Creating a Culture of Innovation

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Before we begin, I'd like to ask how many people in the audience today have heard speakers talking about innovation, motivation, or some other "-ation?" I've heard a bunch of them in my time, and many of them follow a similar pattern. The speaker comes on stage and tells you a story – a success story – how some company turned itself around, or how they, themselves achieved some seemingly super-human goal, or how an unsuspecting person rose from adversity to conquer a life challenge. All very heroic. And then, either explicitly or by implication, the speaker will instruct you to go and be like them. Go do what they did. Be inspired to be your best. Just emulate their courage, their fortitude, their drive, their perseverance, their inventiveness, and you too will be successful.

In other words, those motivational speakers turn into your mother – or at least my mother. "Why can't you be like George down the street?" Or the corporate version: "Why can't you innovate and be successful like IBM, or Microsoft, or Google?" Or the public service version: "You don't see other governments making its clients queue up like that." Well, maybe you do…

I have the privilege today of being invited to share with you some ideas on creating a culture of innovation. I certainly will tell you a story or two – and some of them might even be true – but more to the point, I will share with you how innovation works. I will show you where it comes from in a historical context and how to create conditions within your workgroup, within your department, and within your entire organization, that encourage the emergence of innovative perception, thinking, and action.

Four Principles for Creating a Culture of Innovation

There are four simple principles that I'd like you to take with you today – four simple principles that are crucial to creating a culture of innovation. Here they are:

- See what isn't there.
- Think what no one else can think.
- Do what no one else dares to do.
- Multiply your mind by giving it away.

The first two principles – see what isn't there and think what no one else can think – actually describes a… a crazy person! Marshall McLuhan, the visionary who gave us "The Medium is the Message" and the "Global Village," would say that in the land of the blind, a one-eyed man is a hallucinating idiot – simply because that person is the one who sees things that, as far as everyone else is concerned, aren't there, and therefore thinks things that no one else can possibly think or even imagine. German philosopher Arthur Schopenhauer is far more generous. He describes these characteristics as attributes of an independent mind. "An independent mind," he says, "will think things that no one else can think about those things that everyone else already sees." So how do we see things that aren't there, and think things that

no one else can think? To begin to develop our own independent minds, we start with a very simple question: What haven't you noticed lately? What HAVEN'T you noticed lately?

There's a cute story about a man who, during wartime, would come to the country's border with a wheelbarrow full of dirt. The border guard looked at the man's papers and all was in order for him to cross. But the guard was certain the man was smuggling some sort of contraband in the wheelbarrow. So the guard took a shovel, poked around in the dirt, but found nothing. The man was allowed to cross.

The next week, the man once again comes to the border with a wheelbarrow full of dirt. Again, the border guard found that the papers were in order and dug through the dirt, but still found nothing. And again, the man was allowed to cross. Week after week, it was the same story: Man approaches the border with wheelbarrow full of dirt. Guard finds nothing of interest and the man crosses. At the end of the war, the guard sees the man and asks him: "Look, I know you were smuggling something across the border, but I could never find a thing hidden in the dirt. What were you smuggling all those years?" The man answered: "Wheelbarrows."

The border guard was unable to perceive what had been right there under his nose for years, simply because it did not match his conception. The guard had been so well trained to look for what he was absolutely positive was there, that the actual contraband disappeared. Thus the guard could not see what, in *effect*, was not there. The little man, on the other hand had learned to think what no one else could think. Specifically, he thought that, in *effect*, the contraband could be smuggled in plain sight because that would *effect*-ively make it invisible. Innovative? Yes. And the innovation originated in understanding a theory of effects.

When we build a business or almost any other organization, we conceive a mission statement, we conceive a business plan, we functionally decompose our operations into responsibilities and accountabilities. We create workflows, and work teams. We devise manageable tasks with measurable objectives. We plan outcomes and predict the behaviours and reactions of our clients or customers, our suppliers, our stakeholders. In other words, we create elaborate mental models of how things are supposed to work. We create conceptions, and then manage our affairs so that our organization attempts to match those preconceived notions. This is, in fact, what most people are taught in one way or the other from their earliest exposure to formal education all the way through post-secondary institutions, and beyond.

But we are not necessarily effective, that is, we do not manage so that we achieve the overall desired effects within our total environment. Why do I say this? Simply because, what we conceive about our enterprises and institutions is not sufficient to fully understand all the effects that are actually happening in and around our enterprises and institutions. Like the border guard in the story, we are completely unable to perceive all of the dynamics of our environment because our conception limits our perception. Our intense focus on precisely what we have been trained to do controls what we believe. And what we believe controls what we are able to see.

What haven't you noticed lately? This is really an odd question, because, how can you notice that which you haven't yet noticed? And if, as I am proposing to you, this is a key question for awareness in our complex interconnected environment, even if we answer it once, how can we consistently continue to answer it?

Unfortunately, it is almost impossible to achieve the requisite awareness of what we haven't noticed while we are immersed in a comfortable, or at least accustomed, environment. We are all subject to the ground-rules, that is, the rules and

unperceived effects that govern our ground or context. It is like asking a fish to suddenly become aware of water. Marshall McLuhan observed, "One thing about which fish know exactly nothing is water, since they have no anti-environment which would enable them to perceive the element they live in." It is only when it is pulled from the water that the fish becomes acutely aware of its former environment. The challenge in achieving the awareness to notice the formerly unnoticed — what we call achieving integral awareness of our total environment — is to create an appropriate "anti-environment."

We tend to notice many things. In fact, we're very good at noticing what is entirely obvious, to the extent that we often become obsessively focused on it. This is dangerously easy to do because in our world of instantaneous communications, everyone is vying for the most precious and valuable commodity to be sought — our attention. Think about it: Every advertiser, every potential vendor and company desperately wants your attention, and will go to great, and sometimes outrageous, lengths to obtain it. If attention is the most valuable commodity, our most valued asset, it may be said that the most valuable personal skill to be effective these days is ignorance, literally ignore-ance — the ability to selectively and appropriately ignore that which is irrelevant or merely distracting. In this context, ignorance is not bliss — it is the practical manifestation of acute awareness and heightened perception.

The challenge is a tricky one: We must create an anti-environment so that we can ignore what we notice and notice what we ignore. And what is most hidden from our perception, that we ignore the most? Well, whatever it is, we know that it comprises our ground, and is having the greatest unseen effects on us, our enterprises and institutions, costing lots of attention, potentially draining significant resources, and contributing to the mismanagement of opportunities.

One way to accomplish this anti-environment awareness is simply to wait. By looking back through the passage of time, we can slowly become aware of the true effects of our environment. The people who take this approach are those who march backwards into the future.

What would be entirely more useful is a way to reveal those effects that are hidden from us — now. We need to find the questions that we have not asked after we've asked everything we can think of. We need to raise the issues that have not yet occurred to us. And perhaps most important, we must anticipate the effects that have already happened of things that we are about to do. In other words, our objective is nothing less than to achieve the ability to predict the future by foretelling the present.

After such a build-up, I'm almost tempted to say, "to find out more, have your credit card ready and dial the toll-free number on your screen…" But I won't. Instead, I will reveal to you all at least one of the secrets behind Marshall McLuhan's uncanny ability to, indeed, predict the future by foretelling the present. McLuhan was the one who, in 1955, described "television platters" that would allow people to watch pre-recorded television programs and movies on their home television set whenever they wanted. A dozen IBM divisional directors in 1968 literally thought McLuhan was crazy when he described a computer in every home and online grocery shopping. The tool I'm talking about is the Laws of Media.

The Laws of Media

The Laws of Media: They are precisely four aspects or effects that apply without exception to all creations of humankind — everything we conceive or create. In McLuhan's lexicon, "medium" is not merely limited to our conventional idea of mass-media: radio, television, the press, the Internet. Rather, a medium refers to anything from which a change emerges. And since

some sort of change in us or society accompanies anything we conceive or create, all of our tools and technologies, policies and plans, a cup of coffee or a coup d'état — they are all McLuhan media. The Laws of Media apply regardless of whether the creation is tangible or intangible, abstract or concrete, and they serve to reveal the nature and effects of our innovations relative to us. Now to Marshall McLuhan, the questions were always more important, and indeed, more revealing, than the answers. Thus, the four Laws of Media are framed as four questions or probes.

The first probe is asked like this: What does the thing — the artefact, the medium — extend, enhance, intensify, accelerate or enable? We can ask this question about any product, any service, any initiative, any policy. We can ask this enhance question about any word or phrase in our vocabulary, including our buzzwords and acronyms. Email, for example, enhances and accelerates our ability to communicate in writing. Its rapidity and characteristic terseness intensifies the sender's meaning.

A second probe: When pushed or extended beyond the limits of its potential, the new thing will tend to reverse what had been its original characteristics. Into what does the new medium reverse? People typically have difficulty thinking through the characteristics of the reversal law, often because we tend to be very focused on what a new idea or creation will obviously do for us. The effect of reversal is really very easy to state; discovering the circumstances under which it emerges might be more tricky. So, continuing with email as an example, it enhances our ability to communicate, but when extended beyond the limit of its potential — with spam, for instance, or dozens of unimportant FYI- or CC-type of corporate emails — email reverses into no communication at all due to an overflowing inbox.

The third Law of Media probe: If some aspect of a situation or a thing is enhanced or

enlarged, simultaneously, something else is displaced. What is pushed aside or obsolesced by the new thing; the new medium? Now when I say "obsolescence," I do not mean that the older form is eliminated, never to be heard from again. In fact, it is quite the opposite: One sure sign of a medium in obsolescence is its ubiquity. Does everyone remember what happened right before the dot-com bubble burst? There was a saying then: "You know the end of the market is near when you're getting stock advice from your garbage collector." Another way to think of obsolescence in this context is to picture a supernova. The star glows brightest just before it is about to explode and be annihilated. So what does email obsolesce? In a corporate setting, email obsolesced the interoffice memo, and those large brown envelopes tied with a string that had all those boxes for a chain of recipients. It also obsolesces synchronicity in communications – the ability to respond instantly as in normal conversation – and other socialized skills of responding to aural or physical cues, in other words, tone of voice, vocal nuance and body language.

And the final Law of Media probe: What does the new medium retrieve from the past that had been formerly obsolesced? This reflects the aphorism that, "there's nothing new under the sun," and essentially asks, "How did we react as a society the last time we saw a medium with analogous effects?" The law of retrieval brings in precedence and historically-based experience. So what does email retrieve from the past that has long been obsolesced? Thinking way back through the history of communications, email may retrieve Hermes the messenger, scribe and herald of Greek mythology. Interestingly, from the perspective of the retrieval aspect of email, Hermes was also the Greek god of commerce, invention, cunning and theft. So now you know why email is the medium of choice for all those confidential business

proposals you have been receiving from Nigeria.

The Laws of Media are simultaneous effects — emergent properties, really — of anything we conceive or create. What does it extend, enhance, accelerate, amplify or enable? When pushed beyond the limit of its capacity into what does it reverse? What does it obsolesce? And, what does it retrieve from the past that was formerly obsolesced? These are the fundamental effects, or messages, of a medium. When McLuhan said, "The medium is the message," what he was telling us was that we know the nature and character of anything we conceive or create – the medium – by virtue of the effects – the messages – that emerge.

The Laws of Media are an important and powerful tool that help us to create a cognitive anti-environment, from which we can gain new awareness and insight into the complex interactions in our world. Without such a reframing of both perception and cognition – seeing and thinking – our ability to even become aware of all the things we have missed is limited – and it's limited primarily by our vocabulary. Because thinking is intimately tied to language – our minds structure our words and our words structure our minds – among the first things that change once we begin to employ such a framework is indeed the way we speak. In the business world, in organizational life, and particularly in a leadership role, we often talk about winning and losing, upsides and downsides, strengths and weaknesses, pros and cons, advantages and disadvantages, you're either with us or against us. Even that trite cliché, a "win-win situation," suggests that both parties winning is somehow an exceptional occurrence, because under normal circumstances, if I'm right, you have to be wrong. This sort of dichotomous thinking that pervades the cubicles of both business and governments is an obstacle to awareness and perhaps the number one impediment to creating a culture of innovation.

Think about what actually happens in your organization when someone comes up with a truly new idea. When you are asked to consider the pros and cons, or the upsides and downsides, your thinking is immediately restricted to that particular model which attempts to describe the situation in black and white. We focus on features or the uses of whatever it is; but we tend to ignore the complex dynamic effects that emerge from the interaction of this medium – the thing or situation we are considering – within its ground or context. That one-dimensional, dichotomous model defines an adversarial situation that requires those with opposing points of view to square off, each one defending his own territory to the death. When we are put into that circumstance, we will ignore or push aside any argument that may weaken our position, because, after all, for me to be right, you have to be wrong. After all, I'm the expert!

The Cult of the Expert

Let me tell you a little story about experts. When John Warnock brought the kernel of Adobe Systems out of the lab at Xerox PARC, his original business plan was to create a complete turnkey system for publishing – computer hardware, printers, software, the whole shebang. It was essentially the Xerox business plan based on what had become Adobe's Postscript technology. They quickly realized that the most valuable part of the package was the font libraries, and Adobe decided to build their business on licensing that one key component. Adobe grew and was successful, and, had they listened to what their Postscript customers – especially their best customers – wanted, they would not necessarily have lived happily ever after. You see, licensing the font libraries was clever, but not particularly innovative.

As John Warnock tells the story, he had an idea for a virtual printer – a piece of software that would act like a printer to create an image of what the page would look like if it

was printed. But instead of a physical copy, the image could be displayed on a computer screen, independent of the software platform – in fact, the file would be able to cross different platforms without conversion. The marketing experts asked why someone would want to look at a printout on a screen. If they wanted to see the printed page, they would print the page. The technical experts asked why the file would need to be platform independent – after all, any given company used only one type of software platform. The sales experts raised the most devastating objection: None of their customers had asked for it and none of their customers wanted it. And there was a long development queue of things their customers had asked for, so diverting resources would be out of the question.

Pity the expert and his expertise. You all know what "expert-tease" is, don't you? It's the tease of the little bit of information that the expert provides, making you want to return to the expert for more. The expert dances the "expert-tease" and thus makes himself indispensable to the organization. The problem is, the expert may have all the answers, but he rarely has any of the right questions. In the case of Adobe, Warnock looked to reversal for the innovative leap. None of his current customers wanted this funny little application that could throw print images from platform to platform like an Acrobat, but perhaps there were those who were not yet his customers who would. So to entice them to try it, he employed another reversal (for the time): He gave away the reader for free, and the company he founded still does.

By employing the multi-dimensional Laws of Media to explore the dynamics of new and changing situations, we avoid all of that macho, expert head-butting because no one has to defend a point of view. Advantages and disadvantages, that are essentially value judgements rather than an understanding of dynamic effects, are simply not useful in this

sort of exploration. McLuhan tells us, "Value judgements create smog in our culture and distract attention from processes." The processes that interested Marshall McLuhan the most were retrievals, as he maintained that retrieval is the dominant mode of the Laws of Media tetrad. It brings back cultural memory and the influences of the past. But for me, the most interesting quadrant is reversal, since it is the evolutionary quadrant, and the one from which real innovation and invention emerges.

So these are the first two things that you, in your leadership roles, may want to take back to your teams, in order to begin to foster a culture of innovation. See what isn't there, because we have been trained to ignore anything that does not support our preconceived point of view or expert opinion. Think what no one else can think, because we have been conditioned to believe that the world exists only in diametric opposites.

Now I promised you four principles that will enable you to create a culture of innovation. The third is "do what no one else dares to do," suggesting the obvious question: what is it that no one else would dare to do? And the answer that I would offer to you is something that is so stark, so dramatic, so stunningly avant-garde that very few are, in fact, willing to do it. And what is that act? Simply this: Discard everything you have been taught about how the world works, because it does not work that way any longer.

Now to explain this admittedly provocative proposal, I need to take you through a bit of history – say about 3,000 years worth.

A Short History of Western Civilization

Come back with me to the heart of Western civilization nestled on the shores of the Mediterranean, namely, to Ancient Greece. We're going back to a time before Aristotle, before Plato, and just before Homer. This is a time – approximately –

when the Phoenician traders not only brought amphoras of oil and bags of grain in commerce, but also the phonetic alphabet that was, incidentally, first used as an accounting system to conduct that commerce.

Since there was no phonetic alphabet at that time, knowledge had nothing to do with reading and writing. In fact, all of human history had to be memorized, and passed from generation to generation by word of mouth in the form of poetry. As such, Homer's recounting of tales of the fall of Troy, for instance, and of Odysseus's fantastic voyages used a poetic vocabulary of colourful descriptions, metaphors, and allegorical constructions, together with rhythmic metre and rhyme schemes as a way of keeping the civilization's history alive. In the oral tradition, the performance of epic poems was a highly structured affair, drawing from a common vocabulary of phrases, set against a well-established framing, before an audience who shared a common tradition of knowledge, and therefore a common understanding, of this unique vocabulary and its structures.

A new medium – the phonetic alphabet – arrives on the Grecian shores and within a short time society begins to feel the disruption of a new communication form that seems to threaten the very structural foundation of the culture. Indeed, the written word was an excellent choice for expanding empires, spheres of influence, and spans of control across vast geographies. The written word travelled well, alleviating the necessity for transporting the person along with his ideas or pronouncements. More important, the phonetic alphabet produced a cognitive shift in the culture concerning not only what was known, but what could be known. Instead of knowledge being a direct experience that was passed from person to person, literacy meant that what was to be known existed only as a written representation of the actual, visceral experience that comprised knowledge. Literacy separated the knower from that which was to be known, and inserted a proxy

representation, both in the form of words, and an author who asserted his authority with respect to that representation.

This, of course, changed everything! To be truly literate meant that a person would be able to call into existence the power and authority of an unseen, and often unknown, author by uttering the sounds represented by these ink marks on papyrus or sheepskin. Moreover, in the eyes of the illiterate masses, that literate person would somehow inherit aspects of that author's authority by the proxy vested in those written words, whether that author is God above, as in the case of the Bible, or the authors of policy and procedures manuals who merely think they are…

When we invoke knowledge that we obtain through the proxy of an author's book, we assume some of that author's patina of authority. So imagine the devastating effect that Johannes Gutenberg had on the authority of the Church when, in 1455, he began the mass printing of the bible on a moveable type press. The relative availability of printed books enabled an environment of increasing literacy, the ability of an ordinary person to have command of the word of God himself, away from the influence and power of the Church. Suddenly, people could contemplate and think about these representations of experience on their own. Perhaps they might even develop heretical ideas, such as those that led to the most famous – if only legendary – home renovation in history, when Martin Luther took his hammer and nails to the doors of Wittenberg Church and posted his 95 theses in 1517.

Luther questioning the authority of the Vatican regarding the sale of indulgences ultimately led to the Reformation, the Age of Reason and the Enlightenment. It enabled the emergence of science and philosophy throughout Europe. Knowledge became institutionalized, with institutions such as universities defining the means through which new knowledge could be added to the cultural compendium of wisdom. According to the

doctrine of literacy, that which was to be considered as new and valid knowledge had to be obtained objectively, with a distance or separation maintained between the knower and what was to be known. We call this the scientific method. In order for the body to be studied scientifically, a metaphysical separation had to be created between the mind and the body so that the body could be objectified. I call this "putting Descartes before des hearse." The resulting advances in science, philosophy, astronomy, and mathematics paved the way to the modern era. Industrial processes emerged that took what essentially were handcrafts and fragmented them into repetitive, sequential processes. The result was the industrial age.

The transition from cultural epoch to cultural epoch is not an easy one. Roughly speaking, it takes about three hundred years for the foundational knowledge ground of a culture to change, that is for the society to change its conception of what is valued as knowledge, who decides, and who controls access. The time span is relatively easy to understand: for the transition to be complete, there cannot be anyone left alive who remembers someone that remembers someone who was socialized and acculturated in the prior system of knowledge.

So where are we today? Ever since the demonstration of the telegraph in 1844, Western civilization has been "undoing" the effects of the written and printed word. Where the phonetic alphabet separated the sound of a word from its meaning, and encoded that sound in otherwise semantically meaningless symbols that we call letters, and combined those symbols into hierarchical groupings called words and sentences and paragraphs and, ultimately, books, telegraph recombined those symbols with sound, enabling the instantaneous transmission of information from person to person across a vast distance.

From a time marker of Morse's demonstration of the telegraph, we are in year 162 of the 300 year transition from the fundamental knowledge ground of mass literacy – what Marshall McLuhan called the Gutenberg Galaxy – to… something else. And, although I have just breezed through roughly 3000 years of history in about ten minutes we can observe that as the dominant mode of communication changes, so too does the rest of society. From the world dominated by the effects of mechanization – linear, sequential, hierarchical, and fragmented processes and thinking – we are in the midst of a transition to a very different way of being in the world, and a very different way of discovering what is new and innovative in our world.

In fact, if you are older than about 21 years of age, you are experiencing the contemporary world in a way that is significantly different than those who are 21 or younger. They are living in a world in which the Internet never didn't exist. They are living in a world in which Google never didn't exist. They are experiencing a world in which everyone who matters is either a click away, or text message away, or a speed-dialled-call away among a variety of devices, all of which – regardless of what they look like, or how they functionally behave, or what they are called – are the same: they are connection devices. Unlike we who were socialized and acculturated in a primarily literate societal ground, in which our experience with technology and media is primarily within a functional, linear, hierarchical context – all artefacts of Gutenberg – today's youth and tomorrow's adults and citizens live in a world of ubiquitous connectivity and pervasive proximity. Everyone is, or soon will be, connected to everyone else, and all available information, through instantaneous, multi-way communication. This is ubiquitous connectivity. They will therefore have the experience of being immediately proximate to everyone else and to all available information. This is pervasive proximity. Their direct experience of the world is fundamentally

different from yours or from mine, as we have had to adopt and adapt to these technologies that create the effects of ubiquitous connectivity and pervasive proximity – UCaPP effects.

In this ubiquitously connected and pervasively proximate, or UCaPP, world, knowledge flows through networks of people, and only under duress does it flow upwards through bureaucratic hierarchies. In the UCaPP world, sequential, logical causality does not hold, because related events occur simultaneously. In the UCaPP world, two diametrically opposite conditions can paradoxically exist at the same time, and in the same place — and if that place is a person's mind, they can exist there without causing the person's head to explode. Except, of course, for those who happen to exist in a work environment that is well defined by Dilbert.

By doing what almost no one else dares to do, that is, set aside your decades of linear, logical, training that is based in the scientific method, and instead embrace the chaotic complexity that seems to characterize our ubiquitously connected and pervasively proximate world, you, in your role as leaders, are creating precisely the environmental conditions from which innovation emerges. You see, innovation is not merely change, or something new. Innovation is one among many emergent properties of a complex, adaptive system comprised of people.

Complex systems are made up of a large number of independent elements, like people. These elements exchange information via interactions, the effects of which propagate throughout the system. Because complex systems – and in particular, systems that are interconnected via a network – contain many direct and indirect feedback loops, interactions are nonlinear. What's more, the effects are non-proportional. This means that seemingly small interactions may have substantial effects throughout the system, and what might appear to be substantial interactions may result in quite insignificant

system-wide effects. Finally, the overall system's behaviour is non-deterministic in nature, which means that the outcome is not directly predictable from what has come before, or from the individual behaviours of the elements – the people – within.

This has several major implications. You cannot plan innovation. You cannot manage innovation. Once you begin planning and managing, you create deterministic conditions that, by definition, stifle innovation. You see, innovation – as an emergent property of the complex, chaotic system that defines our business environment; that defines the realm of public policy with respect to a whole host of issues; that defines the ubiquitously connected and pervasively proximate world in which we are all now living – innovation requires autonomous agents, acting both independently and *inter*dependently. It requires proximity and interactivity – both feedback and anticipatory feedforward. Innovation stands in stark opposition to all the good management principles of control, accountability, and responsibility. Innovation rejects management bureaucracies, administrative procedures, reporting hierarchies. Innovation stands upon a principle of doing what no one else would dare to do – especially in the environment of the current government – and that is throwing away all of these obsolesced artefacts of the industrial age. Throw them away!

Now, here's one of those paradoxes that I mentioned just a moment ago. I am not telling you to be out of control, unaccountable or irresponsible. And that brings us to the fourth principle.

Beyond BAH

Did you ever stop to wonder why it is that the industrial-age society instituted bureaucracies, administrative controls, and hierarchies – or BAH! for short? Karl Marx had a possible explanation that he called the indeterminacy of labour problem. This indeterminacy represents the gap between the

actual work done and a worker's potential output or production. Back at the turn of the last century, the big question for supervisors and foremen was, how do we know who is working to their full potential, and who is putting on a good act? The owners obviously wanted to get the maximum production out of their workers for the least amount of money, and the workers wanted to get the maximum amount of money for the least amount of work. Over the past hundred years or so, there have been many inventive approaches to solving this problem through various means of coercion, motivation, encouragements, incentives, and threats. All of the BAH structures – bureaucracy, administrative controls and hierarchies – were constructed and refined to a high degree of sophistication to solve this perennial problem.

But unbeknownst to both managers and workers, the problem shifted from the indeterminacy of labour, to become the indeterminacy of knowledge. Rather than trying to measure and control the amount of production labour that is going to benefit the organization, managers are now trying to measure and control the amount of knowledge work – thinking, creating, and innovating – that is occurring to benefit the organization. In the general industrial case, one could argue that the productivity of the entire organization is effectively limited by the slowest worker. In the case of indeterminacy of knowledge, the problem is reversed. For the knowledge worker, the lower limit of corporate knowledge "production" is that of the best worker, since that person's knowledge can be electronically disseminated to all and become the norm, enabling new innovations and insights that can build upon, and exceed, that base level.

In other words, to be most productive in the knowledge environment of the UCaPP world, multiply your mind, and your ability to create and innovate, by giving it away to your co-workers, and to members of the social network of your total working environment.

Now, what is the effect of reporting and accountability controls on these knowledge workers? Under conventional thinking, we would conceive that such controls would encourage people to come up with more original ideas in order to take credit for them. But, accelerated by the type of UCaPP knowledge networks that define the contemporary working world, and pushed beyond the limit of its potential, such control and reporting reverses into fewer and fewer original and innovative ideas. First, remember that "taking credit" itself reverses into "being blamed" as a simultaneous effect. Second, the more we are compelled to *take* credit through various bureaucratic inducements, the more we are rewarded for our own ideas, the less likely we will be to share them freely and openly which encourages innovation.

Instead, to enable a culture of innovation, we all, as leaders, must create an environment in which not taking, but *giving* credit is valued, rewarding those who both build upon the ideas of others, and whose ideas are themselves built upon within the complex network of interactions, from which innovation emerges. The experts who hold knowledge are not the heroes of the UCaPP world. Rather it is those who enable the flow and cascade of knowledge, those that multiply their minds by giving their knowledge and creativity away, that help to create the cultural conditions out of which innovation emanates.

The last thought I will leave with you today comes back to the question I asked near the very beginning of this talk: What haven't you noticed lately, particularly about the four principles that enable the creation of a culture of innovation? If you line up the first three – See what's not there; Think what no one else can think; and Do what no one else dares to do – you end up with some very mundane and ordinary advice: See. Think. Do. But by putting them through the tetrad tool that enhances and extends our perception and cognition we get a reversal: See – what isn't there, what we have been conditioned to

ignore because our attention has been directed elsewhere for so long. An extension – Think – what no one else can think, in other words, beyond the imposed mental restrictions that limit creative cognition. An obsolescence – Do what no one else dares to do, because the societal ground in which their actions once made sense is now obsolesced. And the fourth principle – Multiply your mind by giving it away – is the retrieval, the dominant mode of the tetrad. One could say that this fourth principle is the retrieval of simple, old-fashion charity, but in a new and incredibly powerful form. Because in the UCaPP world, multiplying your mind by giving it away is another way of affirming that together, we're all smarter.

About Mark Federman

An unconventional, yet strategic thinker, Mark Federman has more than twenty-five years' experience in the high-technology industry as executive, manager and consultant, spanning disciplines including research and development, marketing, sales, operations and strategic leadership. Until recently, Mark has played the role of Chief Strategist at the McLuhan Program in Culture and Technology at the University of Toronto. He has been a visiting professor at the Fachhochschule in Kiel Germany, and is regular guest lecturer at Högskölan för Lärande och Kommunikation in Jönköping Sweden, and elsewhere. He is the co-author, with Derrick de Kerckhove, of *McLuhan for Managers — New Tools for New Thinking.* Some of his recent explorations have examined "The Penguinist Discourse: A critical application of open source software project management to organization development," "Why Johnny and Janey Can't Read, and Why Mr. and Ms. Smith Can't Teach," "Discovering the Passion in Your Work and Your Life," "The Ephemeral Artefact – Visions of Cultural Experience in 2020," "How to Know What Business You're Really In," "Integral Awareness in the

Connected Society," "The Cultural Paradox of the Internet," and "Creating a Culture of Innovation." His recently completed research proposes the notion of "role*" (pronounced "role star") through which people can become aware of the effects of the roles they play, and how to actualize these effects to achieve personal motivation, engagement and passion throughout their lives. Mark is currently engaged in Ph.D. research at the Ontario Institute for Studies in Education at the University of Toronto, the theme of which is The Emergence of the Organization of the Future, striving to re-theorize the concept and consequences of organization for our contemporary circumstances.

An internationally sought lecturer, speaker, facilitator and playshop leader, Mark consults to businesses and government agencies as a strategy advisor, using Marshall McLuhan's thinking tools as an approach to gaining awareness, perception and insight into complex issues in an environment of continual change.

Mark Federman can be reached directly at **federman@sympatico.ca**. To keep up with Mark's current thinking, visit his weblog, which is located at **http://whatisthemessage.blogspot.com**. Mark's speaking and playshop facilitation engagements are often arranged through the National Speakers Bureau, **http://www.nsb.com**.