



Leading Change
Through Creative Insights

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Creativity in Organizations[©]

How can creativity become a tangible process and a prime contributor to the strategic objective of the organization?

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Executive Summary

This paper provides an historical overview over the last 100 years of the development and effects of applied creative thinking in organizations and asks the question why creativity has not been better understood as an organisational or business process; investigates statistician and TQM founder Dr W. Edwards Deming's systems thinking approach to understanding how organizations operate holistically and the American sociologist C Wright Mills work on labour as practice and craft as a way of understanding the forces of organizational creativity; summarises the emergence of interactive computer software systems enabling the modelling and analysis of whole systems to assist business and organizations in decision making and offers a specific analytic – the Management Innovation Index™ as a way for an organization to model its creative ecology and analyse the flow of its employees' creative inputs through that ecology as a means of making organizational creativity a tangible process, capable of driving sustained innovation for the benefit and value of an organization.

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Introduction.

In June 2010, IBM released its biennial Global Chief Executive Office Study co-ordinated by the IBM Institute for Business Value containing a summary of 1500 interviews conducted personally with CEO's operating at a global level entitled "Capitalizing on Complexity"¹ Samuel J. Palmisano, Chairman, President and CEO, IBM Corporation at the time, highlighted in his introduction three main agendas currently occupying global CEOs' business and strategic thinking.

The first and most challenging agenda was "the rapid escalation in complexity confronting them" which they "expected to continue and, indeed, accelerate in the coming years" The concern accompanying this challenge and the second agenda item was CEOs and their organizations do not perceive they are "equipped to cope effectively with this complexity in the global environment". These circumstances led the CEOs to identify "...creativity as the single most important leadership competency for enterprises seeking a path way through the (emerging) complexity.." as the third agenda item.

The identification of "creativity" as the single most important leadership competency for enterprises is far from new thinking either corporately or in management or organizational theory and the IBM Report in and of itself offers little new insight.

Indeed, creativity and the creative process in an organizational context have been occupying the thoughts of Western business leaders and executives, politicians and academics since the late 19th and early 20th centuries. Graham Wallas, a founding lecturer at the London School of Economics and a founding member of the Fabian Society (along with H.G Wells and George Bernard Shaw) outlined in his book "The Art of Thought" (1926) what is generally accepted as the first articulated Western theory of the five stages of the creative thinking process which he defined as

"(i) preparation (preparatory work on a problem that focuses the individual's mind on the problem and explores the problem's dimensions),
(ii) incubation (where the problem is internalized into the unconscious mind and nothing appears externally to be happening),
(iii) intimation (the creative person gets a "feeling" that a solution is on its way),
(iv) illumination or insight (where the creative idea bursts forth from its preconscious processing into conscious awareness);
and
(v) verification (where the idea is consciously verified, elaborated, and then applied)."²

In 1938, Alex Osborn, the O in the famous American advertising agency BBD&O, coined the term "brainstorming" to describe the ideation sessions he ran with his employees to "use

¹ IBM Global CEO Study 2010 Capitalising on Complexity <https://www-935.ibm.com/services/au/ceo/ceostudy2010/register.html>

² Wallas, G. The Art of Thought, NYC: Harcourt-Bruce, 1926

the brain to storm a problem". Presciently, he wrote in the early 1950's "brainstorming became too popular too fast with the result that it was frequently misused. Too many people jumped at it as a panacea then turned against it when no miracles occurred. Likewise too many have erroneously regarded group brainstorming as a complete problem-solving process, whereas it is only one of several phases of idea-finding; and idea finding is only one of the several phases of creative-problem solving"³

In 1948, Dr Sidney J Parnes with Alex Osborn launched the Osborn-Parnes Creative Problem Solving Methodology, the basic foundational creative thinking skills method. The Creative Problem Solving Methodology operates on the premise there are two types of creative thinking - divergent (generating lots of options) and convergent (judging options and making decisions). This methodology evolved out of Osborn's unhappy experience with brainstorming and is a far more rigorous and defined approach to problem-solving. In the same year Parnes and Osborn produced a week conference and training programme introducing this new method for problem solving to the world of business – a conference that has now been running for 53 years consecutively⁴

In 1950, J. P. Guilford's famous "creativity" address to the American Psychological Association popularized the topic amongst American business executives when he proposed individual creativity could be psychometrically measured and the results applied for improved results in the work place.

In 1954, Alex Osborn financed, wrote, edited, printed and published 2000 copies of "Applied Imagination: Principles and Procedures of Creative Problem-Solving" which he distributed as gifts to his advertising agency clients. In what is now considered the classic text underpinning the rise of creativity and creative thinking in American capitalism post World War 2⁵, he above all other American writers and theorists of the time articulated the American dream when he wrote

*"Competition has forced American business to recognise the importance of conscious creative effort. So much so, that more and more, heart and center of almost every successful manufacturing company is its creative research. Industrial research used to do but little more than take things apart in order to find out what caused what and why. The new research adds to such fact finding a definite and conscious creative function aimed to discover new facts, arrive at new combinations and find new applications"*⁶

Using the royalties from Applied Imagination, Osborn founded the Creative Education Foundation in 1967 at the State University of New York, Buffalo State in 1967 - still the only Masters in Science programme offered globally on the study of creative behavior. The Academic Journal of Creative Behavior has been publishing quarterly articles and papers from this programme since its inception as well – 40 years of continuous publication of peer to peer academic reviewed papers on creative behaviors.

³ Osborn Alex, (1954) Applied Imagination Creative Education Foundation Press Chapter 12 P 151

⁴ The Creative Problem Solving Methodology Conference is known as CPSI (pronounced Zip Cee) is recognised as the longest running creativity conference in the world. It was held for 50 years at the Buffalo Campus of the State University of New York and returned to that venue after three years absence in 2010.

⁵ Osborn, A; Applied Imagination, Creative Education Foundation Press, 1954 - Imagination Made American, Chapter One, p3

⁶ Osborn, A Applied Imagination, Creative Education Foundation Press, 1954 - Imagination Made American, Chapter One, p4

The maturity of this field was revealed in 1992 when Dr Parnes edited and launched an anthology of essays under the title “The Source Book of Creative Problem-Solving: A Fifty Year Digest of Proven Innovation Processes”. The anthology traces the history of the development of the creativity movement in Western thinking post World War 2 to the turn of the 21st century.

Parnes purpose in publishing the anthology was to provide an historical perspective on “the stages in the progress in the deliberate development of creative thinking” and he listed them as such

1. 1940’s – a cry in the dark
2. 1950’s – the hope and hunch stage
- 3 1960’s – the research, replication and report stage
- 4 1970-s the widespread application stage
- 5 1980’s – the mainstream application”⁷

The book contains 50 essays, one from each year from 1950-1990 Dr Parnes considered the best annual contribution to the field of creativity and innovation in any field.

Outstanding highlights are Abraham Maslow’s “Emotional Blocks To Creativity” – the complete notes from a speech Maslow gave in 1957 to a Creative Engineering Seminar, US Army Management School, Fort Belvoir, Virginia USA in which he outlines for the first time in an organizational context, as opposed to an academic one, the importance of creativity in self-actualising. He ends his address by posing the challenge “we’ll all have to find some way of permitting people to be individualistic in an organization and concludes “I don’t know how it will be done. I think it will have to be a practical kind of working out, just simply trying a little bit of this and a little bit of that and trying out the other and finally coming to some kind of empirical conclusion.”⁸

From the year of 1969, Parnes selected the British physician, Dr Edward deBono’s essay “Information Processing and New Ideas – Lateral and Vertical Thinking” because it added a refreshing approach to his and Osborn’s divergent and convergent thinking model. deBono’s stood apart from Osborn and Parnes by adding 4 new general techniques – awareness, random simulation, alternatives, alteration – to the creative thinking process, declaring these new techniques meant “vertical thinking is concerned with digging the same hole deeper. Lateral thinking is concerned with digging the hole somewhere else”.⁹

Perhaps the most relevant essay contemporaneously is General Electric’s Physicist-Artist Ned Herrmann’s contribution, his 1978 essay entitled “The Creative Brain”. The essay details the thinking and content behind one of the world’s first organizational creativity

⁷ Parnes, Sidney J. Edited by The Source Book of Creative Problem Solving, Creative Education Foundation Press, 1992 Chapter One Historical Perspective P1.

⁸ Maslow Abraham, Emotional Blocks To Creativity, The Source Book of Creative Problem Solving, Section 11 P104.

⁹ deBono, Edward, (1969) Information Processing and New Ideas – Lateral and Vertical Thinking, The Source Book of Creative Problem Solving Section 29 P 246.

programmes for executives. Herrmann began his essay “In my search for my place and work, I made some remarkable discoveries about the human brain...what I found was an explanation of the double existence I had been leading most of my life – with one foot in the world of big business, the other planted just as solidly in the world of art and music. The insights into the brain acted as a mirror that showed me who I was and why I behaved the way I did.”¹⁰

What is particularly valuable about this essay is Herrmann’s description of a Eureka moment – the brain acting as a mirror. He describes a 35 mile journey in a car during which he explores his continuing frustration with the imagines of a physiological map of the brain with its seemingly useless left brain/right brain definition as a diagram and then has the sudden epiphany of the map as a visual metaphor for the brain as a quadrant of thinking styles.

In his research during the General Electric executive creativity programme Herrmann had collected sufficient data to identify four individual thinking styles – analytical, sequential, interpersonal and imaginative. He recognised if he could map the data collected onto a visualiation of the brain he could use an image of the whole brain as a metaphor for creative thinking. and in so doing compare the four individual thinking styles. The result the Herrmann Brain Dominance Instrument (HBDI), a diagnostic tool still used extensively to-day in organizations to measure and assist individuals to identify their preferred thinking style.

Herrmann’s metaphor for the creative brain has become the inspiration for the 21st Century concept of whole brain thinking made popular in Daniel Pink’s book “A Whole New Mind – Why Right Brainers Will Rule The Future” (2006) in which Pink proposes the world is moving from the information age to the conceptual age (an age that requires creative rather than logical-analytical thinking) and for much of the current theoretical work being pursued in the emerging field of neuroscience.

So with that history, that breadth and depth of academic research, the question has to be asked - why is creativity not better understood as an organizational or business process after over a century’s worth of study and contemplation?

The Case for a Systems Thinking Approach to Organizational Creativity

Defining creativity as a concept in its own right is difficult enough, let alone identifying it as an organizational or business process.

Metaphorically, an organization is a humanist environment driven by a series of cumulative practices. Subconscious in their formation, the cumulative practices are constrained by a system that supports and directs them for the benefit of the organization.

The behaviours supporting these cumulative practices need identification and definition to model a system of creativity operating in an organization to enable meaningful analysis. Further, if the model is to have any meaning or value, it needs to be behaviourally and

¹⁰ Herrmann, Ned (1989) The Source Book of Creative Problem Solving edited by Dr Sidney J Parnes Selection 28 p 229.
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economically cogent in context as well. The ultimate test being whether through measuring organizational creativity, the organization will obtain a better knowledge of how it can become a more efficient, productive and successful innovator, the driving force behind all successful organizations.

It may seem odd the first clues in finding solutions to these quandaries do not come from a humanities discipline where you might expect a discussion on creativity to reside but from the total quality movement (TQM) and, in particular, work pioneered by the American author, statistician and management consultant, Dr W. Edward Deming during the post World War 2 industrial expansion of Japan.

Largely unrecognised in his native US until much later in life, Deming died in 1993 the same year his most celebrated book, *The New Economics for Industry, Government, Education*, was published - a life time's work condensed into a management philosophy grounded in systems theory.

The underlying principle of Deming's theory, which he called a System of Profound Knowledge¹¹, is that a system cannot understand itself and "any transformation (in it) requires an outside view – a lens – that I (he) call a system of profound knowledge. A map of theory by which to understand the organizations we work in."

Each organization, according to Deming, is composed of a connection of interrelated processes and people which make up the system's components. The success of all managers and workers within the system is dependent on the leaders' capability to orchestrate the delicate balance of each component for optimization of the entire system.

An essential element of Deming's theory was what he called *The Appreciation of a System*¹². This "involved understanding how interactions (i.e., feedback) between the elements of a system result in internal restrictions that force the system to behave as a single organism that automatically seeks a steady state"¹³. Importantly he identified that "it was this steady state that determines the output of the system rather than the individual elements. Thus it is the structure of the organization rather than the employees, alone, which hold the key to improving the quality of output"¹⁴.

However, if the system's basic components are creative practices, notoriously chaotic, risky, uncertain, uncontrollable, intractable and intangible, how can we begin to observe and describe how the human frailties behind these simultaneous creative practices combine to influence and cohere to produce a steady state of organizational creativity with a quality output?

Whilst Deming was starting out on his journey of systematising industrial production in

¹¹ The W. Edwards Deming Institute Definition of A System of Profound Knowledge <http://deming.org/index.cfm?content=66>

¹² The Appreciation of A System http://en.wikipedia.org/wiki/W._Edwards_Deming

¹³ The Definition of A Steady State http://en.wikipedia.org/wiki/Steady_state

¹⁴ <http://www.improvementandinnovation.com/features/articles/link-between-demings-theory-profound-knowledge-and-systems-thinking>

Japan post World War 2, American sociologist C Wright Mills¹⁵ was expressing his concern about the potential of the corporation to dehumanise work.

In his book *White Collar: The American Middle Class* (1951) he contended that bureaucracies were now developing in a way that “overwhelmed the individual city worker, robbing him or her of all independent thought and turning him into a sort of a robot that is oppressed but cheerful. He or she gets a salary, but becomes alienated from the world because of his or her inability to affect or change it.”¹⁶

For Wright Mills, who was constantly trying to reconcile the individual and society, the ideal corporate environment was one in which “the labourer with a sense of craft becomes engaged in the work in and for itself; the satisfactions of working are their own reward, the details of daily labor are connected in the worker’s mind to the end product; the worker can control his or her own actions at work; skills develop within the work process; work is connected with the freedom to experiment; finally family, community, and politics are measured by the standard of inner satisfaction, coherence and experiment in craft labour...”¹⁷

This was a radical view at the time but could be the basic advertising copy for an employee job description for those wishing to join to-day’s information, knowledge and technological industries.

60 years hence, Wright Mills description of the idealised environment in which an individual’s creative practices and endeavours can be recognized, expressed and encouraged is emerging as a vital consideration in the development and success of 21st Century organizations.

Important to Wright Mill’s thinking was the notion of experimentation in the work context and its importance to the worker’s identity. Creativity is understood through imagination (the what if) and experimentation (the how); states that in turn are driven by a loop of practice, implementation and perception and the conversations that occur around these perceptions. Through this process, the sense of craft associated with an individual’s work develops along with his/her understanding of its practices and his/her capabilities and limitations in that regard.

The lasting legacy of Wright Mill’s work is that it describes the humanity and value individuals are seeking to bring to their work in organizations in the 21st Century and the resulting personal and creative freedoms that benefit them, and the organizations or networks, within in which they work.

The lasting legacy of Deming’s philosophy is that it has been able to build an important connection between the mechanistic and logico-rationalism of the world of systems thinking and the human aspect of management.

¹⁵ C Wright Mills http://en.wikipedia.org/wiki/C._Wright_Mills

¹⁶ A Brief Summary of C Wright Mills work http://encycl.opentopia.com/term/C._Wright_Mills

¹⁷ C Wright Mills Quoted from Richard Sennett’s *The Craftsman* http://www.bookforum.com/inprint/015_01/2268

But wait!! A prominent voice from the ghosts of the Industrial Age echoes through the board rooms and senior executive levels of our contemporary organizations questioning our hypothesis. Lord Kelso, British physicist and member of the House of Lords, 1824 – 1827 booms out sardonically from the floor of the chamber. “When you can measure what you are speaking about and express it in numbers you know something about it. But when you cannot express it in numbers, your knowledge is a meagre and unsatisfactory kind; it may be the beginning of knowledge, but you have scarcely in your thoughts advanced to the state of science, my friends.”¹⁸

A Methodology for Analysing Organizational Creativity

In the late 1950’s and early 1960s, researchers at the Carnegie Institute of Technology working on organizational decision making saw the potential of using the first generation of computer scientists to design interactive software-based systems intended to help decision makers compile useful information from a combination of raw data, documents, and personal knowledge, or business models to identify and solve problems and make decisions. In the mid 60s, the Massachusetts Institute of Technology (MIT) joined the trend and applied their thinking and extensive research work on the ability of computer software to develop, articulate and test different types of decision-making theories¹⁹. By the late 1970s, a new field in computer science, decision support services (DSS) had gathered momentum and by the turn of the century had expanded to include organizational decision support systems (ODSSs), group decision support systems (GDSSs) and executive information systems (EISs) with specialist fields of research in data warehousing and online analytical processing.

50 years later in the Fall issue 2010 the MIT Sloan Management Research Report “Analytics: The New Path To Value”²⁰ found senior executives now want businesses to run on data driven decisions. They want scenarios and simulations that provide them with immediate guidance on what best actions to take both when change and disruption occur and when planning the future.

Could it be possible to design an analytic to model organizational creativity revealing its strengths, opportunities and weaknesses? Could this enable business executives to make more informed decisions enabling them to turn the organization’s creativity into a process of a steady state of sustainable innovation and value for the organization? Could an analytic of this nature answer the CEO’s challenge of 2010 by making creativity more visible and meaningful in a leadership context?

In 2008, I began consulting with Dr Ed Halteman of SurveyNDesign USA, a mathematician and survey design expert currently supervising Rutgers University’s PhD students in innovation and later in 2009 Sara Dunn, an economics graduate from University of

¹⁸ Quoted from Chapter 1 Page 5 on Intangibles and the Challenge - How To Measure Anything by Douglas W. Hubbard

¹⁹ Decision Theory http://en.wikipedia.org/wiki/Decision_theory

²⁰ Analytics: The New Path to Value How The Smartest Organizations Are Embedding Analytics to Transform Insights Into Action by MIT Sloan Management Review and the IBM Institute of Business Value Research Report Fall 2010

Washington and a former Hewlett Packard executive specialising in database design and statistical analysis with the purpose of developing and trialling a methodology for the analysis of an organization's creativity,

The hypothesis for the methodology proposed organizational creativity was driven by two elements – the employees' creative inputs which ultimately produce innovation - and the organizational ecology which supports or impedes the flow of these creative inputs, Rather like a theatrical production, organizational creativity is the sum of all the parts involved in the organization's operation with the outcome being the organization's innovation performance.

Creative inputs in an organization evolve from a moment in time when a single thought manifested, picked up by a person who did not initiate the thought, coalesces into a concrete idea. Once this occurs, the idea has a life of its own and begins a never-ending journey that is dependent for its survival and acceptance on its flow within the system.

To ensure the idea is given a good chance to germinate regardless of its intrinsic merit, managers seek clarity around four elements of ideation.

- Purpose – I know why I am working on this idea and it has a chance of being developed within the system.
- Motivation – I am committed, passionate, ready to take a risk, go the extra mile to make new things happen. There is a flow in my work environment that means I am not impeded and I am supported, recognized and rewarded for my ideas.
- Orientation – I am empowered to develop my own ideas. I know who to work with to advance them. I recognise where the constraints are around my ability to advance them. I am OK with that and know how to resolve it.
- Implementation – my ideas will get implemented in some form or another.

A survey containing a series of questions administered across all levels of the organization enables sufficient raw data to be collected to grade managers' perceptions of these elements, thereby replicating Deming's concept of an appreciation of the system and its feedback mechanisms.

The second element of the survey gathers data on the organization's creative ecology, namely

- the organization's culture and environment and its managers' skills in envisioning, leadership, communication and reflection
- the organization's strategic leadership thinking style and its managers knowledge and understanding of the concepts of emergence, design, collaboration and analysis
- the organization's practices in strategic innovation and its managers experience, skills and techniques around the tactics of innovation implementation

and

- the cumulative beliefs and traits of the organization's leaders and managers associated with their creative thinking styles and practices

A summary of this data benchmarks the organization's creative ecology revealing perceived biases in patterns and strengths or weaknesses in the organization's overall management capabilities and how it affects innovation.

The results with the assistance of independent innovation experts are compiled into a report making visible the organization's "steady state" of creativity; the outcome of which is a simulation of Deming's map of profound knowledge, a lens onto the organization's creativity.

In late 2008, the Australian Broadcasting Commission agreed to trail the initial version of the analytic under the name of the Creative Leadership Index within the ABC's Strategic Innovation Department of 37 people. An additional trail followed shortly thereafter when Terrapinn, an Australian training and events industry multi-national ran the analytic across 12 countries involving country Managing Directors and their immediate reports –54 senior executives out of a total of 3500 employees. In addition, the survey was made available publicly on line enabling the collection of random data to build the database. By the end of 2009, 473 completed surveys with over 11,000 pieces of data had been collected and reports prepared and presented to both organizations.

Whilst the initial response was positive from both organizations with Terrapinn HR Global Director Bernard DeSmidt describing the analytic as "a wonderful upfront needs analysis enabling an organization to develop a deep level of understanding about its construct; revealing what is glaringly obvious that has to be done to enable it to become truly innovative", it was a thorough review from Abigail E. Thomas, Head, Strategic Innovation & Development, Australian Broadcast Commission that indicated there was a qualitative component missing from the report that would add substantial meaning and value to the benchmarking and quantitative analysis.

As a result, a component was added to the survey collecting personalized stories and anecdotes to gauge the managers' perceived current creativity and innovation experiences in the work place giving substance and meaning to the numbers and measurements.

During 2010, Allianz Insurance UK was researching, globally, ways or methods to measure the effectiveness of its 6 ½ year old organization wide innovation programme. After 6 months research, when awarding the project to the Creative Leadership Index, renamed the Management Innovation Index (the MIX), Harvey Wade, Manager of Strategic Innovation, Allianz UK said "The most important point of difference for the Management Innovation Index as a form of measurement was its clear perspective on the strategic dynamics of organizational creativity. Whilst it did recommend the use of tools and methodologies, like other providers, it was distinctly not its main focus. What the Management Innovation Index did was put innovation into a proposition that enabled focus." ⁱⁱ

A list of 224 employees was compiled from across Allianz's UK operations and its outsourcing division in India. A communication seeking employees' assistance in assessing innovation in Allianz by participating in an on-line survey was authored and distributed internally with a personal invitation from the CEO. The on-line survey remained open for 6 weeks, 184 participated with 153 completing the survey in full.

The outcome, a 35 page report, evidenced a holistic view of organizational creativity can be mapped, enabling leaders to assess their current state of innovation effectiveness. In addition, the raw data collected assists leaders to make better informed decisions about how to harness and develop the creative capacity across the multitude of practices that exist within an organization. For example, the Allianz HR Department registered the highest level of impediments to creativity, amongst other things sighting lack of time and adherence to process governance as factors.

In a comprehensive interview on the strengths and weaknesses of the analytic at the completion of the project²¹, Wade said "The way the collected data and details were interpreted and presented meant that it gave Allianz real numbers and measures, assisting them to re-enforce what they felt intuitively. The importance for the innovation team, though, was in obtaining real measures with genuine rigour as it represented the views of over 150 people across the business that gave meaning to their intuition. For example, its qualitative data revealed a blockage in middle management and the reasons for the blockage that had not been clear before".

How well these measures are interpreted and acted upon by the organization's leaders will dictate how affectively a system of continuous creative inputs can be harnessed to drive an organization's business and organizational goals and objectives.

The biggest challenge for leaders once the intangibles of organizational creativity have been benchmarked still remains how to engage and empower employees creatively; to communicate innovation's strategic and tactical imperative against all the other operational measures and processes in which the organization is currently committed.

Don't expect creativity in an organization, if the lead indicators are driven by employee engagement and/or behavioural thinking style surveys. These diagnostics impede the empowerment of managers to think differently - the lifeblood of creativity - and emphasize conformity - the coffin for creativity.

The Future for Organizational Creativity

Leading a 21st Century organization is becoming more and more complex as market and economic conditions constantly and rapidly change in a technologically connected world. The next competitive edge for leaders and organizations will focus on researching and

²¹ A Case Study of Innovation in a Mature Financial Services Organization – Allianz UK & the Management Innovation Index By Ralph Kerle, Executive Chairman, the Creative Leadership Forum © September 29, 2011

defining problems that need to be solved. Resolving problems requires creative thinking and creative practices. Importantly, resolving problems creates business opportunities. Allianz UK's Innovation Team promotes the theme organizationally "When there is a problem and there is a solution, there is an idea". Those leaders that are able to harness and develop their organization's unique creative capabilities in a strategic manner to solve problems will gain competitive advantage in the 21st Century.

C. Mills Wright's notion of the workplace as a social environment in which managers are empowered and openly applauded for being creative enhancing the managers' professional practices, personal skills, dignity and well being rather than conforming to policies and procedures is starting to emerge as a response to the democratization of the work place in 21st Century brought about by the introduction of social media and its collaborative technologies. The smartest young managers are seeking to work in environments that facilitate the use of these new technologies with the opportunities they offer the organization and the employee to work across cultures, across industries, across teams and across platforms.

Leaders know organizational creativity is vital to the enterprises survival, yet after a hundred years of theorising, academic research and executive training, little headway has been made in understanding how it can be applied for the benefit of the organization as a whole. The advent of sophisticated interactive computer software offering insightful analysis of whole systems and the complexity surrounding them suggest a new way forward in this domain.

An analytic, the Management Innovation Index, proposes a way of modelling an organization's creativity, making tangible the flow of creative inputs and the creative ecology which supports those flows which in turn produces innovation in the system. The analytic maps the organization's cumulative creative strengths and weaknesses across all levels of the organization and informs the leader as to where it is perceived the impediments to the organization's creativity specifically occur.

With the knowledge obtained through this process, a leader has data and a set of numbers from which to commence making informed decisions about the future strategic direction of the organization. Managers have a clear sense of what they need to do to develop their creative practice contextually to facilitate meaningful contributions to the strategic direction and success of the organization overall.

So when a leader expresses concerns about the complexity and value of creativity and says show me the numbers, there can now be a tangible response. Organizational creativity manifested meaningfully can now be understood and managed and as Peter Drucker famously wrote "What get's measured, gets managed."²²

²² A brief history of Peter Drucker. http://en.wikipedia.org/wiki/Peter_Drucker .

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