom-up innovation & creativity?
- How do you move from a culture of risk aversion (the number one barrier to innovation & creativity, according to the Boston Consulting Group² report) to one of calculated risk-taking?
- What combination of innovation categories has the highest payoff (e.g., product, service, business model)?
- What are the ways deeper customer insights can help guide better hit rates?
- What are the best practices for moving from a new creation to successful execution of that creation?6
- Creating the Conditions for Sustainable Innovation⁷

The Linchpin: The Role of Leadership

While organizations vary widely in their approach to innovation & creativity, there is one common thread. The ability to consistently conceive of, create and bring to market new innovations is highly dependent on the quality of talent and the environment in which they work. And, in turn, responsibility for the quality of talent and a culture highly conducive to innovation squarely falls on leaders at all levels. In fact, the research on behavior of leaders spotlights them as one of the most, if not the most, important drivers of innovation & creativity. In a recent IBM study, ⁹ over 60 percent of a sample of 1,500 CEOs cited creativity as the most important leadership quality over the next five years. According to the research, "CEOs now realize that creativity trumps other leadership characteristics. Creative leaders are comfortable with ambiguity and experimentation. To connect with and inspire a new generation, they lead and interact in entirely new ways." In DDI's Global Leadership Forecast 2011, ¹⁰ fostering creativity and innovation was rated as the third most critical skill for the near future by over 12,500 leaders from around the world, and showed the biggest surge between its criticality in the past three years, and for the next three. Yet, a full 50 percent of the leaders in the sample considered they ineffective at doing it, more than any of the other critical skills! A leader's impact on employee innovation cannot be overstated: Teresa Amabile, a pioneer in research on the role of leadership in inspiring creativity, demonstrated how leaders can either nurture or destroy innovative behaviors based on their behaviors.¹¹ and, nowhere is this point about the role of leadership made more compellingly than in a recent work by Gary Hamel. In a widely-read 2009 Harvard Business Review article¹² as part of our Global Leadership Forecast 2011,10 we found leaders themselves often describing their organizations as rigid, restricting the opportunity to innovate to only a select few, or tending to value those who value the status quo more than the renegades. Those employees who participated in the forecast feeling that their own creative ideas are squashed by organizational bureaucracy; it's time for a wakeup call for many organizations today.

4. ABOUT THIS INNOVATION RESEARCH

In our experience, a clearly identified set of specific behaviors that relate to a leader's role in fostering innovation is lacking. Subsequently, we don't know how well leaders are performing on key behaviors, making it challenging to benchmark and prioritize development areas. Organizations are no longer questioning whether it makes sense to invest in creating an innovative culture-the current business environment and economic context has made this an unquestioned truth. The more pointed question on every leader's mind is and should be, "How do we institutionalize innovation so that we are doing it in a repeatable and sustainable way that brings measurable business value?" operationalize a definition of innovation, and the specific leadership behaviors that drive employee innovation. This was a first and essential step in our work to develop a curriculum to improve a leader's ability to create and foster the conditions where innovation flourishes among employees. Our working definition of innovation is a new solution (e.g. product, process, business model) that drives differentiation and measurable business value. These challenges are the kind of issues that keep CEOs, investors and other senior stakeholders up at night, as they inhibit organizational innovation & creativity.

The leader behaviors outlined below are crucial to creating and sustaining an environment in which associates are motivated and enabled to innovate.

• **Inspire Curiosity**–Innovation leaders encourage employees to expand their understanding of both internal and external stakeholders: who they are, how they are interdependent, and the unique contexts in which each one operates.

- **Challenge Current Perspectives**–Innovation leaders help employees view problems and opportunities differently and envision alternative possibilities.
- **Create Freedom**–Innovation leaders empower experimentation, risk taking, learning from mistakes, and valuing effort over perfection.
- **Drive Discipline**–Innovation leaders help employees identify execution implications early and often and align efforts to ensure successful implementation of innovative solutions.

5. **RECOMMENDATIONS**

So, what can be done to foster innovation & creativity for the growth and development? When it comes to driving innovation through leaders and their teams, we have several recommendations.

- Close the employee/leadership gap. Simple truth: Leaders play a pivotal role in fostering and creating a culture of innovation. Our results show that most leaders feel they excel at the behaviors that lead to higher levels of innovation. But, employees do not see their leaders the way leaders see themselves. From the employee viewpoint, leaders struggle to inspire curiosity, challenge current perspectives, create the freedom to innovate, and drive discipline. This may not be surprising, but it remains an enormous challenge to organizations ramping up their focus on innovation. Our perspective is that the skills leaders need to drive innovation are developable (see sidebar, page 20). We are not implying all leaders can become highly creative. They don't need to be. But most can do a far better job at learning and consistently applying the behaviors covered in this research, and in transferring the autonomy for innovation & creativity to their employees. Organizations must provide their leaders with the necessary skills to effectively function in this critical role.
- Build a top-down and bottom-up culture of innovation &creativity- Encouraging new approaches to leadership, involving employees and customers in all innovationrelated processes, rewarding creative effort, learning from failure-all are elements of an organizational culture that is 100 percent supportive of innovation. A recently issued study¹³ showed significantly higher profit and five-year CAGR¹⁷ for organizations that aligned their business strategy with an innovation focus. Our own study shows a very promising trend for organizations that take broad actions to achieve a highly visible and company-wide commitment to innovation. In these organizations, leaders report themselves as extensively displaying innovation & behaviors. And, it appears, employee creativity perceptions of leader behaviors are similarly positive. In fact, there is almost no difference between the two groups in organizations where there is a very strong cultural

commitment to innovation. This is likely a two-way street—that is, prominent organizational support reinforces the use of leader innovation & creative behaviors. More extensive use of these behaviors, in turn, helps build a stronger innovation culture.

- Examine innovation &creativity by level. The contributions of a frontline-level leader will be drastically different than those of a more senior one. While every level plays a critical role in innovation, it's important to consider actions that are appropriate to that level. Organizations must concentrate on the ways in which each level is uniquely endowed to drive innovation. Senior leaders are stewards of the culture. Mid-level leaders translate strategy into tactics. Frontline leaders are closest to the business, and will likely hear about trends first. Individual contributors are both a source for ideas, and for execution. The critical point: Innovation is everyone's job. And while level matters greatly, gender and age don't. Don't stereotype the ability (or inability) of any leader, at any age or of any gender, to excel at demonstrating innovation-related behaviors, as these assumptions will likely be mistaken and can be damaging if allowed to continue.
- Ignite innovation &creativity action. As we saw in Finding 1, leaders are most comfortable supporting innovation & creativity from the sidelines and with a minimum of personal engagement. While safer for leaders, these passive approaches are also less likely to truly spur employee creativity to the degree needed in a highly competitive and rapidly evolving business environment. Big ideas often start with many little ones, as well as failures that teach valuable lessons along the way. Leaders need to be personally comfortable with learning from mistakes and letting go of perfectionist tendencies that make it difficult for the teams to have the freedom and curiosity necessary to innovate. Leaders who aren't willing and able to dive in and accept these risks to provide employees with the necessary freedom will fail. To change, organizations must shake things up, and push leaders toward action. Make it clear that innovation requires risk acceptance and unambiguous commitment on the part of both the leader and the employee.
- Communication is key. Organizations need to supply leaders with current information about key business trends and strategies, and how these translate into the impetus for innovation and ideas when it comes to their teams. Driving execution is challenging, especially when it comes to innovation. Organizations may need to empower others by building accountability, fostering employee involvement, engaging team members in the creative process, and developing a work environment where employees are expected to grow, learn, and experiment with new concepts. Finally, for positions where innovation & creativity is key, organizations

should also imbed innovation behaviors—for leaders and employees—directly into the competency models and performance plans for the roles.

INNOVATION &CREATIVITY: Four things to do immediately to support innovation:

1. Senior Management Sets the Pace You heard it before: Start at the top. Senior managementsupport is essential for almost every initiative to work. But, in the case of innovation & creativity, it is a lot more than support. Seniormanagers must see innovation as a major business objective. They need to show they are willing to take calculated risks. They need to establish a culture that fosters openness, experimentation and customer intimacy. And, they need toput into place the processes that will turn good ideas intoprofitable businesses.

2. Choose the Right Leaders DDI¹⁸ assesses thousands of leaders each year for selection, promotion, and development. One of the biggest derailerswe see in leaders is aversion to risk. Fair to say, a leadershipteam of all high risk takers spells certain trouble. But a teamwhere almost everyone is risk averse will guarantee an"innovation less" environment. A science-based profile forleaders who are likely to foster innovation & creativity should be embeddedinto your selection/promotion systems.

3. Develop Innovation & creativity Leaders Begin to look at the ability to both innovate and build a culture conducive toinnovation as a set of skills and behaviors which can be developed. There arespecific techniques that can help both leaders and employees think morecreatively, connect with stakeholders (including customers), and evaluate newideas. Courses, like DDI's Driving Innovation, teach leaders how to drive innovation & creativity(but not necessarily be the source of all innovations, inspire curiosity in others, encourage experimentation, and reward ideas that work out—as well as those that do not.

4. Build a Business Process for Innovation P&G has become the poster child for innovation, and for good reason! Theymade tremendous improvement in their innovation success rates (measuredby the number of successful new product introductions balanced with a reductionin product failures). They did this not just by building a fountainhead of newideas spawned by close customer interactions and observations, but by havinga clear business process for bringing the right new ideas to market. Their chiefinnovation & creativity officer is accountable to make this process work throughout P&G'sglobal footprint. The key learning here is that innovation is a lot more than newideas; it is the science and discipline of tying innovation to business success.

6. CONCLUSION

Successful entrepreneurs require an edge derived from some combination of a creative idea and a superior capacity for execution. The entrepreneur's creativity may involve an innovation product or a process that changes the existing order. Or entrepreneur may have a unique insight about the course or consequence of an external change. Entrepreneurship is the vehicle that drives creativity and innovation. Innovation creates new demand and entrepreneurship brings the innovation to the market. Innovation is the successful development of competitive edge and as such, is the key to entrepreneurship. Creativity and Innovation are at the heart of the spirit of enterprise. It means striving to perform activities differently or to perform different activities to enable the entrepreneur deliver a unique mix of value. Thus the value of creativity and innovation is to provide a gateway for astute entrepreneurship-actively searching for opportunities to do new things, to do existing things in extraordinary ways. Creativity and Innovation therefore, trigger and propel first-rate entrepreneurship in steering organization activities in whatever new directions are dictated by market conditions and customer preferences, thereby delighting the customers to the benefit of the stakeholders. Innovation also means anticipating the needs of the market, offering additional quality or services, organization efficiently, mastering details, and keeping cost under control. No doubt, the current economic environment is a volatile and violent one. The new environment demands renewed dynamism of approach. Creativity and innovation is the new name of the game. Only the discerning organizations can manage the changes inherent in the new environment. It is the duty of the entrepreneur to keep his/her organization lean, young, flexible, and eager for new things to continuously delight the customers, which is the purpose of every business.

REFERENCE

- Lohr, S. (2011 Aug 28) Reaping the Rewards of Risk Taking. New York Times, Aug 27, 2011: BU3.
- [2] Andrew, J.P., Manget, J., Michael, D.C., Taylor, A., &Zablit, H. (2010) Innovation 2010: A Return to Prominence and the Emergence of a New World Order. Boston, MA: Boston Consulting Group.
- [3] The Conference Board CEO Challenge 2011: Fueling Business Growth with Innovation and Talent Development. (2011) New York, NY: The Conference Board.
- [4] Corporate Executive Board (2010). Making the Case for Radical Innovation Retrieved from http://mlcwideangle.exbdblogs.com/2010/12/08/ making-thecase-for-radical-innovation/
- [5] Jaruzelski, B. &Dehoff, K. (2010 Winter) The Global Innovation 1000: How the Top Innovators Keep Winning. Strategy + Business, 61: 48-61.
- [6] Zakaria, F. (2011 June) The Future of Innovation: Can America Keep Pace? Time, 177(23).
- [7] Cooper, R. (2001) Winning at New Products: Accelerating the process from idea to launch. New York, NY: HarperCollins.
- [8] Brown, B. & Anthony, S.D. (2011 June) Harvard Business Review, 89(6): 64-72.
- [9] Capitalizing on Complexity: Insights from the Global Chief Executive Officer Study, (2010), Somers, NY: IBM Corporation.

- [10] Boatman, J. &Wellins, R. (2011) Global Leadership Forecast 2011: Time for a Leadership Revolution. Bridgeville, PA: Development Dimensions International.
- [11] Amabile, T.M (1998 Sept/Oct) How to Kill Creativity. Harvard Business Review, 76(5): 76-87.
- [12] Hamel, G. (2009 Feb) MoonShots. Harvard Business Review, 87(2): 91-98.
- [13] Jaruzelski, B., Loehr, J. & Holman, R. (2011 Winter) The Global Innovation 1000: Why Culture is Key.
- [14] The Organization for economic Co- operation for Economic Development
- [15] Department of Science & technology.
- [16] Research & Development.
- [17] Compound area growth rate.
- [18] Department Dimensions International.