

Understanding the Repeating Contributor to Innovation

Michael T. Mitchell

The Chicago School of Professional Psychology

George W. Hay

The Chicago School of Professional Psychology

Although there is a well-established body of literature on sustained innovation (Coakes, Smith & Alwis, 2011; McCann, Selsky & Lee, 2009), less is known about the professionals who populate innovation projects within an organization over time and play a determining role in sustained innovation. The gap in the literature on repeating contributors to innovation (RCIs) has a corresponding gap in practice. This article advances a preliminary set of possible characteristics of effective (RCIs). Through a better empirical and practical understanding of repeating contributors to innovation, large organizations will be better equipped to sustain innovation and remain relevant.

INTRODUCTION

Practitioners and scholars have grasped the importance of innovation since Schumpeter (1942) published *The Theory of Economic Development*. More recently, due to rapidly advancing technology and globalization, the need for large organizations to innovate is growing in importance. Small upstarts or large competitors from anywhere on the globe can threaten the dominance of a large organization. Diffusion of information and an interconnected world dramatically shortens lifecycles of new ideas, increasing pressure on large organizations to repeatedly innovate in order to remain relevant. The power that large organizations once held has shifted (Christenson, 1997) and large organizations must find a way to respond.

Consequently, recent innovation literature has brought attention to the need for sustained innovation (Coakes, Smith & Alwis, 2011; DeCusatis, 2008; McCann, Selsky & Lee, 2009). Sustained innovation (SI) is the ability to repeatedly innovate throughout the life of an organization. However, research finds that large organizations struggle with the ability to sustain innovation. Instead, large organizations have a tendency to approach innovation on an irregular or sporadic basis (Bartel & Garud, 2009; Farrington, Kirk, Peters & O'Connor, 2011). As a testament to this fact, the organizational landscape is filled with examples of large organizations that did not sustain innovation. Polaroid, America Online, and Sony Electronics provide stark reminders that innovation is difficult to sustain. Organizations that were once great examples of innovation find it difficult to sustain their innovative status and fall victim to creative destruction (Schumpeter, 1942).

The innovation literature can be categorized into three broad perspectives: process, organizational environment, and people. A significant focus on process in the innovation literature is understandable as process has been an organizational focus since the industrial age. Rhodes (1961) was one of the earliest

researchers to identify process as a critical component of innovation. The process perspective focuses primarily on improving the step-by-step actions through which new ideas are created and developed (Brun, 2009; Cropley and Cropley, 2010; Vojak, Price & Griffin, 2012). Concepts such as Stage-Gate (Cooper, 1990), fuzzy front end (Smith & Reinertsen, 1992), and Amabile's (1998) model of creativity are outgrowths of the process perspective.

The organizational environment perspective holds that an organization's conditions, structure, and culture encourage or inhibit innovation (Fiates, Fiates, Serra & Ferreira, 2010; Fruhling & Siau, 2007; Carballo & McLaughlin, 2012). Organizational conditions extend to include leadership, appetite for risk-taking, individual employee perceptions, and treatment of employees (Cropley & Cropley, 2010, Senge, 2006, Fiates, et.al., 2010). In the organizational perspective, humans can impact the conditions. Therefore, the organizational conditions perspective naturally leads to a focus on people.

"First and foremost innovation is driven by people" (Mansfield, Holzle & Gemunden, 2010). Therefore, the people perspective is devoted to understanding people and their impact on innovation (Mansfield, Holzle & Gemunden, 2010). Research focuses on people in teams in terms of roles, team environment, and characteristics (DeCusatis, 2008; Paletz & Schunn, 2009, Sethi & Sethi, 2011). A great deal of research also focuses on the characteristics of innovative people. However, much of this research tends to focus on lone inventors or people in technically oriented fields, such as R&D and Engineering (Van de Ven, 1986; Vojak, Price & Griffin, 2012). However, the view of innovation as an invention of a lone inventor does not explain innovation in large organizations. Instead, innovation in large organizations is achieved by a team of contributors who create, mold, and bring an idea to useful fruition.

The human component of innovation is responsible for generating, recognizing, building, and moving an idea through an organization within the framework of process and culture. The people component of innovation has been focused on extensively in the literature due to its seminal importance. However, what is missing in the innovation literature is a focus on the people who repeatedly contribute to innovation efforts in large organizations. Therefore, there is a need to add to the body of knowledge on innovation by studying these repeating contributors to innovation (RCIs).

The purpose of this paper is to advance a preliminary set of the professional characteristics that describe the RCI in large organizations. Consistent with the approaches advocated by Engaged Scholarship (Van de Ven, 2007), we examine the RCI up-close through our professional experiences with innovation in order to get a better sense of the nature of the problem. We also use the existing literature to provide a starting point for generating insights into the possible professional characteristics of RCIs and build our emerging theory of them.

Problem Formulation: The RCI Up-Close

The importance of understanding the RCI is of interest to practitioners as well as scholars. As a CEO recently stated, "process and culture will sustain innovation to some degree, but it's finding the right people to put into innovation roles that will really make the difference". His point illustrates not only the ultimate importance of the people element of innovation, but the struggle to identify the right people who can continually contribute to innovation projects. The struggle exists in part because of recruitment and selection processes that have yet to be optimized and formalized. The struggle also exists at a deeper organizational level because of a lack of knowledge on the characteristics of effective RCIs. It is difficult to run an effective staffing pipeline for innovation projects if the competencies for the required personnel have yet to be defined and validated.

As internal and external consultants on innovation research, we have experienced the phenomena of the RCI within large organizations. We have witnessed successful and unsuccessful innovation projects. We have seen effective RCIs lead successful innovation projects under difficult circumstances. We have observed up-close the struggle to save innovation projects that were led by ineffective RCIs. We have reflected upon the differences between successful and unsuccessful innovation projects, and upon the possible professional characteristics of effective RCIs. We see problems arising in innovation projects as a result of an inadequate understanding of the characteristics of RCIs. These problems stem from

mistaken beliefs that a stream of successful innovation projects are led by 1) creative people, 2) experts in fields outside of innovation, or 3) project managers.

We have observed an issue with placing highly creative people in innovation roles. The problem with the assumption that all RCIs are highly creative is that some highly creative people find it difficult to function over the long-term on a team with shared responsibility. Instead, highly creative people may be more independent and focus only on the satisfaction derived from the most novel, instead of the most useful, ideas. Those who excel only in idea generation often fail along the arduous path of executing a great idea in a large organization.

An additional misstep is the assumption that a person who is accomplished in a role or professional domain will also be accomplished in a role as a repeating contributor to innovation. For example, we have observed excellent Brand Managers placed in RCI roles due to the assumption that expertise in one professional domain will transfer to expertise in the role of RCI. Professional expertise often does not transfer to a new domain. Our experience informs us that there are unique capabilities required of the RCI that do not mirror capabilities in other organizational roles. Repeatedly withstanding the risk of failure ever-present in innovation does not often suit those who are more satisfied with incremental improvement.

We have observed that those only possessing project management skills often lack the creative thinking skills required to move an idea off of the inevitable snags that occur in large organizations. An RCI is not just a good executor. Linear thinkers, even if they hold an MBA, may make excellent business managers but lack the intuitive, networked, lateral thinking required to continually discover new patterns.

The above examples represent only some of the miscalculations that are made when organizations recruit personnel to repeatedly lead innovation projects. Due to the gap in the extant literature on RCIs, these examples raise more possibilities about the nature of RCIs than bring to life the findings of current research. Do effective RCIs demonstrate a lack of creativity, generalizable expertise and project management? Might effective RCIs demonstrate a balanced level of competence across those areas so that they are able to develop innovations and move them to market across the time and political dimensions of their organizations?

Unfortunately, the current literature on innovation is largely silent with regards to RCIs. However, the current literature is not unhelpful. Through the processes of abduction and deduction, the current literature can be used to derive propositions regarding RCIs and their professional characteristics. These propositions are presented in the next section.

Theory Building: What Might be the Characteristics of the RCI?

What follows in this section is a discussion of the relevant literature on the people components of innovation in order to suggest a possible roadmap for understanding the RCI. As shown in Table 1, there are six streams of literature that are covered: 1) entrepreneurialism and intreprenurialism; 2) innovative people; 3) creative people; 4) Psychological Capital (PsyCap); 5) professional identity; and 6) teams and team roles. The discussion summarizes the key findings on each of those streams and then presents the related propositions on RCIs that are expected if those key findings hold true. Note that our use of the existing literature leaves open the possibility for research to discover a unique combination of characteristics, a pertinent hierarchy, or completely new professional characteristics that define the RCI.

TABLE 1
GUIDANCE FOR THE STUDY OF PROFESSIONAL CHARACTERISTICS OF THE RCI

Key element	Source
1) Entrepreneurialism and intrapreneurialism:	
Self-management (confidence and perseverance)	Chegini & Khoshtintat, 2011
More innovative, less adaptive, high LOC	Engle, Mah, Sadri, (1997)
Self efficacy of task performance	Hashimi, Nadi & Rezvanfar, 2012
Psychological empowerment, sense of control	
High perceived organizational support (POS)	
Risk-taking	Chen, Su, Wu, 2012
High need for achievement	
2) Innovative people:	
Motivation to solve problems	Vojak, Price & Griffin, 2012; Amabile, Hadley & Kramer
Extroversion	Vojak, Price & Griffin, 2012; Griffin et.al., 2009, Chen & Chen, 2009;
Agreeableness	Vojak, Price & Griffin, 2012; Griffin et.al., 2009
Political savvy	
Engagement with others vs. aloof	
Practical	Griffin et al., 2009 Griffin et al., 2009; Shipton, West, Dawson, Birdi, & Patterson, 2006; Amabile, Hadley & Kramer, 2002
3) Creative people:	
Expertise (domain and procedural knowledge)	Amabile, 1998; Vojak, Price & Griffin, 2012 Amabile, 1998; Mansfield, Holze & Gemunden, 2010; Griffin, et.al., 2009
Intrinsic and extrinsic motivation	
Creative thinking skills (flexibility of thought and novelty)	Amabile, 1998
both innovative and conforming	Cropley & Cropley, 2010 Schwiezer, 2006; Horng, Hon-Chao, Yi-Chia, 2011; Griffin, et.al., (2009
Willingness for risk-taking	Schwiezer, 2006
Independence	Horng, Hon-Chao, Yi-Chia, 2011
Openness to experience	Griffin et.al., 2009
Perseverance	
Tolerance for ambiguity	
Novelty seeking	Schwiezer, 2006;
Sensation seeking	Zuckerman & Clonginger, 1996
Desires change	Fenwick, 2004
Desires freedom	

High self efficacy High locus of control Influences on self efficacy: collegial support, resources, knowledge and leadership behavior	Jafri, 2012; Tierney & Farmer, 2002; Choi, 2004 Mathisen, 2011 Mathisen, 2011; Tierney & Farmer, 2002
4) Psychological Capital (PsyCap):	
Self-efficacy Optimism Realistic and flexible optimism Hope Resiliency Broad thought-action tendencies vs. flight-fight High PsyCap related to organizational citizenship behavior	Jafri 2012; Luthens, Yousseff & Avolio, 2007; Luthens, Youssef & Rawski, 2011; McCrae & Costa, 1989; Zhao, 2009; Jafri 2012 Zhao, 2009 Luthens, Youssef & Rawski, 2011; Jafri 2012 Luthens, Youssef & Rawski, 2011 Avey, Reichard, Luthens, & Mhatre, 2011; Luthens & Avolio, 2007 Avey, et.al., 2011
5) Professional identity:	
Orientation: individual, relational, collectivist Organizational target: workgroup, coworkers, organization Ability to take perspective outside professional domain	Cooper & Thatcher, 2011 Macdonald, Burke & Stewart, 2006;
6) Teams and team roles	
Ideator, champion, orchestrator, clarifier Team type Characteristics of innovation team member: self, interpersonal, project, content mgt Openness Motivation to change	Galbraith, 1984; Meyer, 2000; DeCusatis, 2008 DeCusatis, 2008 Du Chatenier, Vertegan, Biemans, Mulder, & Omta, 2010 Homan, Hollenbeck, Humphry, Knippenberg, Ilgen, VanKeleef, 2008; du Chatenier, et.al, 2010; McCrae & Costa, 1987 Burch, Pavelis & Port, 2008

Entrepreneurialism and Intrapreneurialism

Characteristics of entrepreneurialism and intrapreneurialism (Burgelman, 1984) may be found in the RCI. Chegini and Khoshtintat (2011) found that entrepreneurial skills included those related to self-management (confidence and perseverance), project management, and interpersonal skills. Motivations of entrepreneurs and intrapreneurs may also provide a glimpse into the motivations of the RCI. Chen, Su and Wu (2012) demonstrate that an entrepreneur's high need for achievement (N-Ach) encourages calculated risk-taking. The authors state that the high need for achievement often involves setting challenging goals that are hard to realize. Therefore, those with a high need for achievement orientation will set challenging goals and accept the associated risks.

Hashemi, Nadi and Rezvanfar (2012) create a model that defines key elements of entrepreneurial behavior (EB) in organizations that further draws a correlation between entrepreneurs and intrapreneurs. A key component of EB is entrepreneurial self-efficacy (ESE), psychological empowerment (PE) and perceived organizational support (POS) Engle, Mah and Sadri (1997), determined that intrapreneurs are more innovative and less adaptive and have a higher internal locus of control (LOC) than their employee

counterparts. The findings suggest that intrapreneurial employees stand out from other employees and may mirror moderated characteristics of entrepreneurs.

Proposition 1: Successful RCIs will demonstrate a mix of entrepreneurial and intrapreneurial characteristics such as N-Ach, high internal LOC and perseverance.

The Innovative Person

Understanding if there is a link between innovative people and RCIs will be a useful approach. Vojak, Price and Griffin (2012) find the breakthrough innovators to be highly motivated to solve practical and relevant problems. This finding coincides with the findings of Amabile, Hadley and Kramer (2002) that an innovative person is driven at least in part by extrinsic motivation. Money and notoriety come with practical and useful solutions. Breakthrough innovators also display a political savvy, an ability to engage support and input from those around them as they marshal their ideas forward (Vojak, Price & Griffin, 2012; Griffin, Price, Maloney, Vojak & Sim, 2009). These findings correspond with other insight into the characteristics found in innovative people such as extroversion and agreeableness (Chen & Chen, 2009).

Practicality is demonstrated in other ways by innovators. Griffin, Price, Maloney, Vojak and Sim (2009) find that innovators educate themselves across domains, beyond technical or scientific, to include financial and marketing aspects of business. Shipton, West, Dawson, Birdi and Patterson (2006) find that exploratory learning and training contributes to innovation in an organization. The Componential Theory of Innovation (Amabile, Hadley, Kramer, 2002) also supports the value of knowledge and expertise as a key characteristic of innovative people.

Proposition 2: Successful RCIs will approach innovation projects with a mindset of practical and relevant problem solving.

The Creative Person

Amabile's (1998) Componential Theory states that three inter-related components characterize an innovative person: expertise, motivation, and creative thinking skills. Expertise refers not only to domain knowledge, but also procedural knowledge. The characteristic of motivation includes both intrinsic and extrinsic motivation. While some research identifies only intrinsic motivation (Mansfield, Holze, Gemmunden, 2010), Amabile (1998) is in agreement with Griffin, Price, Maloney, Vojak and Sim (2009) that motivation can be both intrinsic and extrinsic. Amabile's (1998) component of creative thinking skills refers to the cognitive process of innovative people. In the model, creative thinking skills are a combination of two capabilities: flexibility of thought and novelty.

Cropley and Cropley (2010) state that the capabilities of a creative person are a "paradox" and "bipolar" (p. 79). For example, they argue that a creative person must have both an innovative personality and a conforming personality. The innovative side emphasizes tolerance of ambiguity, flexibility and independence, while the conforming side accepts prevailing norms and is eager to eliminate ambiguity. Creativity requires openness to possibility in some aspects and an action orientation in other aspects.

Research that falls into the realm of personality traits identifies characteristics of innovative people and therefore may provide an understanding of the RCI. Schwiezer (2006) states autonomy, confidence, risk-taking, and independence are widely accepted as traits which support creativity. Griffin, Price, Maloney, Vojak and Simm (2009) identify risk-taking and add perseverance to the list of characteristics of innovative people. A tolerance for ambiguity is also recognized as a trait by Burch, Pavelis and Port (2008). Many of the traits or characteristics identified in all of the research cited above coincide with most of the five personality traits identified by McCrae and Costa (1989): neuroticism, extroversion, openness to experience, agreeableness, and conscientiousness.

Understanding the relationship between novelty-seeking and professional characteristics of the RCI is included in our broad construct. Schweizer's (2006) Novelty Generation Model (NGM) divides novelty seeking into the two components of individual motivation and interaction with others. The need for cognition, mastery, and achievement form the individual motivation component. Elements found in the

interaction with others coincide with traits of extroversion found in other research on innovative people and personality (McCrae & Costa, 1989; Vojak, Price, Griffin, 2012). Additionally, novelty-seeking innovators show an interest in having a product that will be socially judged and recognized. Zuckerman and Cloninger's (1996) sensation-seeking scale divides sensation seeking along the two dimensions of experience seeking (ES) and boredom susceptibility (BS). Experience seeking is the seeking of novel experiences through the mind and senses (music, art, travel, association with groups on the fringe of society) while BS refers to an intolerance of repetitive behavior of any kind.

Additionally, creativity and innovation may be linked to self-efficacy. People with high self-efficacy are more likely to undertake more challenging activities, such as creating and implementing new ideas (Jafri, 2012; Tierney & Farmer, 2002; Choi, 2004). Creative self-efficacy falls on a spectrum from generalized to specific. Per Mathisen (2011), generalized self-efficacy has been found to be related to the elements of self-esteem and locus of control (LOC). Those with high generalized self-efficacy and high LOC are more likely to be confident in their overall ability to be creative in almost any situation or circumstance. However, creative self-efficacy is also state-like and situational. Creative self-efficacy is related to perceived resources, constraints, and contextual factors, such as domain specific knowledge and leadership behavior (Mathisen, 2011; Tierney & Farmer, 2002). Additionally, collegial support from the workgroup can increase specific creative self-efficacy (Mathisen, 2011).

Proposition 3: Successful RCIs will demonstrate creativity but within a framework guided by the constraints of their organization.

Psychological Capital (PsyCap)

Literature on PsyCap provides insight on innovative people (Jafri, 2010; Luthens, Youssef, & Rawski, 2011) and possibly the RCI. PsyCap is an individual's positive psychological state of development characterized by self-efficacy, optimism, hope, and resiliency. Additionally, PsyCap is state-like and can build over time. The ability to build PsyCap over time creates particular interest in the study of employee performance and innovation. Luthens, Youssef, & Rawski, 2011 posit that PsyCap broadens thought-action tendencies versus flight-fight tendencies. Broadening thought-action tendencies allows a person to see a problem from a broad perspective and determine multiple ways to solve the problem. Therefore, if PsyCap can be accumulated and tapped, it may provide a source for innovative behavior and repeated innovative behavior.

Extant research does show that PsyCap is related to innovation and innovative behavior. In their quasi-experimental research among over 1500 adults, Luthens, et al., 2011 find that PsyCap is related to reported innovation and mastery orientation. Additionally, Luthens, et al., (2011) find that mastery orientation is positively related to reported innovation. Mastery is similar to other findings about innovative and creative people regarding attention to training and expertise (Griffin, Price, Maloney, Vojak & Sim, 2009; Amabile & Kramer, 2012; Shipton, West, Dawson, Birdi & Patterson, 2006). Jafri (2012) finds that three of the four components of PsyCap are related to innovative behavior. Three of the elements of PsyCap were found to be related to innovative behavior: hope, optimism, and self-efficacy.

In a meta-analysis, Avey, Reichard, Luthens and Mhatre (2011) find that PsyCap is positively related to desirable attributes of overall employee behavior and negatively related to undesirable employee behavior. Specifically, Avey et al., (2011) argue that PsyCap creates commitment to the organization because the organization fulfills efficacy and accomplishment needs. "In turn, employees are more likely to embed themselves and be enthusiastic about their work (engagement)" (p. 132). These findings are further supported by Jafri (2012) who posits that PsyCap may contribute to an employee's commitment to an organization. Additionally, Amabile, Barsade, Mueller, and Staw's (2005) finding that affect influences creativity and affect is influenced by the work environment, argues that feelings towards the organization impact creativity and innovation.

Proposition 4: Successful RCIs will possess a high degree of psychological resiliency.

Professional Identity

Understanding how the RCI identifies is worthy of investigating. Cooper and Thatcher (2011) state that the self-concept has three orientations: individual, relational, and collectivist. A person with an individual orientation views him or herself as unique and autonomous from others and other groups. In a professional setting, this is the entrepreneur or lone inventor, for example. The relational orientation focuses on interpersonal relations, forming the self-concept in terms of relationship with others. In a work setting, this is the team player or someone who has strong boundary-spanning co-worker relationships, for example. A collectivist orientation is one where the self-concept is defined by membership to a large group or entity. For example, a self-concept that is strongly attached to an organization or industry is a collectivist orientation.

Cooper and Thatcher (2011) posit that there are three organizational targets for the desired identity. The three targets are aimed for in a dynamic manner and not necessarily exclusively. Organizational targets include the workgroup, coworkers, and the organization overall. The workgroup is defined by the smaller and collective group of coworkers potentially in a given department or team. Coworkers are individuals inside or outside one's professional domain or workgroup. The organization overall refers to the identity of the larger collective, the totality of the overall organization.

Fenwick (2004) identifies ways in which portfolio workers utilize their professional identity to discern, render, and gather organizational momentum behind new ideas. A portfolio worker is a contractor to various client organizations. The portfolio worker utilizes their outsider identity to better recognize opportunity and gather momentum for a potential innovation. In this way, a portfolio worker has an advantage similar to what an outside consultant has when consulting with an organization. The RCI can be viewed as a portfolio worker as they figuratively contract on a temporary basis to contribute to an innovation. Assuming there is a relationship between Fenwick's (2004) research and innovation team members, it is possible that the RCI bring some element of their professional identity to bear in rendering the innovation.

Proposition 5: Successful RCIs will identify with their organizations more than their individual professional domains.

Innovation Team Roles

Teams are commonly used for innovation efforts in large organizations and the RCI serves as a member of the team. Therefore, it is useful to understand team roles in an attempt to understand the RCI. Galbraith (1984) defined three roles related to innovation: idea generator, idea champion, and orchestrator. Meyer (2000) focused on the roles described by Galbraith (1984) and studied how each role views the outcome of innovation efforts. Meyer's findings suggest that the "devil's advocate" (p. 328) role should be added to the other three roles. DeCusatis (2008) discusses four types of innovation roles. While there is some similarity to Galbraith (1984), the roles discussed by DeCusatis (2008) concentrates on clarifier, ideator, developer, and implementor.

du Chatenier, Versegen, Biemans, Mulder and Omta (2010) performed an extensive review of the literature and found a number of characteristics associated with the positive contribution to an innovation team by a single team member. In all, the characteristics fell under the headings of self-management, interpersonal management, project management, and content management. Characteristics under the heading of self-management include confidence, desire to learn, and perseverance. Characteristics under the heading of interpersonal management include the ability to build trust, social astuteness or sensitivity, and influence. Additionally, the characteristic of building organizational and professional networks through a desire to be a social person is a characteristic under interpersonal management.

Homan, Hollenbeck, Humphry, Van Knippenberg, Ilgen and Van Kleef (2008) infer that openness to new ideas may be a positive characteristic of innovation team members. Homan et al., (2008) reference McCrae and Costa (1987) with the inclusion of openness in the big five personality traits. The authors argue that people who are more open are less dogmatic in their own views and more open to the views of

others. Openness may also contribute to the interpersonal characteristics and capabilities illustrated by du Chatenier et al., (2010).

Burch, Pavelis and Port (2008) compared scores on the Innovation Performance Indicator (IPI) to the Team Selection Inventory (TSI). The IPI measures an individual's capability to be innovative, while the TSI measures the person-innovation team fit. In their research, Burch et al., (2008) found that a high score on motivation to change on the IPI correlated positively with high TSI scores. The finding indicates that a person who is motivated to change also fits well with an innovation team. The findings of Burch et al (2008) are similar conceptually to the openness findings of du Chatenier et al., (2008), McCrae and Costa (1987), and Homan et al., (2008).

Proposition 6: Successful RCIs will display a high degree of openness to new ideas, new innovation teams and new tasks.

SUMMARY AND CONCLUSION

Throughout this article, we propose that it is time to bring the nature of the RCI to light and begin to create an understanding of these professionals who are so critical to sustained innovation. We assert that through better identification of the professional characteristics of the RCI, organizations will reduce the misplacement errors, increase efficiency in appointing RCIs and be better able to sustain innovation. Additionally, an understanding of the professional characteristics of the RCI will help organizations understand how to develop RCIs. A deep reservoir of effective RCIs is highly advisable given the turbulence that defines the contemporary environment of large organizations.

The preceding sections have added analytical depth and breadth to the investigation of the professional characteristics of RCIs. The Problem Formulation section demonstrates the need to understand the professional characteristics of RCIs by showing how a lack of knowledge of them contributes to failed innovation projects. Because of the lack of research on RCIs, the literature was used in the Theory Building section to derive a set of professional characteristics that may define the RCI. Note that these professional characteristics are possibilities as they are based on taking findings from related studies and translating them to our subject of interest.

As summarized in Table 2, the six propositions suggest the professional characteristics of RCIs. RCIs may approach innovation projects with a mindset of practical problem solving. RCIs may embody a balance of entrepreneurial and intrapreneurial skills and a balance of creativity but within the constraints of the organization. RCIs may be more engaged with their organization than with their professional domain, placing the needs of their organization above those of their profession. RCIs may be psychologically resilient with a tendency to be open to new ideas, new teams and team members, and to new tasks.

We acknowledge that to a large extent this paper implies that a new stream of research should be conducted in order to assess how many of the potential characteristics are evidenced with RCIs. We intend to commence such research. It is beyond the scope of this paper to compare and contrast the forms of research that could be employed to explore the propositions and extend the understanding of RCIs. Suffice it to say at this point, that the propositions suggest a starting point for Engaged Scholarship and that we are committed to Basic Stakeholder Research and Collaborative Basic Research (Van de Ven, 2007, p. 27) in order coproduce a better understanding of this phenomenon.

TABLE 2
PROFESSIONAL CHARACTERISTICS OF THE RCI

Proposition Number	Proposition
1	Successful RCIs will demonstrate a mix of entrepreneurial and intrapreneurial characteristics such as HN-Ach, high internal LOC and perseverance.
2	Successful RCIs will approach innovation projects with a mindset of practical and relevant problem-solving.
3	Successful RCIs will demonstrate creativity but within a framework guided by the constraints of their organization.
4	Successful RCIs will possess a high degree of psychological resiliency
5	Successful RCIs will identify with their organizations more than their individual professional domains.
6	Successful RCIs will display a high degree of openness to new ideas, new innovation teams and new tasks.

REFERENCES

- Amabile, T. 1998. A model of creativity and innovation in organizations. *Research In Organizational Behavior*, 10(1998): 123-169.
- Amabile, T., Barsade, S., Mueller, J., Staw, B. (2005). Affect and creativity at work. *Administrative Science Quarterly*, 50 (2005): 367-401.
- Amabile, T., Hadley, C., and Kramer, S. 2002. Creativity under the gun. *Harvard Business Review*, 80(8): 52-61.
- Avey, J., Reichard, R., Luthens, F., Mhatre, K. (2011). Meta-analysis of the impact of positive psychological capital on employee attitudes, behaviors, and performance. *Human Resource Development Quarterly*, 22(2): 127-152.
- Bartel, C., Garud, R. (2009). The role of narratives in sustaining organizational innovation. *Organizational Science*, 20(1): 107-117.
- Brun, E. (2009). Ambiguity reduction in new product development projects. *International Journal of Innovation Management*, (12)4: 573-596.
- Burch, G., Pavelis, C., Port, R. (2008). Selecting for creativity and innovation: the relationship between the innovation potential indicator and the team selection inventory. *International Journal of Selection Assessments*, 16(2):177-181.
- Caraballo, E.L., McLaughlin, G.C. (2012). Individual perceptions of innovation: a multi-dimensional construct. *Journal of Business and Economics Research*, 10(10): 553-568.
- Chegini, M., Khoshtinat, B. (2011). Study of relationship between entrepreneurial skills and organizational entrepreneurship. *Australian Journal of Basic and Applied Science*, 5(4): 165-172.
- Chen, J., Chen, I. (2009). An empirical study of the relationships between leader, member, and innovative operation in the high tech industry. *Journal of Organizational Culture*, 13 (1): 21-33.
- Chen, S., Su, X., Wu, S. (2012). Need for achievement, education, and entrepreneurial risk-taking behavior. *Social Behavior and Personality*, 40(8): 1311-1318.

- Choi, J. (2004). Individual and contextual predictors of creative performance: the mediating role of psychological processes. *Creativity Research Journal*, 16: 187-189.
- Christensen, C.M. (1997). *The Innovator's Dilemma*. New York: Harper Collins.
- Coakes, E., Smith, P., Alwis, D. 2011. Sustainable innovation and right to market. *Information Systems Management*, (29): 30-42.
- Cooper, D., Thatcher, S. (2011). Identification in organizations: the role of self-concept orientation motives. *Academy of Management Review*, 35(4): 516-538.
- Cooper, R. (1990). Stage-gate systems: a new tool for managing new products. *Business Horizons*, 33(3): 44-54.
- Cropley, D., Cropley, A. (2010). Understanding the innovation-friendly environment: a psychological framework. *Baltic Journal of Psychology*, 11(12): 73-87.
- DeCusatis, C. (2008). Creating, growing and sustaining efficient innovation teams. *Creativity and Innovation Management* 2(17): 155-164.
- du Chatenier, E., Vertegan, J., Biemans, H., Mulder, M., Omta, O. (2010). Identification competencies for professional in open innovation teams. *R&D Management*, 40(3): 271-280.
- Engle, D., Mah, J., Sadri, G. (1997). An empirical comparison of entrepreneurs and employees: implications for innovation. *Creativity Research Journal*, 10(1): 45-49.
- Farrington, T., Kirk, B., Peters, L., O'Connor, G. (2011). Institutionalizing innovation competency through people. *Research and Technology Management*, November-December, 2011: 56-58.
- Fenwick, T. (2004). Learning in portfolio work: anchored innovation and mobile identity. *Studies in Continuing Education*, 26 (2): 229-245.
- Fiates, G., Fiates, F., Ferreira, M., Serra, J. (2010). Innovation environment in small technology-based companies. *Journal of Technology Management & Innovation*, (5)3: 81-96.
- Fruhling, A., Siau, K. (2007). Assessing organizational innovation capability and its effect on e-commerce initiatives. *Journal of Computer Information Systems*, Summer: 91-103.
- Galbraith, J. (1984). *Designing the Organization*. New Jersey: Prentice-Hall.
- Griffin, A., Price, R., Maloney, M., Vojak, B., Sim, E. (2009). Voices from the field: how exceptional electronic industrial innovators innovate. *The Journal of Product Innovation Management*, 26: 222-240.
- Griffin, A., Price, R., Vojak, B. (2012). Serial innovators. how individuals create and deliver breakthrough innovations in mature firms. *Research Technology Management*, November-December: 42-48.
- Hashemi, S., Hossien, K. (2012). Agricultural personnel's intrapreneurial behavior: effects of perceived organizational support, psychological empowerment and entrepreneurial efficacy. *Annals of Biological Research*, 3(1): 575-582.
- Homan, A., Hollenbeck, J., Humphrey, S., Knippenberg, D., Ilgen, D., Van Keleef, G. (2008). Facing differences with an open mind: openness to experience, salience of intragroup differences, and performance of diverse work groups. *Academy of Management*, 51(4): 1204-1222.
- Hornig, J., Meng-Lei, H., Jon-Chao, H., Yi-Chia, L. (2011). Innovation strategies for organizational change in a tea restaurant culture: a social behavior perspective. *Social Behavior and Personality*, (39)2: 265-273.
- Jafri, H. (2012). Psychological capital and innovative behavior: An empirical study on apparel fashion industry. *Journal Of Contemporary Management Research*: 1(6): 42-52.
- Luthens, F., Youssef, C., Rawski, S. (2011). A tale of two paradigms: the impact of psychological capital and reinforcing feedback on problem solving and innovation. *Journal of Organizational Behavior Management*, 31: 333-350.
- Luthens, F., Yousseff, C., Avolio, B. (2007). *Psychological Capital*. New York: Oxford University Press.
- Mansfield, M., Holzle, K., Gemunden, H. (2010). Personal characteristics of innovators-an empirical study of roles in innovation management. *International Journal of Innovation Management*, 14(6): 1129-1147.

- Mathisen, G. (2011). Organizational antecedents of creative self-efficacy. *Creativity and Innovation Management*, 20(3): 185-195.
- Mathisen, G., Martinsen, O., Einarsen, S. (2008). The relationship between creative personality composition, innovative team climate, and team innovativeness: an input-process-output perspective. *Journal of Creative Behavior*, 42(1): 13-31.
- McCann, J., Selsky, J., Lee, J. (2009). Building agility, resilience and performance in turbulent environments. *Strategy and People*, 32(3): 45-51.
- McCrae, R., Costa, P. (1989). Reinterpreting the Myers-Briggs Type Indicator From the Perspective of the Five-Factor Model of Personality. *Journal Of Personality*, 57(1): 17-40.
- Meyer, M. (2000). Innovation roles: from souls of fire to devil's advocates. *The Journal of Business Communication*, 37(4): 328-347.
- Paletz, S., Schunn, C. (2009). A social-cognitive framework of multidisciplinary team innovation. *Topics in Cognitive Science*. 2 (2010): 73-95.
- Rhodes, M. (1961). An analysis of creativity. *Frontiers of creativity research*. New York: Bearly Limited.
- Schumpeter, J. (1942). *The theory of economic development*. Cambridge, MA: Harvard University Press.
- Schweizer, T. (2004). An individual psychology of novelty-seeking, creativity, and innovation. ERIM Ph.D. Series, Nr. 48.
- Schweizer, T 2006. The psychology of novelty-seeking, creativity and innovation: neurocognitive aspects within a work-psychology perspective. *Creativity and Innovation Management*, 15(2): 164-172.
- Senge, P. (1996). *The Fifth Discipline: The art and practice of a learning organization*. New York: Doubleday.
- Sethi, A., Sethi, R. (2011). How critical is stability in cross-functional product development teams? *American Marketing Association, Summer 2011*: 576-577.
- Shipton, H., West, M., Dawson, J., Birdi, K., Patterson, M. (2006). HRM as a predictor of innovation. *Human Resource Management Journal*, 16 (1): 3-27.
- Smith, P., Reinertsen, D. (1992). Shortening the product development cycle source. *Research and Technology Management*, 35(3): 44-49.
- Tierney, P., Farmer, S. (2002). Creative self-efficacy: its potential antecedents and relationship to creative performance. *Academy Of Management Journal*, 45(6): 1137-1148.
- Van de Ven, A. (1986). Central problems in the management of innovation. *Management Science*, 4 (32): 590-605
- Van de Ven, A. (2007). *Engaged Scholarship: A guide for organizational and social research*. New York: Oxford University Press
- Vojak, B., Price, R., Griffin, A. (2012). How individuals create and deliver breakthrough innovation in mature firms. *Research and Technology Management*, November-December, 2012: 42-48.
- Wackerhausen, S. (2009). Collaboration, professional identity and reflection across boundaries. *Journal of Interprofessional Care*, 23(5): 455-473.
- Zhao, Z. (2009). The study on psychological capital development and intrapreneurial team. *International Journal of Psychological Studies*, 1(2): 35-40.
- Zuckerman, M., Cloninger, C. (1996). Relationships between Cloninger's, Zuckerman's and Eysenck's dimensions of personality. *Personality and Individual Differences*, 21: 283-285.