From Hierarchy to Panarchy:
The Unfolding of a Global Paradigm Shift

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a work in progress, circulated for comment

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INTRODUCTION

This paper is the product of a deep and extensive conversation that has unfolded since February, when we were designing an event titled "This Moment in Time," of which a major theme was living through paradigm change. This conversation has included colleagues, authors, scientists, futurists, designers and others who have been thinking about paradigm shifts in some way, shape or form for years. We've drawn from direct dialogue and interviews, as well as books, podcasts, websites and articles.

The subject is far too broad to include, let alone synthesize, more than a slice of the information available. There is no "truth" about paradigms, especially new ones. Even the past is told through thousands of different lenses. Our intent is to fuel new questions and new insights -- not to be the final word.

Beyond theory and speculation, we have tried to take our thinking full-cycle, and include actionable ideas and suggestions for accelerating and facilitating the maturation of the new paradigm in a healthy, sustainable manner.

We invite you to use this paper as a point of entry into the conversation, and to engage and explore with us. The abundance of white space is there for your use. It is our hope and intent that, together, we can enable some wonderful *upcreation*.

Starting points...

The Invention of Air
by Steven Johnson

The Structure of Scientific Revolutions
by Thomas Kuhn

A World of Possibilities
radio podcasts @
http://www.aworldofpossibilities.com/

The Resilience Alliance
http://www.resalliance.org

Kevin Kelly,
http://www.kk.org

See the **Bibliography** for more source material.

From 16th Century. J.D. Bernal, Science in History, Vol. 1 of the
Emergence of Science

PARADIGMS UNFOLDING

New paradigms are begun by individuals and small groups who are able to see practical uses forming out of the leading edge science, art, and humanities. These "revolutionaries" are not caught up in creating the paradigm shift. They are practical inventors, hunting and gathering new and interesting information to create tools for bettering lives. Connections are made, new questions are asked.

Most often these individuals are working off long hunches… ideas that have been fermenting for years. They share their hunches with other like-minded people, attracting each other into "hotbeds of self-exciting network like cells of neurons, clusters of clusters, with each group associated with some shade of a thought or memory or emotion." Connections are made, new questions are asked and a pan-disciplinary organism forms. There is a willingness to share ideas and ask how they would work together. Way-finding skills become rich and powerful. These individuals are not restrained by what cannot be. They are asking, "What can be?"

Over time, new expertise is brought together from all sectors of society. Understanding grows by chunking and adapting one idea to another. The products – often prototypes – spread forth, increasing people's imaginations for what is possible.

"Never doubt that a small group of thoughtful, committed people could change the world. Indeed, it's the only thing that ever has."
Margaret Mead

"First the people, then the government."
Chinese Emperor's saying

See The Invention of Air, p. 72

Paradigm - a pattern of assumptions, concepts, values and practices that constitute a way of viewing reality for the community that shares them. A collective mindset.

A **paradigm shift** constitutes a transformative change in the basic patterns, assumptions, arrangements that underlay a community's collective mindset.

When we speak of "the paradigm," we are not espousing that there is only one paradigm. Individual domains and communities can all be said to operate within multiple paradigms.

Each field contains tens if not hundreds or thousands of experiments and experimenters trying to identify, understand, influence and accelerate the characteristics of a healthy, sustainable social-economic way of life for ourselves, future generations and our planet.

When forces and circumstances enable or cause multiple shifts to align, this confluence can trigger a phase transition at a global level. This is the kind of paradigm and paradigm shift we consider in this paper.

These early products provide a basis from which new visions can grow. This creative process repeats itself, increasing the chances of a new paradigm to grow robust. Ideas move from single inventions to clusters of inventions. Wealth is created by putting ideas into the marketplace. Success begets success. Individuals prosper as they put in place tools and services that help others prosper.

Instead of being subsumed by the dominant paradigm, they have the collective strength and momentum to cause a shift, a re-framing, leaving behind many of the assumptions, assertions and realities previously unquestioned and undoubted.

In terms of the Creative Process model, new paradigms don't wait until the previous paradigm ends. There is always a period of overlap. By the time a paradigm is moving through the stages of building and using, a new one is forming at the identity stage and moving its way through the various levels of understanding and meaning.

As a paradigm completes its lifecycle, it becomes rigid, constrained by too many rules and loop holes that have been set in place, most often to serve a small need and in the long run, at odds with a systems view. The root ideas around the paradigm have been forgotten and yet the consequences of those roots are still playing out within a structured way of thinking that no longer serves the world.

Seven Stages of the Creative Process Model
© 1982 MG Taylor Corporation
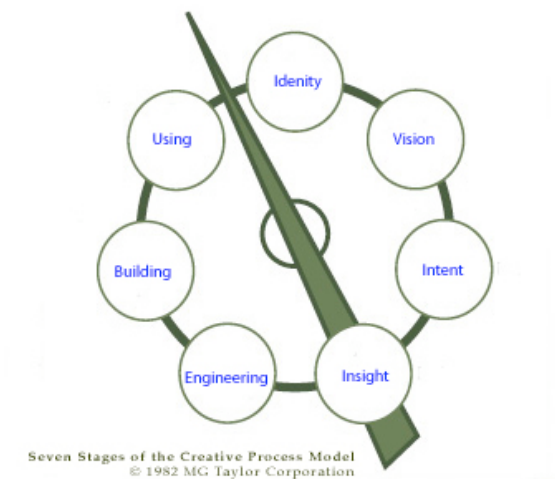
The shift itself happens when the new paradigm reaches a tipping point as it swings through intent and into engineering on the strength of insight and synthesis. History reveals that multiple tries are needed before the "radical" ideas congeal into a coherent force that can replace the old way of thinking. But when the synthesis comes, suddenly what was considered radical becomes the way.

Take a look at the **Stages of an Enterprise model** and note that the largest profits are made toward the end of the cycle, with the enterprise well into maturity. In terms of a paradigm, this is also when beliefs, assumptions and values become most entrenched. In fact, they become so entrenched as to become all but invisible. Imagining the world any different than it is becomes, by definition, illogical. Civilization seems to blindly follow where this reality takes them, impervious to the danger of running off a steep cliff or turning down a dead end.

Today this reality is apparent in our financial crisis. Few saw it coming and those that did were largely made to sound un-credible. We continue to argue that if we fundamentally change what we are doing, we will lose profits, jobs and our way of life. Yet our abundance and stubbornness is heading us right over a cliff. Those leading the profitable enterprises cannot see any other way. This is happening in nearly every field. Profit is good. Why change especially because the other end of this model, the beginning, reveals a slippery slope that engages passions and intent but no assured wealth, no profits. People are simply working with an idea... a potential.

Stages of an Enterprise Model

Stages of an Enterprise model © 1984 MG Taylor Corporation
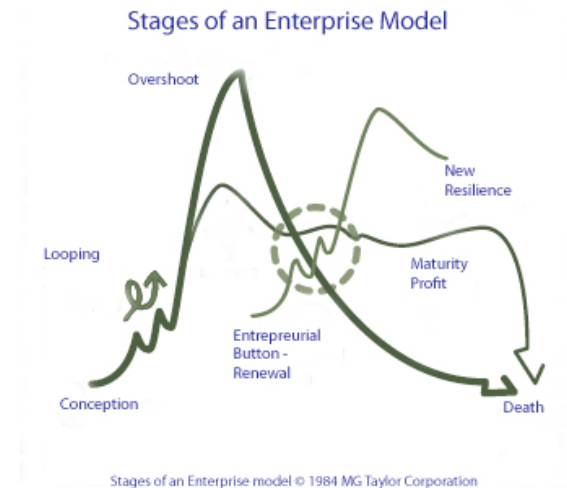
"Normal science is predicated on the assumption that the scientific community knows what the world is like. Much of the success of the enterprise derives from the community's willingness to defend that assumption, if necessary at considerable costs.

When the profession can no longer evade anomalies that subvert the existing tradition of scientific practice—then begin the extraordinary investigations that lead the profession at last to a new set of commitments."

Thomas Kuhn, The Structure of Scientific Revolutions, p.5-6

Like nature, thousands of seeds are sown, yet few make it up that slippery, nebulous slope. Finally, a tipping point comes and a new cycle begins but this one is also dangerous as the overshoot model reveals. A new bubble? A short life?

Kuhn claims that each paradigm shift creates a higher order for good and has the potential to benefit far more people. As more and more people are attracted into the dominant paradigm, seeking a path forward to greater prosperity, entire infrastructures are developed, thus easing communication, information sharing and learning.

Paradigms are filled with the seeds - in the form of both ideas and processes - that will ultimately lead to their end. During the entire cycle endless forms of ingenuity, creativity, and entrepreneurial passions relentlessly create new tools and processes. Specialization blossoms, and the collective body of knowledge grows and grows. Soon, anomalies begin to appear. They forge cracks in the "way things should be." They pick at the status quo. For a while, it is possible to dismiss these anomalies, but as Kuhn points out, when we "can no longer evade anomalies that subvert the existing tradition ... then begin the extraordinary investigations that lead at last to a new set of commitments."

As these extraordinary investigations gain momentum, the outline of a new paradigm begins moving through its identity and vision stage. Individuals begin sensing the practicalities in

this new way of seeing. They work with it creating new possibilities to improve life.

It is when one paradigm reaches the insight phase of the creative cycle and the other is happily taking profit in the using cycle that trouble comes. The old, accustomed to the control and power systems of its own making, suddenly realizes that this reality is in some danger of losing its foothold on how the world works.

The two paradigms – one dying, one emerging – engage in a growing battle for dominance. Bifurcation and bricolage are two major characteristics of this time. The old hunkers down doing whatever it can to hold on, stay in control. Sides are taken. Socially, this side-taking can take the form of protests, strikes, citizen marches and demonstrations. All of this is happening while a gowning number of doers and practitioners are designing, inventing and launching new ideas.

The simple illustration of the Creative Process model (above) is not meant to imply simple movements from one phase to another. There are many rough spots and multiple tries over time. The new paradigm seems to swing back and forth between intent and engineering. The forerunners of the new make multiple attempts to move through insight and yet, this is impossible without a large number of people also recognizing how this new paradigm will work for them. The old paradigm becomes less resilient. It gives way to a new infrastructure that

Bricolage - the construction or creation of a work from a diverse range of things which happen to be available… to make creative and resourceful use of whatever materials are to hand (regardless of their original purpose)."

It is borrowed from French, the core meaning being, "fiddle, tinker." A person who engages in bricolage is a bricoleur.
    - http://en.wikipedia.org/wiki/Bricolage

can house the new tools and social memes holding the promise of making life better.

FROM HIERARCHY TO PANARCHY

An informed group of people could spend a day or more listing out the characteristics of the old paradigm and a shorter, but still long list of the emerging characteristics. That is not our purpose with this paper. Instead we have given each a name: Hierarchy and Panarchy. There is overlap between the two. Our premise is that the hierarchical paradigm began to fragment and falter in the 60's and has been unraveling and defaulting on itself since then. The panarachial paradigm was given possibility in the late 90's and has been doubling like lily pads ever since.

The hierarchical paradigm organized from the top down in separated bodies of knowledge. Command and control were centralized. Answers became more valuable than questions; repitition was more useful than creativity and difference. These command and control systems have inevitably led to empire building, growth as the only means of creating wealth, and a relentless consumerism. The hierarchical system put huge demands on a very few people to produce good solutions for more than 6 billion people. There was no way this central control method could deal with the sweeping changes and complexity created over the years. Tremendous pressures to make better, faster decisions and the impossibility to do

Panarchy is the structure in which systems, including those of nature (e.g., forests) and of humans (e.g., capitalism), as well as combined human-natural systems (e.g., institutions that govern natural resource use such as the Forest Service), are interlinked in continual adaptive cycles of growth, accumulation, restructuring, and renewal.

The cross-scale, interdisciplinary, and dynamic nature of the theory has led to the term panarchy. Its essential focus is to rationalize the interplay between change and persistence, between the predictable and unpredictable.

Such changes comprise economic, ecological, and social systems, and they are evolutionary. They concern rapidly unfolding processes and slowly changing ones; gradual change and episodic change; and they take place and interact at many scales from local to global.

Adapted from the <u>Resilience Alliance</u> website, http://www.resalliance.org/593.php

so responsibly forged cracks in the system enabling a new form of organization to emerge.

Panarchy, on the other hand, is as different to hierarchy as day is to night. And while the term "panarchy" is relatively new, what it describes – the inter-linkage of systems "in continual adaptive cycles of growth, accumulation, restructuring, and renewal" – has always been an essential means by which nature learns and evolves. Organization and direction come from the bottom up and from the fringes. The hierarchical bottlenecks that could not deal with fast throughput are simply not there.

The Internet and the tools utilizing it give panarchy its momentum in human-centered systems today. Now the governor or controller of the system is "all of us." We are all engaged and accountable to each other and to the planet. *WE* are becoming a new form of super power, making it possible to release the dormant creativity of the whole and come to know each other and our world in very powerful ways.

There is an emerging second superpower, but it is not a nation. Instead, it is a new form of international player, constituted by the "will of the people" in a global social movement… This movement has a surprisingly agile and muscular body of citizen activists who identify their interests with world society as a whole—and who recognize that at a fundamental level we are all one. These are people who are attempting to take into account the needs and dreams of all 6.3 billion people in the world— and not just the members of one or another nation.

James F. Moore
Berkman Center for Internet & Society
Harvard Law School 2003

BUILDING TRUST: A PLACE TO BEGIN

We've scanned hundreds of web sites, talked with dozens of people, and read books and articles. We've followed trends, joined networks in search of ideas and insights into how we might be able to direct and accelerate the maturation of the emerging paradigm, and leveraging it toward the greater good.

There is much happening… fabulous networks, services, and inventing happening in every field we searched; the synchronicity between unlikely partners is astounding and seems inexhaustible in its exuberance.

Through all of this hunting and gathering, one sentence caught our attention. The simple sentence is:

"We've begun to trust each other again."

This sentence is from a documentary called <u>US Now</u>, which reveals the growth and maturing of our ability to communicate real time across all boundaries, all sectors of societies and cultures.

The introductory paragraphs of this documentary tells the story:

> *Mass communication is a phrase that's been re-defined over the centuries, as tools to transfer what people think, what they want and how they feel have*

developed with human progress. Cave paintings, language, stone indentations, the written word, the printing press, the gramophone, the telephone, cinema, radio, television, computers – and now the Internet.

But the Internet, and the software that runs on it, is a fundamentally different form of communication. Within a few years we've stopped being passive consumers of limited sources of information, entertainment and expertise. Instead, we have become the authors of our own information and knowledge, sharing what we care about with others rather than merely being swayed by the latest marketing of a product or lifestyle.

Most powerfully, we've begun to trust each other again.

US Now website:
http://www.usnowfilm.com

[Us Now](http://www.usnowfilm.com) *is a documentary about just that. How the fundamental idea of social dynamics, the sense of communal glue which appeared to be in its final death throws in the late 20th century, has suddenly been reborn thanks to the Internet. And with it, a shocking sense of what's possible when we stop being political sheep, and start being grass-root shepherds... The portrait they create is a world of empowerment and of collaboration founded on human kindness and transparency. Old systems of control - be it medical, financial or political - are held up to examination, all*

the time asking, "Are we heading somewhere else? Because we now have the tools to take a different path."

The Internet and the tools developed to exploit it are giving all humans the possibility of engaging to design and build a better, more equitable world. With it comes a new kind of trust... a trust both intimate - built from the bottom up, one transaction at a time - and accelerated through 24-7, multi-modal, multi-media, global connectivity.

By nurturing and strengthening this trust we can better educate, innovate, exchange value and create a more peaceful world. Consider the time we gain by investing our energies in trust and healthy relationships rather than fear and ignorance. Trust doesn't need to be sold. Trust attracts.

Can we direct and accelerate the growth of organic trust to shape this new paradigm?

Is it possible? Can a small, but powerful initiative facilitate and hasten a stream of trust building? What does it steer? How does it accelerate? What then is the long-term strategy? What will make the difference? Where is leverage? How does it help cohere and embed trust? What are the feedback loops that can hold fear at bay while trust builds from the bottom up?

The old paradigm knew the answer to who to trust. It was simple: Trust leaders, those people at the top. Over the past

fifty years, the typical person's connection to leadership became very distant, sometimes non-personal, often with deep conflicts of interest.

Now, however, the Internet and the platforms built to run on it are providing us with ways to re-connect and reshape relationships with an intimacy and personalization once common. The Internet recreates what we mean by connecting and communicating. To our knowledge, this moment in time is the first time that people have attempted to ride the storm, to be wayfinders for a new paradigm in formation.

The new paradigm is still extremely fragile and malleable. We are both arrogant and naive enough to think that we can give systemic design to this unfolding … a design neither too heavy- nor too light-handed. In all of our reading and understanding, beginnings influence the unfolding memes and ways of working well into the future. This is why we believe creating a scaffolding system is so essential, and why it is the central focus of our thesis. Put in place successfully, it will give resilience to the new paradigm while squeezing out the characteristics of the old paradigm that are no longer useful.

SCAFFOLDING FOR A NEW PARADIGM

How can the new paradigm be hurried into the world in a healthy way? What are the lenses and technologies that can accelerate and direct something so profound as a Paradigm Shift?

In coming to know answers to these questions, organizations will need a core suite of 'hard' and 'soft' organizational qualities and capacities. We believe we have identified a powerful scaffolding system that will help organizations "live-into-being" these traits while better equipping it to recognize, understand and influence the world it seeks.

We use three components in this scaffolding. Each is a 'system' in its own right, but success depends upon the interoperability of the three working together: meta-system; system-in-focus; and nested-systems.

Meta system - Wayfinding:
Unfolding and calibrating new patterns

System in Focus - Trim Tabbing:
Providing orientation and direction

Nested Systems - Infrastructure & Communications:
Building systems that trust to create trust

Scaffolding is a temporary frame or framing element used for support in the creation, repair or recreation of complex processes, structures and systems. Our use draws on the usages found in construction, chemistry, engineering, design and ecology. Scaffolding helps align things that happen fast with those that are slow so that everything could come up together, in the right sequence at the right time.

See Chapter Four of <u>Out of Control</u>, by Kevin Kelly for more on the role of scaffolding in emergent systems.

By cohering these three systems, we greatly increase the frequency and magnitude of insight. Taken together, they can reveal unseen leverage points and influencers, making favorable outcomes more likely and possibly preventing a few unintended consequences.

WAYFINDING: UNFOLDING AND CALIBRATING NEW PATTERNS

The emerging paradigm will not wait for us. It races full steam, shaping itself exponentially. Think of the lily pond story where there is one lily pad on day one, two on day two, four on day three, and so on … doubling each day until it is completely full just one day after being half full. This can be the good news or the bad news depending on who and what forces are managing it. We have the opportunity to play a design role in the future, to shape what is emerging in a way that creates a better world.

Wayfinding is a powerful search process and lens for understanding a complex, dynamic, organically unfolding new paradigm. It can provide insights and warnings as to what is ahead and how to steer clear of negative unintended consequences or engage early with new opportunities.

The ability to direct and accelerate depends in part on our ability to see the future in relationship to the past, recognizing dynamics and emerging patterns. The more our collective intelligence engages and learns to choose pathways wisely, the more we will build trust in our futures.

Wayfinding historically refers to the techniques used by travelers over land and sea to find relatively unmarked and often mislabeled routes.

Since we are traveling into an unknown future, a good wayfinding process can help us decide when, how, and where go. It can help us find unmarked and mislabeled routes deep into future opportunities, perhaps helping us avoid treacherous paths and dangerous assumptions. Wayfinders help mark the way for others to follow.

DEVELOPING NEW SEARCH IMAGES

If we are to create healthy resilient paths forward, we must practice not only thinking differently, but also how we come to understand and act. We are used to thinking about facts and trends, mostly human made. We tend to want to optimize, prioritize and control how systems work. Existing scenario planning is uni-directional and flat in that it does not account for how complex adaptive systems really work. Complex systems are deeply layered with fast and slow processes that work together in long feedback loops interacting and transacting to provide resiliency over time.

Hierarchical processes tend to work in either/or worlds that are prioritized to subjugate decisions to optimize and create efficient systems. Panarchical processes will operate from the bottom up. This form of decision-making tends to be messier, more chaotic and ambiguous than any of us are used to or understand how to manage.

Neither hierarchical or panarchical have built into them a natural understanding of resilience. While panarchical processes tend to be more inclusive and transparent, these characteristics on their own do not combine to create the systems that will provide us with a resilient healthy future, more equitable for all.

Wayfinding within a shrinking world isn't about conserving or attempting to move backwards to an earlier time in our development. Rather, it is about creating space to open the door

Resilience is "the capacity of an ecosystem to tolerate disturbance without collapsing into a qualitatively different state that is controlled by a different set of processes. A resilient ecosystem can withstand shocks and rebuild itself when necessary. Resilien in social systems has the added capac of humans to anticipate and plan for t future. Humans are part of the natural world. We depend on ecological syste for our survival and we continuously impact the ecosystems in which we liv from the local to global scale.
Resilience is a property of these linked social-ecological systems (SES).
"Resilience" as applied to ecosystems to integrated systems of people and th natural environment, has three definin characteristics:
- The amount of change the system can undergo and still retain the same controls on function and structure
- The degree to which the syste is capable of self-organization
- The ability to build and increa the capacity for learning and adaptation."

- http://www.resalliance.org/576.php

to new options and better ways of living and participating in the future.   Resilient thinking must make room for surprises and transformations. It requires different ways of employing feedback loops, understanding thresholds and acting on partial information for short and long term real gains.

Actively engaging in Wayfinding may be one of the most important capabilities at this time in the world. Wayfinding creates a process to perturb and assist our minds to recognize new patterns unfolding and to learn how to calibrate these patterns to take advantage of fast and slow cycles. A good Wayfinding process can help wrap minds and hands around ideas that are too big, bold and complex for any one alone to firmly grasp.

The Wayfinding process is one of creating models well into the future and working with them. It is both an armature and process for building trust in the future. It provides a community space where the future can be explored, given direction, and resiliency not only for ourselves but for future generations.

The emerging paradigm is largely unknown. We are at its beginning. Many of the assumptions, models, language, boundaries and rules are not yet defined or must be redefined. Disruptive technologies and disruptive social memes are appearing at a faster and faster rate.

Over the last ten to fifteen years, the richness and importance of thinking and designing strategically has been almost non-

existent. Many of the strategies we put in place at the beginning of the 20th century have not been undated and our tactical thinking is no longer very fit for the world we find ourselves in. One of the key roles of Wayfinding is to provide insight into new patterns and how we can calibrate systems. Now we must not only develop new strategies, but also understand strategy in new ways. We must learn to hunt and gather information and intelligence differently than any of us learned in school or our governmental and corporate enterprises.

Suggested policy: Do the scanning for yourselves

Scan globally. The industrial paradigm was focused on the "developed" part of the word. It assumed empire building and the subordination of the rest of the world. With the advance of the Internet, cell phones, and many other forms of technology and social systems, the panarchial paradigm is global. Any design and exploration into our future must be global, reaching into the smallest, most remote communities.

Be willing to look out at least 20 years. Explore ideas that reach back in time and take them well into the future. Invite futurists, consultants, and ordinary citizens of multi-generations into your process and engage their expertise to further, or check, your assumptions and insights into the future.

Use the Wayfinding process to stay requisite or equal to the exponential development and growth of the new paradigm.

Know that emerging trends are at the beginning of long cycles of iteration and understanding.

Suggested strategy:
Engage all aspects of your community in seeing differently

Create formal processes for engaging all aspects of your community. Hold bi-annual design sessions that bring together a diverse group of participants to play with possibilities. We use the term play, as David Bohm suggests, as the very essence of thought. He suggests that creative play is an essential element in forming new hypotheses and ideas.

Make Wayfinding a rich part of the work. Create an energy that makes the role of hunting and gathering for creating space where resilience can grow within this emerging paradigm.
Give it transparency: be willing to broadcast discoveries. Create a culture of inclusiveness: make the pool of potential participants diverse and varied. Utilize exclusive talent: employ a core team to build on the ideas that emerged through previous sessions.

TRIM TABBING: PROVIDING ORIENTATION & DIRECTION

The credit for making this term useful as a metaphor is Buckminster Fuller. Fuller is known best for his design science and visionary work. He was one of the first to propagate a systemic worldview.

Trim tab – the small surface connected to the trailing edge of a larger control surface on a boat or aircraft. The angle of the tab relative to the larger surface can be adjusted to null out hydro- or aero-dynamic forces and stabilize the boat or aircraft in a particular desired direction or altitude without the need to constantly apply a control force. An adjustable trim tab will allow the operator to reduce the manual force required to maintain that position -- zero, if used correctly.

The trim tab reduces the work of the captain by reducing the amount of manual control necessary, as well as providing for greater efficiency by keeping the ship in the ideal orientation for the conditions.
- http://en.wikipedia.org/wiki/Trim_tab

As a lifelong sailor, Bucky was well aware of the purpose of the trim tab on the rudder of his boat. He called himself a trim tab, working always to answer his question, *"Does humanity have a chance to survive lastingly and successfully on planet Earth, and if so, how?"*

Considering himself an average individual without special monetary means or academic degree, he chose to devote his life to this question, trying to identify what he, as an individual, could do to improve humanity's condition, which large organizations, governments, and private enterprises inherently could not do.

Can we trim tab the emerging paradigm?

What is the role of strategic-thinking process facilitators in shaping the new paradigm? Where should we begin? How can a small leveraged network use its abilities and vantage points to direct the course of the world? The new paradigm has life; it is now gaining form and momentum.

Trim Tabbing is narrower in scope than Wayfinding, shaping, focusing and contextualizing selected projects. It facilitates pathways and helps accelerate the phase transitions for projects to become self-sufficient ecosystems, spawning new projects and ecosystems … creating trust community by community.

The Nine Laws of God governing the incubation of somethings from nothing:

1. Distribute being
2. Control from the bottom up
3. Cultivate increasing returns
4. Grow by chunking
5. Maximize the fringes
6. Honor your errors
7. Pursue no optima; have multiple goals
8. Seek persistent disequilibrium
9. Change changes itself.

"These nine laws are the organizing principles that can be found operating in systems as diverse as biological evolution and SimCity. Of course I am not suggesting that they are the only laws needed to make something from nothing; but out of the many observations accumulating in the science of complexity, these principles are the broadest, crispest, and most representative generalities. I believe that one can go pretty far as a god while sticking to these nine rules."
Kevin Kelly, Out of Control, Ch 24.

Suggested policy:
Tap the sapiential leadership of all members

Members are investors, process designers, and project team members. Together they grow the success, scale and scope of their work. Professional colleagues are engaged and can provide give and take at all the vantage levels. This kind of relationship is not about self, but rather how one sees the world and his/her role with others in solving very complex problems. Here, being able to follow is as important as leading. Sapient leadership creates a collective intelligence that is far greater than that of any one individual.

Suggested policy: Distribute being – choose projects that are meant to be widely distributed and adapted.

Many organizations are beginning to coalesce ideas and to make it easier for projects to find each other. Others are working to give new organizations a voice and to elicit ideas worth spreading.

This group can not only do these things but also, by becoming coherence experts, provide a new way of working that is able to take entire ecosystems of projects, people, and ideas through phase transitions faster and with more resilience.

Change changes change. Choose projects that establish higher order patterns for others to emulate. This creates a natural form of competition where projects can help each other move through phase transitions. In this way, projects will not evolve

Sapiential Leadership is leadership in which the person who can most clearly see the next step is responsible for communicating this step and facilitating or leading the group through it.

In an age as complex as ours, it's unreasonable to imagine that any one person has all of the questions and all of the answers. To invest individuals with such responsibility creates unnecessary burdens and pressure and debilitates the creative edge of other members of the team.

This kind of leadership always resides within the collective intelligence we call Group Genius. It is a kind of leadership that allows space to play, iterate, design and learn the art of flow as team.

through linear development but will gain direction, scale, and scope from each other's actions.

Suggested strategy: Assemble complexity at the highest level.

Have as part of your base team expert problem designers that know how to break complex problems into chunk-able problems, not too big and not to small. Then as problem designers, know when to combine chunks into larger and larger ecosystems of solutions. Problem designers move back and forth from part to whole seamlessly offering a steady hand.

Suggested policy: Invest in projects that attract co-creative partners and alliances.

Connect these projects at the strategic levels. Each will find ways to connect and work together at the tactical level.

Suggested strategy: RE.CO.DE

"Re.co.de" is shorthand for a meme that emerged during **This Moment in Time**, a Tomorrow Makers collaboration with The Value Web which brought together around 40 participants to explore the role of design and designers in our world.

RE signifies recursion & iteration.
A recursive design process has the ability to employ the same principles and processes on itself that it employs on the systems it designs. An iterative design process seeks to develop the

More about This Moment in Time:
http://is.gd/1KM4v

whole from the very beginning and to add levels of definition and understanding over time. All levels will engage in iterations of work, not to arrive at the perfect answer, but to learn from each other, get feedback and take the idea further.
Recursion facilitates robustness and resilience. Working iteratively allows better feedback, and holds open the space for emergence.

CO signifies collaboration.
When done well, collaboration unleashes collective intelligence and channels that intelligence into the design and decision-making processes to produce dramatically better results. Collaboration recognizes that everyone has expertise, and there are no experts in the fields of the unknown and undiscovered. The complex problems we face today call for all kinds of intelligences, voices, and vantage points.

DE signifies design.
Design is a very lively process. It is hands on both playful and thoughtful. There are no pat answers. The role of designer can be highly liberating. It can give wings to a new-found freedom to innovate and take part. Design is challenging in that often, there are no clear boundaries and either/or answers. For designers, a chance to help shape a new paradigm is the highest reward. It is a great time to be alive and able to contribute to the creating of a more equitable world and the restoration of planet Earth.

INFRASTUCTURE & COMMUNICATIONS:
BUILDING SYSTEMS THAT TRUST TO CREATE TRUST

The system behavior we seek in these nested systems is the enabling of phase transitions to higher and higher orders of trust and resilience. We use the term "upcreating," borrowed from Kevin Kelly, to identify these transitions, or escapes.

For organizations forming at this time, there is a need to assert the state of the art in both face-to-face and virtual collaboration. This is where many gains can be made. Good process facilitation and communication can take months out of any time line.
Real time feedback is essential to fast-flowing information and design. If we as citizens of planet Earth really intend to do our best to restore the planet and make all life more equitable, then we must learn to unleash our highest forms of collective intelligence – what we call Group Genius - throughout all levels of society. We must learn this whether face-to-face or virtually spread throughout the world in many different cultures and languages.

http://www.opensourceinitiative.org

Open source technology has had an exponential rate of success. Just a few years ago there were vicious arguments between the large computer industry corporations vying to keep systems closed and proprietary and the first open system, Linux. The developer, Linus Torvalds, is Finnish. How could this tiny idea take hold and win over closed systems such as Sun

Upcreation - self-organization that brings forth an emergent level of complexity that encompasses, without destruction, the previous lower levels of organization.

"In the right circumstances self-organization can often also be legitimately called self-creation. Without an outside agent, the parts cohere into a new organization that brings forth an "emergent" level or self not present before. Since the new emergent level of complexity encompasses, without destruction, the previous "lower" levels of organization, I call this self-creation of higher levels 'upcreation.'"

Kevin Kelly
http://www.kk.org/thetechnium/archives/2009/05/upcreation.php

Microsystems, and Microsoft? Torvalds created success by creating simple rules that facilitated trust, engagement, co-creation and excellence. Linux put the ownership in the hands of the community and asked them to monitor themselves and create their own viability.

Open source was first a platform to develop software. With recursive levels of interaction and coding, the concept spread its wings by developing software that enabled all fields to better communicate and create information channels, facilitating trust between producer and user. Open source is scaling from the bottom up, organically with the ultimate purpose of sharing the world's resources through transparency and collaboration.

http://www.mgtaylor.com

The MG Taylor Method was founded on the belief that people both want and need to collaborate, design, and work together to solve complex problems. The method was designed to release dormant creativity through working together to find new, original solutions. It was built on an understanding of the rate of change and that the emergence of a new paradigm would need a far greater number of ordinary citizens designing, thinking, and playing with possibilities. At the core, trust was embedded into the method.

Like open source, there have been vicious arguments about the value of collaboration. Who wanted groupthink? Until a few years ago, it was assumed that creative people were few and far apart. The idea of creating places where people from diverse roles, experiences, and hierarchy could play together was

ludicrous to all but a few. Process design and facilitation is just now emerging as a critical tool, able to dramatically influence the time, speed, and scale of any endeavor.

While created separately with little interaction, the simple rules (axioms) of Open Source and Taylor Methods are very similar. Both are born out of complexity science. Collaboration, engagement, transparency and creating better worlds are at the heart of each because done well, each of these elements creates trust.

Open source technology is learning how to reach out and engage millions of individuals and communities in the further design of this paradigm. Open source is at its beginning stages, new, energetic, fun and remarkably useful in its ability to create trust from afar. The MG Taylor method is continually learning about the value of face-to-face communication and deep iterative levels of collaboration.

Each needs to remain independent, exploring, inventing, partnering for new forms of resilience and reliability. Those working at each level of system will continually inform and learn from each other. A tight virtuous cycle of coming to knowing will be in play.

Upcreation can be achieved when these nested systems are working in synchronicity with each other and as a wholly aligned system to enable and facilitate paths forward.

LEADERSHIP & LETTING GO

The nature of leadership will continue to change and grow, shaping and being shaped by the new paradigm. For each of us this means, at least temporarily, letting go of what we know about leadership, civil society, governance, and the memes forming rules of how the world works. New paradigms are not about compromising or taking a little bit of the old and some of the new and sticking them together in some sort of merger. Rather, choosing to take part in the direction and acceleration of the new paradigm means letting go and recreating possibilities and new roles for each participant. It is learning and designing on the go.

It is our assumption that nearly everyone has thoughts about "If I could do it over again, I would do it differently…" Each played out their roles in a mature system of rules and memes about how the world worked. As we come to know the characteristics of the new paradigm, we will have new freedoms. It is through designing that we will come to know the projects that, with the right investment, can give the emerging paradigm the thrust it needs.

THE GREAT LEAP

We are at a moment of commencement. A powerful ending and dramatic beginning. Standing in the old, hierarchical paradigm is scary. It is looking straight into the abyss. None of the alternatives look good. Leaping this abyss to a paradigm of panarchy requires an optimism grounded in the trust that with these new tools and realities we can give new meaning to our place in the world.

"Humanity is coalescing. It is reconstituting the world, and the action is taking place in schoolrooms, farms, jungles, villages, campuses, companies, refuge camps, deserts, fisheries, and slums… Rather than control, it seeks connection. Rather than dominance, it strives to disperse concentrations of power. Like Mercy Corps, it works behind the scenes and gets the job done. Large as it is, no one knows the true size of this movement."
-Paul Hawken, 2009 Commencement to University of Oregon

To give this view of reality more than a short bleep in history, it needs care, nourishment, and stewardship of trust building. It demands ongoing design, engaging people of all walks of life in making this great leap and cohering into a powerful resilience on the other side.

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The **MG Taylor models** we used in this paper include The Seven Stages of the Creative Process, Stages of Enterprise and Rate of Change. All are copyright MG Taylor Corp. and available online at: http://www.mgtaylor.com/public/2001/mod_lang.html.

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