NAVIGATING THE WORLD OF INNOVATION: A SUGGESTED PATH FOR TODAY'S BUSINESS MANAGERS

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Abstract

How might leaders stand out from the rest, especially in a turbulent economic environment? Not by spouting the same efficiency optimization skills taught in most schools, but by mastering adaptability, a seamless creative process combining analytical and imaginative thinking skills. This tangible, proven process encourages deliberate and proactive innovation. Concrete real-life business cases are provided throughout showing how business managers can distinguish their units by recognizing, measuring, and collaborating the design thinking and problem solving styles and preferences of their staff and team members through a four-stage process of problem finding, problem definition, solution optimization, and implementation for innovative edge.

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Many things will be different by the middle of this century. Managers will be collaborating, thinking and problem solving at more innovative levels. As technological advances in social networking, big data and artificial intelligence provide more insightful information and more reliable analytical tools, tomorrow's managers will differentiate themselves through their design problem solving. With technological advances available to all competitors and offering only a temporary competitive edge at best, it will be the cognitive and collaborative skills of managers that provide real competitive advantage. Effective use of large amounts of information and sophisticated decision support systems will require managers to be skilled in articulating the right questions to ask, and the correct queries to make. Rather than commandeering hurried hit or miss solutions, they will learn to save time and increase accuracy by following Einstein's wise saying: "If I had an hour to save the world, I would spend 55 minutes defining the problem and I would need only five minutes to solve it." Rather than delegating solutions they have created themselves, tomorrow's managers will need to be adept at handing off fuzzy problems to well-designed teams skilled in fact finding and problem definition, as well as the creation of solutions capable of attracting the necessary consensus for implementation. In a world that demands innovation, the ability to integrate analytical and imaginative thinking – and inspire it in others – will become increasingly essential to success. With that dream for the future in mind, I share the following thoughts and real-life lessons on innovation, creativity and team building.

A decade ago, I received a phone call from a former client named Barry. He called to ask if I remembered leading a creative problem solving session he had participated in with a

group of about 10 others. Now living in New York City and working on an advanced degree at the Pratt Institute of Design, he told me the session had helped a group of designers move forward on a city project and said it had made a major impact on him. "Designers think they are pretty good problem solvers, but the process you used taught us how to problem solve way beyond what we thought we knew," he said. "Designers seem to have their own special way of solving problems but can't put it into words. The process we used helped make design thinking more explicit and took it to a higher level".

Now, the term "design thinking" was new to me, but I was glad to come to understand it as a creative problem solving process like the process I have taught for many years rather than some kind of mystery for a select few. The process pulls together a person's analytical and imaginative thinking skills, and tries to simplify how to apply creativity at work. Along the way, I have come across a wide range tools, techniques, and philosophies offered analytically trained people to perform more creatively. They have different names and are described in a variety of ways. This scattering appears to have made it confusing for people genuinely seeking the skills that will help them distinguish themselves in today's rapidly changing business world.

In this chapter, I hope to simplify and explain the concepts that underlie the process of creativity, to help managers who may be struggling to transition from the "old way" (sometimes called the "manufacturing economy") into the "new way" (sometimes called the "knowledge economy"). While the need for adaptability is rampant, skill in developing it is in scarce supply. By driving innovation in day to day work, , 21st century managers have an opportunity to accelerate their careers, "stand out among the rest" and differentiate themselves from their peers, most of whom are equipped with the same basic credentials. To do this, they need to

master a structured process which simplifies and enables creative thinking to drive innovative results. Developing skill in a process that combines imagination and ambiguity with analysis and certainty will provide them with the base for building adaptability within their organizations.

Balancing Efficiency and Adaptability

We live and work in an era of rapidly accelerating change with frequent discontinuities and interruptions. Many organizations that prospered during more stable times – times that rewarded routinized efficiency – now find themselves poorly adapted to today's new economic and social realities. Everywhere we look, traditional structures are abruptly being reshaped or falling down. Once successful companies are finding that their sure-hit formulas no longer work. Long revered icons of organizational excellence have been humbled, and even bailed out of bankruptcy and imminent demise by government intervention. Organizations whose main virtues during previous times were predictability and reliability are finding it difficult to adapt to this increasingly dynamic environment.

In previous decades, the role of the manager was to improve efficiency and maximize the next quarter's results. Those goals required routine based, analytical thinking and decision making – skills widely taught in most business and engineering schools and universities, and rewarded and reinforced in most organizations. But while still valuable, an organization's efficiency is now recognized as only one half of the formula for success in today's shifting economy. The other half of the success formula demands that organizations develop adaptability skills (Mott, 1972; Dolata, 2013; Basadur, Gelade, & Basadur, 2013, in press).

Efficiency means perfecting routines in order to attain the highest quantity and quality for the lowest possible cost. On the other hand, adaptability means continually and intentionally

changing routines and finding new things to do and innovative ways to do current work. Adaptability means scanning the environment (Simon, 1977) to anticipate new problems, trends, customer needs, opportunities, then deliberately changing methods in order to attain new levels of quantity, quality, and cost and new innovative methods, products and services. To develop adaptability and build competitive edge, managers must expand their thinking to include non-routine based, imaginative creative thinking and problem solving skills.

After providing Barry with some training in Simplexity Thinking, I visited him in New York City and spoke to senior partners at the advertising and communications firm where he worked. They told me that their clients were increasingly uncertain about how to continue to grow their businesses. "In the old days, General Motors would come to us and say, 'Here is what we want, go do it. Run some focus groups and send us the results'. But nowadays, they often ask us what they should be doing. Our people are having trouble coping. They used to be able solve problems well. But nowadays, no one gives them a problem. More often are customers are looking for help in discovering the right problems to solve."

The firm had discovered that solution formulation was no longer the name of the game. Instead problem formulation – made up of problem finding and problem definition – was the key skill set in their workplace. They also discovered that problem formulation skills can be improved through training, and through the use of a clear, delineated process and helpful tools.

The importance of problem finding is becoming more widely recognized (Kabanoff and Rossiter, 1994; Short, Ketchen Jr, Shook, & Ireland, 2010). Circumstances are changing, including all kinds of technology advances, while people are changing in terms of demographic trends, education levels and connectedness to others. Innovative new products and services are required – and quickly – to stay ahead. Top companies are discovering that innovation begins

with problem finding—discovering customers' (and potential customers') problems ahead of the customers themselves, then providing solutions in the form of new products and services (Basadur, 1992). Problem finding, which is the first step in innovation, begins with listening to your customers asking the right questions. The most important parts are not the answers, but the right imaginative questions. Beginning with the imaginative questions: "How might we? How might our customer?" Exciting challenges can be found when companies ask themselves questions like, "Why might we? Why might our customer want to? What might be stopping us? What might be stopping our customer from?"

Toshiba Corporation told me, "When we hire new scientists and engineers, we keep them out of R&D for two years. Instead, we place them into the sales department to begin their careers. We want them to learn that their job is to learn the problems of the customer. We want them to know we are not going to hand them problems to solve. We want them to know that innovation begins with finding problems to solve." In innovative companies, the word problem is synonymous with need, challenge, want, desire, opportunity, puzzle, change, trend, observation and many other triggering terms.

The Process of Innovation

Innovation is a process, not an event or an outcome (Basadur & Gelade, 2006). It is a process of finding and defining internal and external customer needs, developing solutions to address those needs, and successfully implementing those solutions. The needs – or problems to be solved – can be found across a broad spectrum of areas, including, but not limited to technology, products, markets, packaging, design, manufacturing processes, new business models, and new ways to go-to-market. The innovation process and the mental skills that make it work can be learned and become a daily habit that results in ongoing creative disruption and

problem solving (Basadur, Graen, & Green, 1982). Everyone can take part in this innovation process. Once learned and understood, it can be used in every department and by people at every level of an organization (Basadur, 2013).

In an Executive MBA course I teach, I help my student managers discover that they must internalize the process of creative problem solving. It must become part of everything they do every day; part of their vision of the world. Afterwards, the students emerge very changed, and say, "This should not be an elective course; this should be the first course everyone takes in business schools. It teaches us *how* to think, not *what* to think. It is the basic learning in the process of management. All the other courses are a bunch of content subjects that teach us what to know (finance, accounting etc.) and can be taken later and fit into the process. These subjects are important to know, but need to fit into a process of creative thinking and problem solving that guides all of our activity."

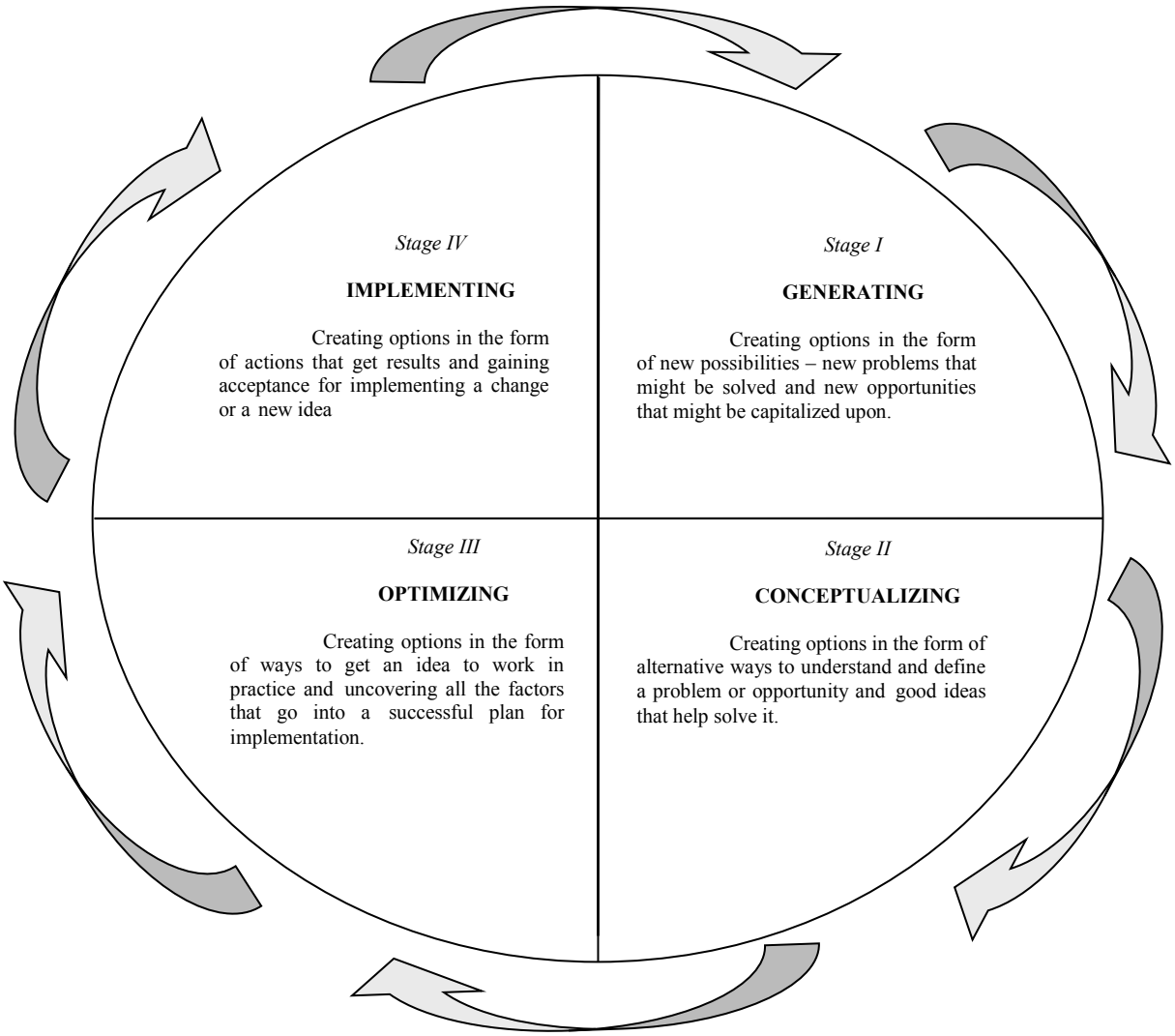
It is essential for all of us to recognize the importance of a creativity process to help us navigate our way to prosperity in a very turbulent world. While managing and improving efficiency is still an important skill, it is only one side of building a successful organization in a shifting economy. Today's managers must also expand their thinking to include the imaginative creative problem solving that builds organizational adaptability (Basadur, Basadur, & Licina, 2013).

We've traditionally explained creative problem solving as a continuous and circular four stage process that begins with the deliberate seeking out (generating) of new problems and opportunities. The second stage of the process is conceptualizing, which involves formulating, defining, framing and constructing a newly generated problem. In the third stage, problem solving, evaluation and selection of solution ideas takes place, while the fourth stage results in

solution implementation. The process then begins anew, as every implemented solution (action) results in the opportunity to discover (generate) new problems and opportunities (Basadur, Basadur, & Licina, 2013; Basadur & Gelade, 2003.

Figure 1

The Four Stages of the Simplexity Thinking Process



While the first two stages of the Simplexity process tend to be more imaginative, and the last two stages more analytical, the ability to think up options (diverge) and the ability to evaluate options (converge) is used in *all* stages. Skilful use of the process draws upon a variety of kinds of knowledge, disciplines and expertise.

However, Barry's observation about the relationship between Simplexity Thinking and Design Thinking led me to consider other ways the process could be described. Some time ago, psychologist William J.J.Gordon suggested that inventing and learning are opposite forces which feed each other in turn (Gordon , 1956; 1971). Inventing is characterized as a process of breaking old connections. Learning is characterized as a process of making new connections stick. When we invent, we "make the familiar strange" (by breaking old connections which compromise current understanding). This permits us to view old phenomena in new ways, although this can be uncomfortable at first. When we learn, we "make the strange familiar" (by making new connections between new (and thus strange) phenomena and our current understanding. This permits us to view new phenomena more comfortably.

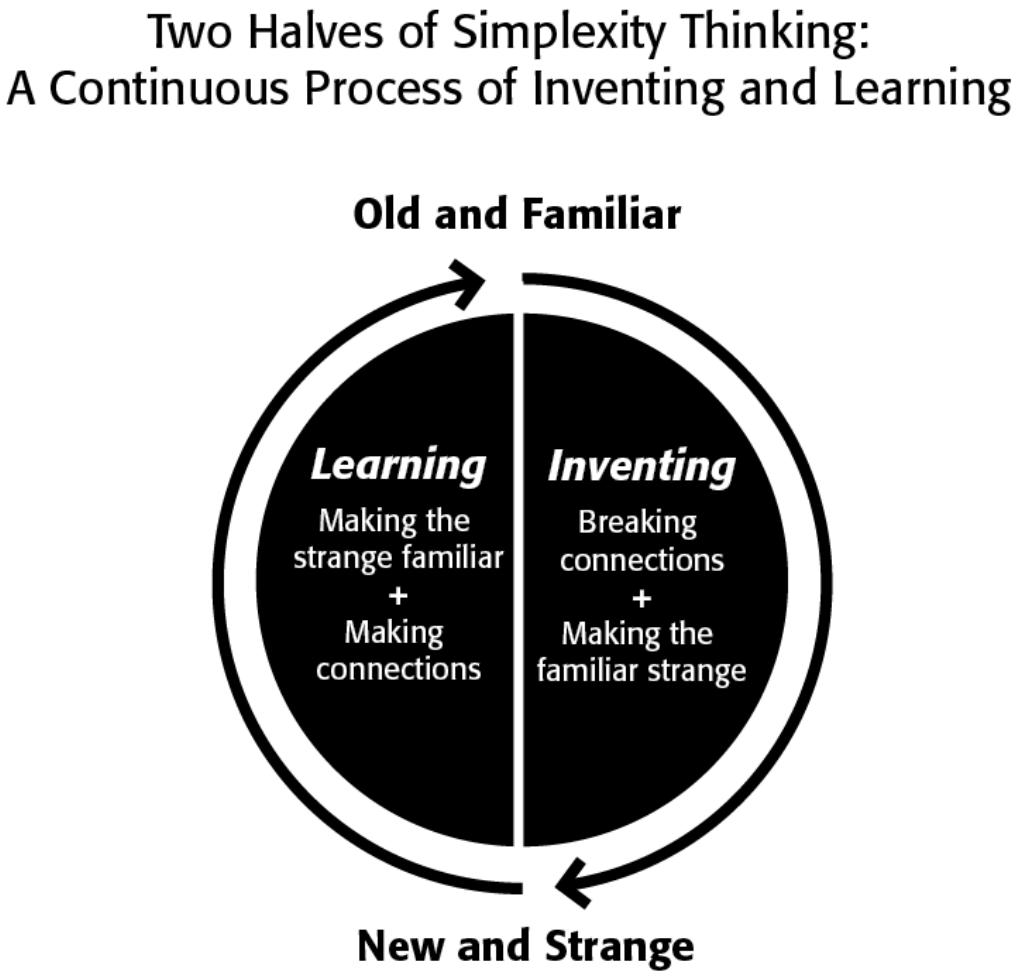
In the circular depiction below, the problem solving process is viewed through this perspective. On the left side, new "paradigms" (ways of thinking and doing) become established. New processes are learned and become well-known and comfortable habits. On the right side, such old established paradigms are broken. New processes that produce better quality or new goods or services are invented to replace previous processes. When an old familiar paradigm such as a well-established business process is broken, the new one replacing it feels very strange and uncomfortable to everyone affected. They are experiencing a process of unlearning, breaking connections with past understanding and letting go of old habits and beliefs.

As time goes on, the new process becomes less strange, and more familiar. This is a learning process – making new connections and adopting new habits and beliefs.

This cyclical process can also be viewed as representing the 'operating' versus 'inventing' sides of the modern business world. As new 'inventing,' or pattern breaking activity occurs, old and familiar processes are transformed into new and unknown activity. As we travel around the ongoing circle, those new patterns are converted into new familiar processes, and readied for additional transformation.

However we name or describe this ongoing process, it is the basis of adaptability and innovation, and must be adopted as an everyday part of organizational life.

Figure 2



For individuals, internalizing the two sided process of innovation will result in a new circular pattern of thinking and behavior that will be evident as different, effective and innovative. The process will develop skills in seeking new opportunities for change (no matter how disruptive they may seem at first) defining and clearly understanding those opportunities, allowing new ideas to emerge and flow through the necessary steps of evaluation, analysis, testing and optimization until new solutions (products, services, or procedures) are created and step-by-step plans for implementation are developed and undertaken.

This process is not about coping with change. It is about *making change*. There is huge difference. *Change making* is real leadership in our new world. It is the game changer. Change is not something to be feared and imposed on people; change should be the result of proactive involvement of people in making new and valuable things happen to keep in the forefront, ahead of the rest. The beautiful thing is that our research has clearly demonstrated that when people are involved in creating change, they become motivated in all of their work (Basadur, 1992; Graen, 2014).

Organizations that recognize the value of breaking old and out-dated paradigms and replacing them with new and better ones, and actually know how to do so are what I describe as 'thinking organizations'. A thinking organization can both unlearn and invent. It is proficient in efficiency thinking (perfecting current routines), adaptability thinking (breaking old routines and creating brand new ones) and flexibility thinking (operating effectively when there are no routines to follow in ambiguous, unexpected circumstances). Thinking organizations engage the innovative abilities and creative aptitudes of all of their employees. (See Hazy & Backstrőm's chapter.)

Unfortunately, few organizations have the skills or expertise to do this, often because they lack a framework for sustained and disciplined creative thinking. By adopting a structured innovation process, organizations can learn to think creatively in a collective, synchronized way, not only to improve routine work (efficiency) but also for the non-routine work of adaptability (See Basadur & Basadur 2011, and Graen's chapter).

Solving Real Life Problems

Creative problem solving begins with problem finding, then moves into problem definition. This where "out-of-the-box" thinking is most likely to emerge, resulting in an

unexpected twist or angle that leads to even more unique solutions for evaluation and optimization. When implementation of a new solution or product occurs, the process begins anew in a circular fashion, as the change that was made will inevitably alter things, (disturb the status quo) and result in new problems to be discovered. For example, the automobile's invention provided not only a new solution to an old problem (improving transportation) but created many new problems (e.g., infrastructure, pollution, energy and accidents).

Our traditional organizational approach to problem solving has tended to discourage an open-minded attitude. We are taught solutions or formulas we are to deliver when certain problems are encountered. Discovering how to abandon these habits is a challenge we all face in attempting to become more creative. For me, a turning point came in 1971, when I was asked to help a group of R&D chemists deal with a problem they were grappling with. I began by helping them leave what they knew and move onto creatively defining what they were trying to do, exploring the right questions to pursue, creating option al challenges beginning with the phrase "How might we?" and most of all, stay out of solutions. The challenges were then related to each other through the creation of a visual map that asked, "Why might we want to…?" and "What might be stopping us from…?" The group found this activity extremely helpful, with several new and unexpected insights emerging as challenges were reframed. I was amazed to see how new this type of thinking was for them. They were clearly unfamiliar with the key role problem formulation plays in the creative process (Basadur, 1995).

As word of my work spread, I was involved in many similarly and equally enlightening situations. I was asked to sit in a with a struggling product development team to observe and provide feedback on how they worked together. During their conversation, I heard the phrase, "I wonder what Andy really wants?" Who was Andy? It was the team's boss, sitting just up the

hall with his door wide open. Why wouldn't someone just go and ask him? Because it had been three months since Andy had handed the project to the team: "Come up with another liquid cleaner". The company was already successfully selling two liquid cleaners, and the team seemed to realize it wasn't really sure what they were trying to do or why. Of course, no one wanted to appear stupid by telling Andy they had spent three months without making any progress. I then led the team through the creative problem solving process, beginning with problem finding, which we also sometimes call the 'fuzzy situation'. In this first step, we are either looking for a new problem or we have found ourselves in a situation which is ill-structured, ambiguous and undefined. Such a problem is sometimes found simply by being there or having a problem handed to us. If we are creative, we know enough not to assume that we already know what the problem is. Instead, the process calls for us to defer judgment and put our effort into moving from a fuzzy situation to a clearly understood statement (or family of statements) beginning with the challenge, "How might we …?" In this case, a key unknown fact that emerged was that Andy came to them three months ago after meeting with his own boss over lunch and gave them the third liquid cleaner project. What the group did not know was that at lunch Andy's boss had said, "We need to boost profits," and mused, "Perhaps we should add another liquid cleaner to the two we already have." Later, the boss did not even remember the casual conversation which Andy had taken as serious direction. When I led the team through the Why might we want to? and What's stopping us from? analysis, they reformulated the challenge to, "How might we create a new product that somehow keeps households cleaner?" When shared with Andy, the new challenge was heartily accepted as a major move forward.

Another insightful discovery about how people think or do not think creatively also occurred early in my career at Procter & Gamble. I was asked for help by a product

development team that was formed at short notice in response to a competitor's new product. Colgate's green-striped Irish Spring was the first striped soap bar introduced to North America. With its aggressive advertising campaign emphasizing 'refreshment,' the soap was finding ready consumer acceptance. One of the rules at Procter & Gamble was that if we were the second entrant into a new market, a new product's competitive advantage had to be demonstrated prior to market testing. When I asked the team what was going wrong, they said that they had been unable to produce a green-striped bar that was preferred over Irish Spring in a consumer preference blind test. The team had experimented with several green-striped bars, all of which merely equaled Irish Spring in blind testing. It became evident to me that the team had chosen to define its problem as, 'How might we make a green-striped bar that consumers will prefer over Irish Spring?'

Applying the creative problem solving process to the problem began with developing alternative ways to frame the challenge. By repeatedly asking why might we want to make a green-striped bar that consumers would prefer over Irish Spring, we generated many alternative How might we? challenges. The flash of inspiration came from the answer: 'We want to make people feel more refreshed.' This led to the new challenge: 'How might we better connote refreshment in a soap bar? This less restrictive challenge, which included no mention of green stripes, gave us more room for creative solutions.

About 200 solution ideas for refreshment ideas were quickly diverged. On evaluation, two ideas stood out. One was an image of sitting on a white sandy beach with blue sky, white clouds, and enjoying soothing, cooling breezes. The other was based on travel to the sea coast for refreshment. The eventual product result was a blue- and white- swirly bar with a unique odor

and shape, which quickly won a blind test over Irish Spring, then soon achieved market success under the brand name Coast (Figure 3).

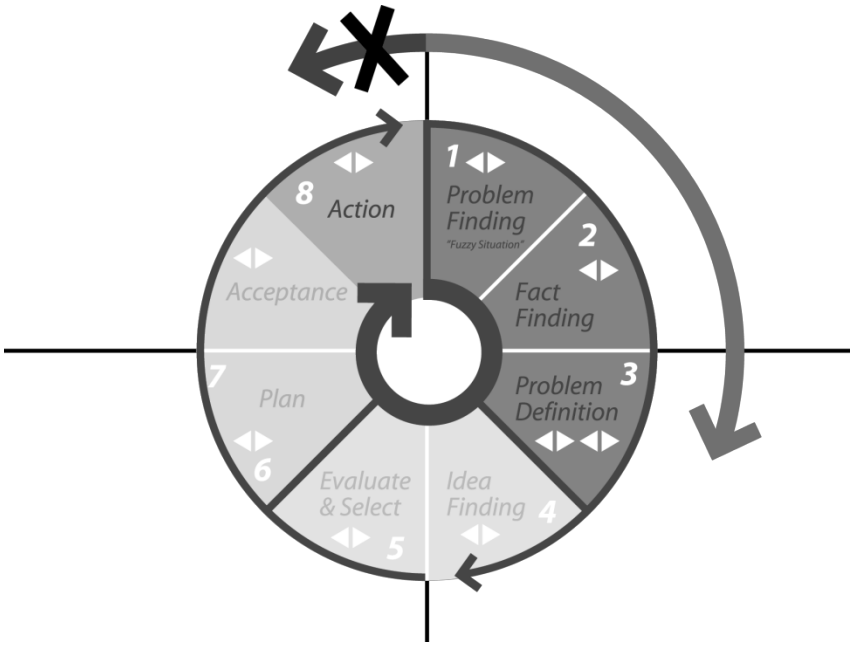
Figure 3

Solving this problem once it had been properly defined took the team mere hours. By leaping prematurely into solutions, the team had wasted almost six months before coming up with that problem definition. Many people and teams practice what we call “1 to 8” behavior. They skip the process and instead, jump directly from problem to possible solution, over and over again.

Successful problem solving requires people to begin the process with the recognition that they have a fuzzy situation and need to gather facts prior to defining the problem. Only after that is undertaken in a thorough fashion should they move on to exploring, evaluating and selecting

solution ideas; planning for implementation; and finally, taking action. The step-by-step process is detailed in Figure 4 below.

Figure 4



As these examples illustrate, the first half of the creative problem solving process is the *more* imaginative half. This is where questions and inquiry are raised, problems are surfaced, hidden facts are discovered, breakthrough challenges are defined, and innovative solution ideas are hatched. The back half of the process is where the solution ideas are analyzed against constraints, evaluated and developed into practical solutions to be tested, perhaps including prototypes or drawings with step-by-step plans to gain acceptance by those impacted by the change. The final step involves putting a solution into play, which requires overcoming the natural fear that comes with unfamiliarity and lack of certainty. (Naysayers will ask “How do you know it will work?”) The experience gained becomes a new learning experience that

launches a new round of innovation. The status quo is disrupted and new opportunities arise with new problems to solve.

Fear of being wrong causes other weaknesses in managing. It prevents important facts and challenges from coming out, which can result in the creation of solutions that are not on target and lack commitment to implement. I was once asked to facilitate a team that had been struggling for over a year to improve the efficiency of its potato chip shipments. The problem was that, on average, the trucks were travelling half full. Some key facts emerged during the fact finding step of our process. One was that an outside vendor had proposed a new way of loading the trucks which would fill them completely and result in an annual savings of $12 million. Another fact was that the team had been conducting tests across the country to check if chip breakage would be negatively affected by the new method. When I inquired about the findings, the team said results were inconsistent and they were now conducting additional tests. As well, the Market Research department had stepped in to study if there might be an optimum level of chip breakage that users might prefer, and were also getting inconclusive results. Which led them to run more tests? Everyone seemed to be going around in circles, in danger of running tests endlessly. To help the team focus and move forward, I engaged the members in using their creativity in problem definition using what's stopping analysis. On a flip chart pad, I wrote the challenge "How might we write a recommendation to management by 3 PM today to approve the new loading technique?" The first answer to the "What might be stopping us?" question was that the breakage testing was not complete. The second answer was similar: they were not yet sure about the optimal chip breakage level for consumers. I noted these two challenges, then asked the question a third time. (This is how the process works. In every step, we push divergently to expand our thinking.) We waited and waited. It was painful. Someone finally said: "I think we

are afraid to make a recommendation without being completely sure. We do not want to be wrong in front of management." This new fact, which had never before been clearly stated, led to a new third challenge: "How might we write the recommendation for change in a way that will explain the risk and ask management to take the risk with us?" The team selected this challenge and wrote the recommendation well ahead of 3 PM. It was immediately approved the next morning, with $12 million accruing to the bottom line. The team never thought that such an emotional fact would be legitimate to bring up in their work. In real world creative problem solving, fears and other emotions are critical facts to bring forward. Without acknowledgement of the human element present in all circumstances, proposed solutions are simply hypothetical exercises unlikely to result in success.

These examples serve to emphasize how crucial the problem definition step of the creative problem solving process is. Success in this stage often relies on our ability to overcome the habit of prematurely jumping to answers and solutions, and sometimes requires us to dig up hidden facts or admit to challenges people are unaware of or fearful of saying (Basadur, 1994*)*. The transformative shift into a questioning mindset, which is accomplished by asking "how might we?" and "how might the customer?" is a reverse shift from what most people have been taught in schooling and culturally. This art of asking the right questions underlies the empathy and simplicity skills required in every stage of this process.

Leaders Build Adaptability and Creativity

Adaptability is a continuous change making process. In recent field research, top CEOs were asked for their thoughts on what good leadership was in the 21st century. Resoundingly, they first defined leadership as driving change, and focused on the key requirement of adopting a process to make change happen. They also identified the importance of developing that skill in

others below them.[1] (Graen, in his chapter suggests new methods to manage these leadership tasks.)

No matter the industry or economic environment, effective leaders lead others to achieve adaptability as a way of life. This means the organization and its people continuously find and define important problems, solve them, and implement valuable solutions. These problems may be strategic -- defining a new vision or mission, establishing high-level goals, finding new directions to pursue or exploring new markets to enter -- or they may be tactical, such as finding, solving and implementing opportunities for new products and technologies or for speeding up procedures. Effective leaders lead others to proactively sense, surface, discover, identify and define such problems and push toward implementation of solutions. By doing this continuously and by involving others, they lead their organizations or teams to make adaptability a way of life.

In order to lead people through this process in a synchronized fashion, leaders must learn to become process leaders rather than subject matter experts (Basadur, 2004). Simply defined, content is what we do, and process is how we do it. To leverage the thinking skills of employees, leaders need to engage them in the process of learning to think innovatively, rather than telling them what to do. This is called leading by being "the guide on the side" instead of the "sage on the stage". (Grace's chapter suggests methods to achieve such peer coaching.)

When leaders focus on continuously finding and solving important problems, they concentrate on process. Leaders who focus all of their attention on content typically solve the wrong problems. Understanding the crucial difference between content and process allows

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[1] Jeff Immelt, CEO of General Electric, initially made these observations during the CEO roundtable at the first Global Conference of the Procter and Gamble Alumni Association in 2003. His sentiments were echoed by others participating in the discussion. The importance of the point was immediately evident to me, and I've reiterated it in numerous papers (Basadur, 2004; Vincent, Stoyko, Henning and McCaughey, 2006) and presentations in the years since.

leaders to involve others in the creative process in a way that will maximize the use of their content expertise and uncommon sense.

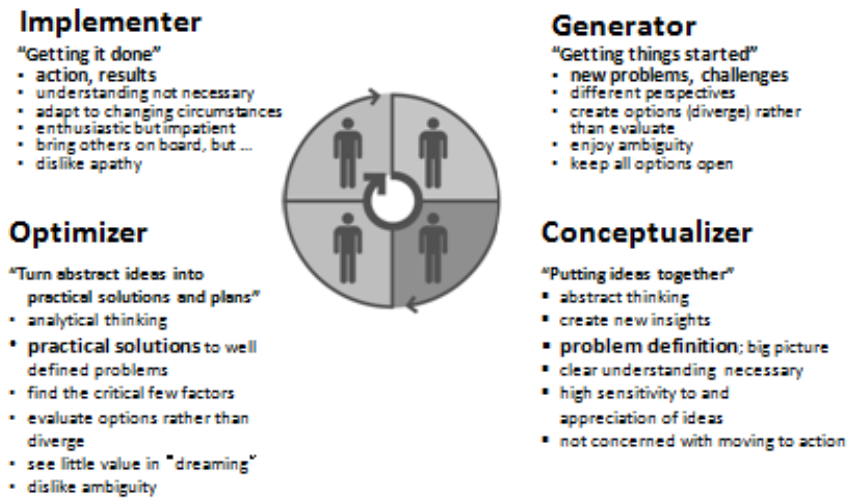
Building Capability by Understanding Preferences

As discussed earlier, Simplexity Thinking is a continuous circular creative problem solving process that begins with the deliberate seeking out (generating) of new problems and opportunities. The second stage of the process is conceptualizing, or formulating, defining, and constructing a newly generated problem. In the third stage, problem solving, evaluation and selection of solution ideas takes place, while the fourth stage results in solution implementation. The process then begins anew, as every implemented solution (action) results in the opportunity to discover (generate) new problems and opportunities.

While effective innovation requires strong performance in each of the four stages of the creativity process, our research has found that individuals, teams and organizations may prefer some stages of the creative process more than others. We call these preferences styles and suggest effective leaders must learn to synchronize the different creativity styles. In teams, for example, the members must learn to combine their individual preferences and skills in complementary ways. Our previous research found that teams composed of members with a diverse range of preferences performed better than teams made up of members with similar preferences, but had less enjoyment working together (Basadur & Head, 2001).

While most people enjoy some stages more than other stages, it is typical to see preferences that combine or blend styles. It is also common for people to prefer one style in particular, but also have secondary preferences for one or two adjacent styles. An individual's unique creative problem solving style blend shows only their preferred activities within the creative process. These activities are illustrated in Figure 5.

Figure 5



No single style is to be considered any more 'creative' than any other. Skills are needed to execute all stages. All four stages of the process require creativity of different kinds and contribute uniquely to the overall innovative process and innovative results. Successful leaders will recognize and communicate the key message that everyone has a different but equally valuable creative contribution to make to the innovation process. By allowing employees to capitalize on their preferred orientation, leaders can make work more satisfying, as well as pinpoint individual development opportunities.

By tapping resources in all four styles, leaders can also help a team or the organization to cycle skillfully through the full innovation process. Skilful synchronization of the preferred creative styles and activities (shown in Figure 5) of interdepartmental and interdisciplinary team members is particularly important.

Table 1. Occupations Ranked by Occurrence of CPSP Style

Rank	Generators	Conceptualizers	Optimizers	Implementers
1	School Teacher	Organization Dev.	Engineering/Eng. Design	IT Operations
2	Academic	Strategic Planning	Mfg Engineering	Customer Relations
3	Artistic	Market Research	Finance	Secretarial/Admin
4	Non-Profit/University Admin.	Design	IT Systems Developer	Project Mgr.
5	Training	R&D	IT Prog/Analyst	Sales
6	Marketing	Artistic	Accounting	Purchasing
7	Design	Product Dev.	Strategic Planning	Mfg. Prods.
8	Health Mgmt. Exec.	IT Sr. Consultant	Tech. Customer Support	Logistics
9	Advertising Mgr.	Academic	Social/Health Services	Operations

As Table 1 shows, the highest ranking Implementer style jobs include IT Operations, Customer Relations, Secretarial/Administrative Support, Project Manager, and Sales. From the handling of customer complaints to the need to minimize IT downtime, these positions all demand short term problem solving activities and quick delivery of results. The highest ranking Optimizer style jobs are Engineering/Engineering Design, Manufacturing Engineering, Finance, IT Systems Developer, and IT Programmer /Analyst. In each of these positions, practical, precise, and detail-oriented plans, processes and solutions are sought. The occupations that contain the five highest proportions of Conceptualizers are Organization Development, Strategic Planning, Market Research, Design, and Research and Development. These are all jobs in which understanding and problem definition are vital. Organizational, employee and customer needs must be defined so that new products, services, structures, and strategies for future growth can be designed.

Among the occupations that contain the highest proportions of Generators are Training, Marketing, Design, and Advertising. They require exploring new areas of inquiry; initiating new projects; seeking change and imagining possibilities for improvement, innovation and future growth. Marketing and Advertising are centered on initiating new projects and finding new ways to build interest among customers and capitalize on new trends and opportunities sensed in the environment. Designers initiate change by offering imaginative ways to communicate and stimulate interest in new ideas. Interestingly, people who describe themselves as designers first prefer conceptualization (Stage 2) and secondarily generation (Stage 1). Other generator styles, including School Teacher, Academic, and Artist, are not prominent in industrial organizations. For these jobs, generator activities would suggest student development, music, art, writing, academic programs and research possibilities.

Conclusion

The successful leaders of the 21st century will be those who can coach their organizations and teams to make proactive adaptability a standard way of life (see Graen's chapter for example). This is more challenging than leading for efficiency, because it requires skills in coaching others to think innovatively –to continuously discover new disruptive problems and implement solutions. Getting people to think innovatively together requires a leader capable of protecting the divergent thinking of others. This includes building skills in being a coach-- not simply a content expert – to help people move through the four different stages of the creative process. Mixing and matching different stages of the process and appreciating different ways of understanding things and utilizing such understanding is especially important in leading interdisciplinary or interfunctional teams, as various people in different kinds of jobs favor different stages of the creative process. Top leaders may also find organizational innovation and adaptability is strengthened when employees who prefer the generator style are recruited, motivated, rewarded and retained within their organizations. (Graen, 2014)

For both organizations and individuals, successful and permanent adoption of an innovative mindset requires a permanent change in behavior, attitude and thinking. While organizational tools and techniques abound, most are well-intentioned concepts that are quickly cast aside. I predict that applied creativity – the process of finding, defining and solving important, complex problems, then implementing creative solutions – will result in the real and lasting organizational changes needed for success in today's business environment.

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