Ongoing Discussion "Thought Piece"

Prepared by

Peter Stonefield
peter@slgllc.com

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Ongoing Discussion Host: Bill Bellows
(william.j.bellows@boeing.com)
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"Light in a Bent Tunnel"
The Creative Process in Innovation and Organizational Development
By Peter Stonefield BSEE, PhD.

Dangerous minds are at work. Everywhere you turn innovators are breaking down conceptual and organizational boundaries in information technology, communications, science, media, politics, business, medicine and education and synthesizing new solutions and technologies in what many are beginning to dub the "Creative Economy". Virtually everything, work, education, politics, culture, right down to how we think and our very identities will be affected. Nothing will be spared. Most people are in some form of denial or are so focused on executing current strategies they don't look up and around to see what is happening. To remain viable in the emerging "Creative Economy" we must evolve to become more creative and adaptive.

Innovators not only create better mousetraps, products, services or processes, they change the way people think in a given context. Look at how "Post Its" have changed the way we think about making notes, how has email changed the way we communicate? How have online search engines altered the way we think about research? If we surveyed IT managers 15 years ago and asked them, what would increase their satisfaction, they wouldn't have said, I want a programming suite that will enable me to build an application once and run it in any operating environment. They probably would have desired higher performing hardware and fewer bugs in the software. Innovators at Sun tore apart the relationship of applications to operating systems and networks and created JAVA, Sun's "build once, run anywhere" programming language.

Most innovations don't just incrementally improve things they are disruptive. They fundamentally alter markets, methods and processes. In doing so, they establish preemptive leadership in a particular domain, market or context. In a competitive context, innovations create waves that others must catch or adapt to.

Creative Ideas
Most profound innovations start with a creative idea or insight. Most people, describe the creative process as working on a problem, perhaps analytically at first trying to find a solution that 'fits'. After some time and perhaps a little frustration, we "let go" of working on the problem consciously and do something else. Later, while in the shower, walking on the beach, just waking up, or at some other "creative time," the AHA! comes to us. Often we ask ourselves, "Why didn't I think of that earlier?"

Here are some other ways people from all walks of life have described their insights or Aha! experiences. "Suddenly, in times of quiet a flash appears and it all came clear." "I play around with ideas until force in me takes over and finishes it better than I could have." "Whenever I can't figure it out, I relax and wait for a flash."

Physicist, Joao Magueijo writes "On a rainy winter morning a few years back, I was brooding about some of the most nagging problems of cosmology. As I walked across an athletic field at Cambridge University, the answer seemed to drop from the sky. Just allow light to travel much faster in the first fraction of a second after the big bang--quadrillions upon quadrillions of times faster--and the problems would be solved." In a flash Einstein's long established theory about the constancy of the speed of light was potentially disrupted.

In a speech in 1890, Friedrich Kekulé described his 1864 insight into the closed structure of the benzene molecule as follows: "There I sat, trying to work on my textbook but it did not go very well. I turned the chair toward the fireplace and dozed off. As I woke up atoms were gamboling before my eyes. This time the smaller groups kept modestly in the background. My mental eye rendered more acute by repeated visions of this kind, I could now distinguish larger structures, of manifold conformation; long rows, sometimes more closely fitted together, all twisting in snake like motion. But look! What was that? One of the snakes had seized a hold of its tail and whirled mockingly before my eyes. As if by a flash of lightning I awoke. I spent the rest of the night working out the consequences of the hypothesis." The image led him to the concept of atoms linked in a ring-shaped molecule. At the time, most chemists thought that the structure of molecules was unknowable.
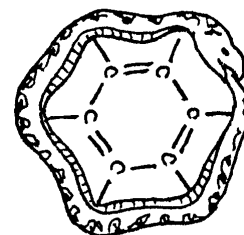
Noted geneticist, Barbara McClintock, describes her Aha! moments as follows: "When you suddenly see the problem, something happens that you have the answer—before you are able to put it into words. It is all done subconsciously. This has happened too many times to me, and I know when to take it seriously. I'm so absolutely sure."

French mathematician, Henri Poincaré, described his insight this way "For fifteen days I strove to prove that there could not be any functions like those Fuchsian functions. Every day I seated myself at my work table, stayed an hour or two, tried a great number of combinations and reached no results. One evening, contrary to my custom, I drank black coffee, went to bed, and could not sleep. Ideas rose in crowds; I felt them collide until pairs interlocked, so to speak, making a stable combination. By the next morning I had established the existence of a class of Fuchsian or automorphic functions. I had only to write out the results, which took but a few hours." His biographical notes on planetmath.org include the following "Poincare's work habits have been compared to a bee flying from flower to flower. Poincaré was interested in the way his mind worked, he studied his habits. He gave a talk about his observations in 1908 at the Institute of General Psychology in Paris. He linked his way of thinking to how he made several discoveries. He believed that the subconscious would continue working on the problem while he worked on another problem. His method of thinking: He neglected details and jumped from idea to idea, the facts gathered from each idea would then come together and solve the problem."
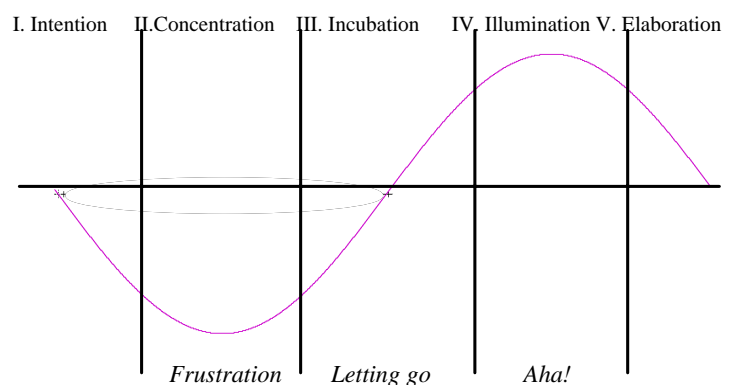
My own introduction to creative thinking began in 1978 while I was earning my doctorate in Psychology. One of the core courses was titled "Cognitive and Creative Process." For homework we spent 30 minutes a day observing our thinking process followed by 10 minutes of thinking about our thinking. We thought about the idea of "understanding" everyday for several weeks, then "organization" etc. The aim was to self-discover and describe our mental processes particularly when penetrating an idea or concept, problem solving, counseling or when we had creative ideas or insights. We also discovered how to enhance creative thinking by learning how to establish and sustain a point of "creative mental tension." There was also considerable emphasis on discerning the many different levels of thought from concrete black and white thinking to abstract reasoning and intuition. In one of my thinking sessions, I had an epiphany about levels of thought and computers. It dawned on me that over time computers would perform more and more of the concrete, calculating work performed by humans. The

purpose of computers was to free up lower levels of thought enabling people to think and reason more abstractly, solve bigger systemic problems and be more creative. Here we are twenty years later with a mind boggling array of "intelligent devices", systems thinking in an emerging "Creative Economy."

Creative Process

Many people have tried to make a model of the creative process. Hermann Helmholtz, a German physicist, was one of the first to describe the creative process as three stages: *saturation, incubation* and *illumination*. Henri Poincaré in 1908 added a fourth stage *verification* and Jacob Getzels, an American psychologist identified a preliminary stage of *formulation.*

My model has five stages and uses the sine wave as a metaphor to capture the emotional dimension. I postulate that *intention* and *purpose* are essential to the creative process. Wanting to solve an intellectual challenge or problem in our personal lives is the starting point. With *intention* we begin to *concentrate* on understanding and formulating the problem and on finding a solution that fits. It is like trying to put the pieces of a puzzle together, arranging the various mental elements into a solution. After considerable unsuccessful efforts we often begin to feel blocked or frustrated. At some point, we *let go* or step back from working on it consciously. We place it on the "back burner" and focus our attention on something else. We turn it over to our subconscious mind and let it *incubate*. In the *incubation* phase our unconscious continues to work on the problem arranging the various mental elements into a new arrangement that fits.

I. Intention   II.Concentration   III. Incubation   IV. Illumination V. Elaboration

Frustration   *Letting go*   *Aha!*

Some suggest that the various elements interact and finally, through statistical probability, arrive at an arrangement that fits the problem. Another way of understanding it is through the analogy of an energy field --something acting simultaneously on all the elements in the field in a way that aligns them into a pattern reflecting the source of the energy field. For instance, a magnet creates a simple energy field. When iron filings are exposed to a magnetic field, energy from the magnet is transferred to the iron filings, "exciting" them, overcoming their inertia and enabling them to interact. As the magnet moves closer, the particles suddenly and spontaneously organize themselves into a pattern similar to the "charge" in the magnet. In the creative process, I think our *purpose / intention* at least energizes and perhaps shapes the "charge" in the energy field that operates on the mental elements, culminating in *illumination*. Harvard researcher D.N. Perkins wrote, "Purpose is what organizes the various means of the mind to creative ends." This magnetic concept is not too far-fetched considering that most of the higher organs of the body--brain, heart, etc.--function as energy fields. You can imagine the smile I had when I heard a VP of Sun Microsystems describe Sun's development of JAVA as "Scott McNealy (Sun CEO) lifting a magnet up and within months we had JAVA." The

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Aha! experience is typically followed by a period of *elaboration* during which the idea is "filled out" to include possibilities, proofs and ways to implement.

Thinking Receptively
Critical to understanding and facilitating our own cognitive creative process is recognizing the fundamental difference in the way we think when we experience the Aha! and all other phases of the process. During the *illumination* phase the idea "comes to us"; we do not reason or figure it out we are thinking receptively. The idea breaks through our ordinary conscious reasoning or reflective thinking and comes into our consciousness with enough power to energize our feelings and bring a 'gut feeling' of rightness. By learning how to deliberately think 'receptively' it is possible to be creative on demand. My experience over the past 25 years with thousands of people leaves no doubt in my mind that the creative process can be deliberately facilitated with excellent results. I started testing this hypothesis in my counseling/coaching practice in 1980. Just before each of my clients came to my office I would connect with my purpose, their personal growth and development, and then saturate my mind with everything I knew about them. Then I would use a technique to think receptively and wait for an idea or image to come to me. As soon as it did, I would make a note and let it go. About 70 % of the time, over a period of 9 months, the client would either present a problem, challenge or goal that directly related to the idea or image, or it would surface during the course of the session.

To test the hypothesis further, I began teaching people techniques to think 'receptively' and tap their creative subconscious mind on demand. What I discovered is that most can learn how to think receptively on demand rather quickly. Using these techniques, the Aha! comes in the form of a symbolic image or metaphor. The image or idea typically suggests a solution direction rather than a specific solution. It is like seeing "light in a bent tunnel". We know roughly where the light is, although we can't see the source. A scientist from Dow Chemicals Western Area Science and Technology Labs got an image of an eagle's talon clutching a molecule and flying overhead. He interpreted it as needing to keep a particular molecule stable as it went through a process. Within an hour or two he formulated several strategies, one of which proved successful. A Sun Marketing Executive got an image of a flashlight on the ground near a crack in a wall. He picked up the flashlight turned it on and pointed it inside the crack. To his utter amazement he saw ants trying to exploit the crack. He interpreted the ants as competitors trying to enter a particular market segment. The next day he initiated a business intelligence request and within two days had confirmation of his image. Two weeks later his team formulated and implemented an effective response.

If it is so easy, why is it so hard?
One of the major impediments to creative thinking can be our inner "Judge" or "Critic"- the voice at the edge of our consciousness that snap-judges ideas, us and others. Some of its familiar refrains are "That won't work", "That's stupid", "Its not good enough", "I'm doing it wrong", " I can't succeed", "I'm not creative", "That's not my area", "That's not logical", "Be practical", "You'll fail", "Don't be ambiguous", "Never be wrong" or "Follow the rules." Typically the "Judge" is negatively critical and seeks control, perfection or security. It frequently acts to "keep us in the box" and protect the currently held assumptions and world views. As such, it often operates as a closed system with its own logic. It can suppress the Aha! before it fully reaches consciousness.

The genesis of the "Judge" are the introjections of messages from parents, teachers and,

ironically, the process of learning grammar, math and other subjects that teach us to think logically. At some point in time in our development, the "Judge" was a self-organized "success strategy" in the context of learning right from wrong, etc. It organized part of our critical thinking faculty. When we encounter an idea that is outside of our current world view or logic bubble, it can be experienced as a form of cognitive dissonance or subjective threat to who we are, our sense of identity, evoking a stress response. Michael Polanyi states: "We incorporate into our bodies what we come to learn about the world, so we experience that knowledge as part of us." Lacking awareness and understanding of the response, the "Judge" acting as a defense mechanism often comes into play. However, the "Judge" when properly recognized, understood and expressed, can be utilized as an extraordinary ally in creativity. It sits in the cluster of critical faculties that can help discern boundaries to be broken, assess viability, and make incredible distinctions that lead to new creative ways of perceiving things. Remember, creativity is looking at the same patterns everyone else is but seeing something different.

Self-organizing Process

From a systems perspective the creative process is intimately related to the self-organizing change process. Where ever boundaries are broken or new synthesis are found there is emergence and self-organization occurring. The system could be a person, group, economy, culture or corporation made up of different parts. When parts of the system interact in new ways something new can emerge that did not exist before. The interactions between neurons produce a human brain capable of conscious thought even though the neurons are, so far as we know, not conscious. In human systems, the whole and the parts are best worked with together, since they constrain each other. Accordingly, I hold that self-organization involves the co-evolution of the parts with the whole in relation to the environment or context.

The self-organizing change process follows the same pattern as the classic creative process. In my model, the phases of the self-organizing change process are: *ending*, *incubation/dis-identification*, *new beginning* and *realization*. Self-organizing change typically begins when there is *trouble* or disequilibrium. Charles Darwin put it this way: "Change does not occur in a species until there is trouble: when oceans dried up, fins changed to legs. If a change proved effective, then the species was perpetuated." Something is *ending* the genesis of something new is stirring and soon will be "trying to happen." Nobel Prize winning biologist Albert Szent-Gyoergyi postulated: "There is a drive in all living matter to perfect itself."
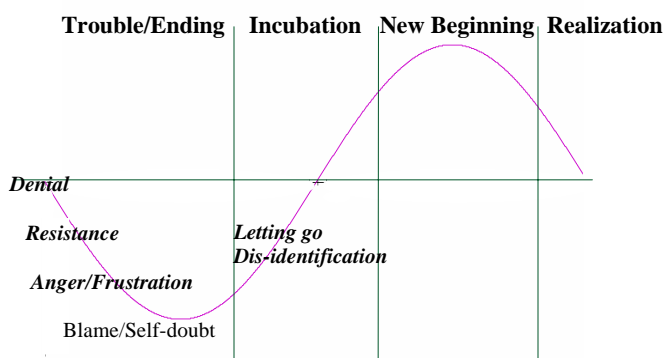
On an individual level, a change in the environment, an internal conflict, a knawing dissatisfaction or problem usually triggers some discomfort and reflection. It could be a promotion or the loss of a job, divorce or death of someone close. It might just appear as a vague feeling of dissatisfaction or "something missing." *Endings* trigger denial and other forms of resistance. We tend to resist change and cling to old familiar roles, attitudes, beliefs and "success strategies" because we remain identified with them. New attitudes, beliefs and behaviors that conflict with currently held ones are often perceived as "not me." Any direct

pressure to change our beliefs, values and behaviors from the outside-in will generally be experienced as an attack on who we are, generating even more entrenchment. Virtually all resistance to change are protections of old habitual "success strategies" or roles. Anyone over-identified as a "Commander" probably won't even be interested in patience, good listening and inquiry skills. These behaviors would likely be perceived as foreign and "not me". Even if they were interested, the "Commander" would likely take over and push just when they intended to be patient.

If an organization is identified with the "success strategy" of "bet the company on an innovation" they would probably resist efforts to improve quality by reducing variation outside of manufacturing. Innovators like novelty, variety and the freedom to be outside the box. They typically don't like processes that constrain their impulses to experiment and try new things. Many innovative companies fund multiple competing product development efforts targeted at the same problem.

Most resistance to change and virtually every crisis, every stuck place in our lives, are signals telling us: "Let go, we are over-identified with something that is now too small for us." Letting go, does not mean getting rid of. It is dis-identifying or stepping back from some attitude, role, belief or behavior. In the creative thinking process, "letting go" is consciously getting out of the problem and putting your attention on something else. In the creative self-organizing process it is getting outside the system. Russell Ackoff and others tell us that, "You can't see a system from inside it." We have to get "outside the box." Getting outside a system involves mentally dis-identifying or temporarily detaching from it, not necessarily leaving it. From this place you can observe it and begin to understand the system, especially the current dominant "success strategies." Letting go is the beginning of the *incubation/dis-identification* phase. It is the pivotal stage in the natural process of self-organization and the evolution of identity. Letting go provides the opening for change, the psychological space for "what is trying to happen", to emerge in the form of new interests, ideas or images-the seeds of new "success strategies" to emerge from our creative process and gain traction. Noted Psychologist, Carl Rogers describes the intimate relationship between change and creativity this way; "The mainspring of creativity appears to be man's tendency to actualize potentialities as the organism forms new relationships to the environment. …This tendency may become deeply buried and awaits only the proper conditions to be released and expressed."

The *incubation* phase is often described by one or more of the following experiences: a time of conflict, emptiness, uncertainty, lack of meaning, distraction and lowered engagement. The subconscious creative process is synthesizing inner promptings, conflicts, developmental history and environmental pressure into an idea or image of a new "success strategy". Inner promptings show up as needs, urges, drives, interests, ambitions and goals. Inner conflicts can show up as changes in the way parts are interacting. Developmental history includes the development and evolution of past "success strategies" and lessons learned. Environmental pressure appears as feedback, change (positive or negative) and cultural influences. The complexity involved is often beyond anything our reflective thinking processes can comprehend, let alone synthesize. The outcome of this subconscious creative process is a compelling new interest, search for meaning, value or seed image of our *new beginning*. Like a magnet or strange attractor, it begins to draw our attention to and organize what it needs to come into expression and establish a new "success strategy". When I moved from product design engineering to field engineering and sales the attractor was 'people in the field have

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more fun and freedom.' The change from the field to Marketing was propelled by 'opportunity and a desire to see a bigger picture and understand business.' The change from Marketing to Field Sales Management was driven by 'a desire to lead.' Moving from Field Sales Management to Psychology was propelled by 'a search for greater meaning and positive feedback.' What I didn't realize was that all this change was part of a bigger process of personal evolution where, for most of the first half of my life, I was preparing a vehicle of expression (my personality) for what I now perceive to be my purpose - facilitating the evolution of people and systems.

Once we identify with the new role, behavior or "success strategy" we begin the *realization* phase by consciously and concretely envisioning our next-step ideal model, formulating our implementation plan and experimenting with the new role, beliefs, values and behaviors. Eventually the new way of being and doing becomes just another habit.

Organizational Development
I have found this model to be an extremely valuable tool in co-evolving the organization (culture, strategy) and leadership development. The key is creating a context where the members of the organization can temporarily dis-identify or detach from the system they are imbedded in and open themselves to seeing it from a fresh perspective, one that transcends their current world view, assumptions and mental models. One fast way of getting people 'out of the box' is to guide them through a Self-organizing Inquiry. It is a "back to the future" creative inquiry that reflects 'on the system' and identifies past organizational and cultural "success strategies"- some of the mental elements (iron filings) that will begin to interact in the subconscious. Then participants are transported into 'the unknown' of their purposeful imagination to gain insightful images or symbols (light in a bent tunnel) into what is "trying to happen" in the evolution of their organization and their leadership. In this creative space minds are freed from commonly held assumptions and transcend rational analysis, blame, judgment and defensiveness. Learning theorist Albert Bandura expresses it this way: "Symbols serve as vehicles of thought that enable people to store the information required to guide future behaviors." "By symbolizing their experience, people give structure, meaning and continuity to their lives." Symbols are condensed narratives.

The following excerpts were taken from a Sun Microsystems, Systems Test Organization offsite report written by Greg Walsh of Sun Microsystems. Prior to the offsite the management team was experiencing a great deal of conflict among themselves and with the product development groups. Conflict between engineering development groups and other groups is a common phenomenon in most engineering organizations. Design and development groups tend to see themselves as superior and often act like dismissive Judges and knowledge bullies with all other engineering groups, sometimes fraying self-esteem. A similar pattern exists in health care organizations where Doctors tend to play a similar role.

Sun Microsystems, Systems Test Offsite
Architecture for Teamwork
As captured by Greg Walsh (HR Sun) from board work and tape recordings.

The architecture for teamwork as defined by Peter Stonefield (outside consultant) is a clearly defined Shared Purpose, a Shared Vision and Shared Commitments to make it happen.

The Shared Purpose of Systems Test
To provide cost effective systems test which completely validates the functionality of fully integrated Sun and partner products for our internal and external customers.

Self-Organizing Inquiry
Throughout the previous afternoon Peter had guided the management team through a creative self-organizing process involving alternating series of analytical and creative exercises to discover "what was trying to happen" in the evolution of Systems Test and create a rough draft of the emerging Shared Vision and Strategy. The board work and the symbolic, synthesizing images resulting from the creative imaging process were organized and posted on the walls.

Vision Narratives
Peter opened this segment by suggesting to the team that the power of a vision lies in the narrative, conversation or story one has with oneself and others about it. The images already have traction in the mind of the creator. To reinforce them and enroll others, the narratives need to be communicated to others. What is important is that each member of the team creates their own personal narrative about the vision and then tests it for congruency with the vision stories of the others.

After giving them 15 minutes to prepare, each team member presented their personal narrative about the emerging Shared Vision of the group. The energy of this segment builds dramatically as the group interacts with the vision narratives of each presenter, joining their thoughts and feelings with those of the individual as they displayed their images on the board.

As people shared their vision narratives, what emerged were image sets that revealed the dynamic motion and evolution of the enterprise. Some team members had visions that described complimentary aspects of a common theme. The narratives revealed a synthesis of convergent and healing images, where necessary components, previously missing are now found to be in place. Many of the metaphorical stories reflect the ethnic or cultural background of the storyteller adding to the richness, depth, and shared meaning of the process. The result is the organizational awakening to the increasing capacity and actualizing potential of itself and the uniqueness of its members. Everyone began to understand what Peter meant by ego transcending meta-motivation.

As enthusiasm built, people would add on or contribute to another's vision, eventually the group was so involved (and the quality of the tape recording so low) that I chose to abandon any attempt to identify the individual voices, and began to relate all of them as the expression of a single team voice. At that point, every change voice or viewpoint is listed only as TM (team member)

(What follows are 5 vision stories that are representative of theme and direction of all the others.)

Kwan's Narrative: Building Bridges
In my images, I see the two banks of a river, with water flowing between them. One bank is Sun, the other is Sun's customers. In the beginning many people tried to bridge the gap (in the drawing Kwan represents the individual organizations as a separate logs, or planks, with lots of space in between). You could get product through by walking or by wheelbarrows. But, because there was little unity the capacity to serve the customer was small. Now [the present] people are getting smarter, the individual efforts of various groups are becoming more aligned. The capacity increases, but there is still segmentation. They have not yet banned together. We can deliver bigger products, more products, but it is still not the ideal situation. But what we are moving towards is unity of all the groups, and then we have created a bridge that we can drive a wagon over. With this level of unity in System Test, even if one of the logs breaks it is not a problem. You can still drive a wagon over it; you can fix the log while continuing to deliver to the customers.

   Jugal - System Test is the bridge, the critical link to the customer.
   Peter - What I hear you saying is that if we make the planks complementary we can create synergy.
   Kwan- Yes-definitely.

Jugal's Narrative: Quenching the Customers Thirst
In the past, the task of Systems Test was to quench the thirst for quality of our customers. System test heard this and everyone ran off and started digging many small wells. This brought water, but too little, too late. The customer was still thirsty and everyone was tired. Yet somehow we survived. We come to

the present, people recognized that their individual efforts could not dig a well deep enough and fast enough to satisfy the needs of the customer, so based upon common interests, likings or personalities, we grouped together. Little bigger groups with a little more focus. This is where we are today. Somehow, in some combination of these groups we get enough water to our customer to satisfy them in a timely manner. Yet we are experiencing a lot of pain digging the wells. We are digging the wells with primitive tools, wasting lots of energy, and have no idea how deep we will have to go to find water. We are coming to a future where we will see and use the right approach, the right technology and we will understand how, if we all dig together, we can reach a water level that can satisfy our customers thirst now and in the future without all of us feeling tired. Once we figure this out, our lives will be easier from then on. It is just a matter of continuing to improve it. When we are all working together digging a single well, we can all be looking at he same thing, thinking how we can do it better? Instead of fighting with each other, we have love and compassion for each other. We can think of how to make each others lives better.

Peter - How would you characterize the gap between where we are now and where we want to be?

Jugal - The customer is confused now, depending on which group is serving them. Sometimes the customer is happy and satisfied, sometimes not, sometimes partially satisfied again and again. We are better than we were in the past, but we do not have a consistent supply.

Fred - I would say the water is inconsistent, the delivery is not always timely and most important, the customer is no longer beginning to identify use for water. We are not looking for additional uses for water because we are only able to deliver the minimum of what is required now. Were there to be an abundance of water, we and our customers together could identify many new uses for it (Systems Test's work).

Jody's Narrative: The Circle
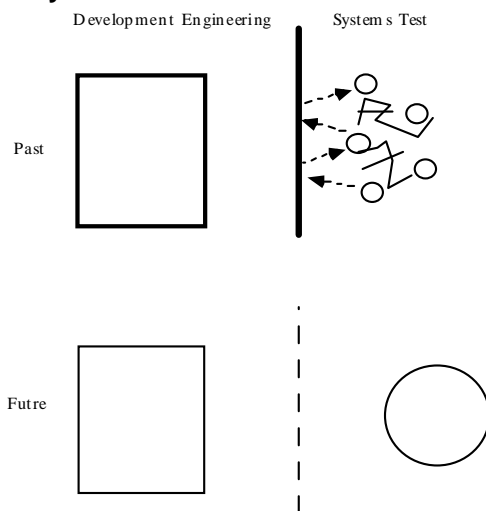
(Pointing to her drawings on the board) In my imagery I saw the Past like this: This is a wall - and this is [System] Test (small circles on the side of the wall) - and this is Development Engineering (large squares on the other side) - and Test is represented by the small circles. This stands for how we

interact with each other, (crossed lines) how complicated and how hard - and this is how we interacted with the individual people in the development (large boxes ignoring small circles - no fit - different world views) - and the size does the talking, and how people give respect - you can see the contrast. You can see how we interact is very complicated, a result from how we acted in the past - so complicated - can't even tell who is doing what, who is saying what. Eventually it migrates to this - because we start helping each other, start interacting the shape (the individuals of system test) starts growing bigger and round - and we become a very big circle, not a square - and no personal ego, that is how I view it. We cannot even tell this is you or this is me - but over here (the development side) - they see a big circle - you can see the size - but we don't care because we are good - we are! - We know it in our mind. We feel we have internal value - and we know we contribute to external value - we actually feel that way - because the destruction from their treatment of us in the past is not so strong anymore - we feel it less and less every day. We feel our hearts pushing us -- expanding the circle.

Peter - In the meta-mind, the circle usually represents wholeness, unity, loss of ego, harmony - where the boxes (development) represent individualism, fragmentation, separation and ego.

Jugal - If I understood you correctly Jody, what you are saying is that once we become a circle, our strength comes from teamwork, the values and commitments and trust within each individual will join together to become a bigger force, which is represented by the last circle? Is it a combined coherent force?

Jody - (Responding to Jugal, gesturing toward the board) Yes because you see, before it was individual lines.

Peter - Incoherent forces.

Jody - And you see the lines going every way...But here you can hardly see anything like this discordant communication - We are really connected!

Peter - You can't break a circle easily. A square collapses if you press on a corner, but a circle flexes or rolls when pressured. It is stronger, more adaptable.

Jody - (gesturing in three dimension) It's a circle.

Jugal - It's spinning - with high energy.

Alan's Narrative: Genetic Evolution
What I noticed in all my drawings is there is a progression an evolution. In the very early days you have a wagon train coming down out of the mountain. In the next one you have a frog emerging from the marsh and losing its tail. When you (Peter) were speaking of the evolution of the group as a self-organizing organic process my mind went back to the days in biology studying DNA. The structure of DNA is almost ladder like. The cyanine and thiamine connected by chromosomes, but the connectors, instead of being chromosomes are things like our employees, and teamwork and accountability. The customers are at the top of the strand. In the past, the pieces of this ladder were missing so we had difficulty connecting with our customers. None of the pieces went all the way up. Eventually we figured out how to connect with them, but it was still incomplete. What I see as the future is a complete DNA structure that goes all the way to the top. If you think of the System Test as one element in a larger organic structure (Sun) then the health of its DNA contributes to the overall health and continuing evolution of the greater organism.

Peter - Here is a corollary or metaphor to consider: DNA is to our biological development as purpose, creative vision is to our psychological and organizational development. Hermes Trismegustus, an old Egyptian hermetic philosopher, postulated a law of correspondence: "As above so below." In other words similar patterns tend to co-exist at different levels in a system. Creating a shared vision this way is evolutionary learning in an organization. Innovation provides the breakthroughs in test strategy and process improvement provides the discipline for the continuous refinement learning that follows.

TM – If we collaborate and share our knowledge we can innovate, enhance each others DNA, Sun's and our customers. Wow!

Fred's Chart: The 12 key Indicators
Well, being the verbal guy I am, I don't have a picture, I have a chart. In terms of the activities we do, the focus was on execution, now it's got to be on development and innovation. In terms of how we view our world [outcomes] it was win-lose, zero sum. Now it's my-gain your-gain, win-win.

Peter - This is where we are going, because it's now versus future?

TM - How about old and new? Our self esteem has been low, and now it will be high. Automation will go from low to high.

TM - I would suggest another category; Value added.

Fred - What would you put in here?

TM - Low to medium – lukewarm.

Fred - Great I love it, because you know what over here is...Hot!

TM - What about a category called "Core Competencies?" Going from mediocre to...

TM - Stellar!

TM - I want to add communication and teamwork. They go from poor to...

TM - Most excellent!

TM - I have another category to add, "Customer satisfaction".

TM - and "Quality of life".

Fred - Hold on. So what would you put in the boxes under customer satisfaction?

TM - Luke warm and Hot!

Fred - And what would you put under the "Quality of life?"

TM - In the toilet, and we want to be flush with success! When things are going well, you won't see the toilet on top of my work station.

TM - I would like to say that the Self Esteem bullet that you have put down is a function of some of the things we have mentioned here. As we increase adding value, as our core competencies go up and communication and teamwork flourish, the self-esteem will increase proportional to that.

Peter - I would like to add a category about energy. The thought I had was that in both old and new there is high energy, but in the old it's dysfunctional and scattered. High energy that results in unproductive stress. The new way is high energy, with a certain synergy to it.

TM - From distress to eustress. Going from entropy to syntropy.

Peter - Yes, you could say incoherent to coherent, the point is that it [the energy] will be much more focused, like going from incandescent light to a laser.

TM - The metaphor is like this: The 'before' is like a pot of boiling water, all its energy is escaping, whereas the future is like a spinning wheel. The energy is organized so that you can capture it and

have it perform useful work for you. That is what I see, one is disorganized energy and the other is organized energy.

TM - I would also add a category, on the "Quality of deliverables".

TM - That's a test coverage issue.

TM - Well, in the future we should know that.

Peter - From unknown to known and high.

Suggestions for Communicating the Narratives

After hearing all the vision narratives and checking for alignment, everyone expressed their enthusiasm and excitement about going back to their departments and engaging their employees in a vision conversation about the evolution of Systems Test.   Peter said that "the power of the process would continue by repeating the narratives back in the work place." Each manager was encouraged to share their vision narrative with associates in casual conversations throughout Systems Test and beyond. "You don't need any arm waving charismatic performance, just be yourself.   You will find that refinements and subtle but important nuances get added as you repeat the story and the creative self-organizing process continues.   You will be expressing your creativity and building your own intimate connection or identification with the vision and the values embedded in it. The result is that the "energy" expressed with the narrative will have the integrity, heart, and enthusiasm that effects the listener while building your commitment to act congruently and make it happen." Peter also recommended we start our management staff meetings with people reporting their experiences of telling their stories and of employee feedback.

Self-organizing New Leadership Roles, Identities and Acknowledgments

This segment was originally intended to clarify current and future leadership roles that the group members envision themselves as playing in System Test. Using a self-organizing creative process similar to the group process each individual discovered and image of what was trying to happen in the evolution of their individual leadership. Peter thought that it would provide contextual frame for understanding the behaviors and personal sharing of the various team members when refining the vision statement, strategy, and future collaboration.

Each member presented their 'next step' leadership "success strategy" or role, ie., director, clarifier, visionary, talent scout, thought leader, systems thinker, architect, collaborative leader etc. Peter expanded the dialog to include perceptions of each others uniqueness and special contributions based on who they are (attitudes, qualities, and characteristics) as well what they did (skills and experience in their management / technical roles).

The session quickly developed into a spontaneous expression of higher level feelings (love) from within the group. This relates to homework assignments from "Natural Leadership" in several ways. Who we are as leaders is every bit as important as what we do. It points out that in spite of all the conflict and tension within the management team before the offsite what has really been "trying to happen" or self-organize was group harmony and cohesiveness. If you consider the whole group as a metaphor for a single mind (a collective meta-mind where each individual represents a unique attribute set) the conversation illustrates concepts of integrating the uniqueness of each person into a coordinated harmonious team capable of functioning at a higher and higher levels of performance.

You could see integration take place at both an individual and team level almost simultaneously. Keep in mind we came here to create a vision and what we ended up with is a solid connection between each other and to what Peter talked about as the drive in all living systems to integrate and perfect itself. To paraphrase from Peter's article, "As leaders, our personal evolution must pace organizational development. ....We can do this by facilitating the natural Personal Integration processes that are

already trying to get us there. If you block the expression of who you deeply are...and your natural evolution as a leader and try to fit your self into one of those 'one size fits all' leadership models, the organization will never receive the benefits of your natural leadership abilities. The more permission we have to express more of ourselves, the more flexible and situationally appropriate we will become, enabling us to liberate our employees' full potential as well as our own and bring our organization to an entirely new class of performance."

After you read over this section, you might want to reread Peter's essay in your offsite binder. Finally, have fun reading this over, it was a wonderful moment. Enjoy!

New Beginning
After the off-site the Managers refined and implemented their Shared Strategy of developing new innovative and complementary test methods that could be utilized through out systems test. Greg, with a little help from me, became the onsite leadership Coach supporting the implementation of each manager's new leadership "success strategy."

In today's emerging "Creative Economy" we must be innovative and organizationally adaptive. Keeping our head down and focusing exclusively on execution let alone will no longer assure survival let alone provide the experience of greater meaning and satisfaction. Everyone must take the time to step back and temporarily move outside the system they are imbedded in and try to observe, 'understand' and facilitate its evolution and their own. Leadership, organizational culture and strategy must co-evolve. Understanding the creative process and the self-organizing process can help discover the insights that spark innovations and organizational reinvention and renewal. The more insightful, the more control the individual and the organization has over their respective destiny.

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Peter Stonefield, BSEE, MA, PhD. is President of Stonefield Learning Group, consultant, psychologist and author of numerous articles. He was an electronic engineer, marketing director and sales executive for the Bunker-Ramo Corporation. He has successfully completed over 150 consulting engagements, created more than 20 different training and development programs and coached over 200 executives and engineers. He has facilitated the development of 10 knowledge leveraging "Communities of Practice" in engineering and marketing organizations. His client list includes Apple Computer, Baxter Laboratories, Dow Chemical, Hewlett Packard, IBM, Intel, US Government, PPG and Sun Microsystems. He was the principal consultant to the winner of the President's Quality Award for Managing Change and the winner of the GSA Administrators Award for Managing Change in Government.

He created and taught courses on Managing Innovation, Quality Management, Optimal

Thinking, the Creative Process including the Purposeful Imagination, Leadership, Collaboration and Counseling Skills including Guided Imagery. He was a director of the Learning In New Dimensions, a company that imported and evolved `super-learning´ techniques for use in business and education.

He recently drafted a vision for computing for Sun Microsystems. His is currently introducing a breakthrough interpersonal communications, individual agility, creative learning and leadership development program. Peter's mission is to catalyze and accelerate the co-evolution of organizations and people.