

*The following essay was solicited by Robert Steele of the Central Intelligence Agency for a Symposium on Open Source Intelligence. It was 1993 and I was skeptical. CIA? Really? I did some checking and, sure enough, his employment was verified, though the scope of his job was not.*

*The essay was included in Volume I of the Proceedings of the Second International Symposium: National Security & National Competitiveness: Open Source Solutions Proceedings, 1993. I was asked to speak at the Symposium but was unable to attend. Mr. Steele's goal with this series of symposia was to push government agencies such as the CIA, NSA, and FBI toward an expansion of the use of open source intelligence.*

## The Age of Imagination: Coming Soon to a Civilization Near You

by Charlie Magee

Everywhere you look, everywhere you listen, the entire “civilized” world is trying to understand, to plan for, and to profit from “The Information Age”. But, in terms of national competitiveness and national security, this focus is creating its own blind spot. We seem to be forgetting that the rate of change in our global society is not simply faster than it was 30 years ago. It is accelerating. Accelerating right on through the Information Age toward another massive transition in the way we humans work and play. A transition that might be less than 25 years away.

In other words, the Information Age is almost over and we aren't ready for the changes coming our way. A good word for what is happening now? Practice.

The problem is that we're basing our decisions on an inadequate metaphor: economics. People today make an income by manipulating information, therefore, The Information Age. People made an income with industrial and agricultural tools, therefore The Industrial and Agricultural Ages. The assumption is that human society can be adequately described in the terms of the tool we use to purchase survival. This type of planning for the future is like trying to walk across town with binoculars glued to your eyeballs. We need a bigger metaphor, one that encompasses much more than economics, one that occurs before anything can be purchased or acquired. I suggest that communication is a better metaphor for understanding human evolution. Evolution equals survival of the fittest communicators.

(One might protest and say that economics is more basic than communication because one must survive in order to communicate, i.e. an ancient hunter of 40,000 years ago, alone in the grasslands, had to eat before he could communicate. Consider this, however: to this hunter, the wind, by carrying smells, communicates the direction of prey. The sun, by its position in the sky, communicates which animals are at the water hole. The hunter's stomach, by growling, communicates a sense of urgency. Communication happens first. Then the hunter can eat.)

It took the universe 10 billion years to create a species that could speak. It took that species 3 million years to create a communication tool called writing. Then just 12,000 years to create the printing press. 500 years to create the computer.

Put these figures on a chart: billions, millions, thousands, hundreds, then ... decades? We're looking at exponential change. The Information Age is already several decades old in the USA. If we take a slightly more global view, then its age is closer to fifteen years. And if it might only last a few decades then we must begin to wonder about what is coming next. Will we hit an evolutionary wall? Reach a comfortable cultural plateau? Break on through to everlasting peace and happiness? There are clues in the pattern of communication evolution.

The most successful groups throughout human history have had one thing in common: when compared to their competition they had the best system of communication. The fittest communicators—whether tribe, citystate, kingdom, corporation, or nation—had (1) a larger percentage of people with (2) access to (3) higher quality in-

formation, (4) a greater ability to transform that information into knowledge and action, (5) and more freedom to communicate that new knowledge to the other members of their group.

Let's compare the US, Germany, and Japan for example. In general, we're equal on these five variables of communication except for the ability to transform high-quality information into knowledge and action.

The success of the Japanese and German economies is evidence of this. For at least twenty years the people of the United States have been totally ignoring the high-quality information available and we have based our decisions on habit and out-of-date information—what-we-want rather than on what-is. The accurate information we're ignoring: available resources on this planet are limited and getting more expensive by the day. Yet, we still act as if fossil fuels are cheap and abundant; a 200 year habit is hard to break and many Americans still seem to think that we have a God-given right to those resources no matter where on the planet they are located. We have failed to understand and act upon the fact that our resources are limited. The Germans and Japanese, however, have had to live with that fact since the end of World War II.

The struggle of evolution has caused us to continually upgrade our tools of communication. These new tools are always faster, carry more volume, consume fewer resources per message, demand more cooperation among participants, and their use spreads throughout the population more quickly than previous tools did.

For example: writing communicates more volume, more accurately, at greater distances in time and space than speaking face-to-face does. The telephone requires a much more cooperative society than one which requires making marks on papyrus. The computer has spread to a significant percentage of the world's population much more quickly than writing or printing did.

So if we are about to undergo a transition to yet another stage of evolution, it will mean that even faster communication tools are about to be created. There are at least three methods of communication which transfer information faster and in more volume than our current my-brain-to-my-keyboard-to-my-computer-to-your-computer-to-your-screen-to-your-brain connection. In descending order of likelihood: (1) A direct, physical connection of the human brain to a computer. (2) A computer with artificial intelligence connected to another so-equipped machine. (3) Human mental telepathy.

We can discount telepathy on a global scale, probably for several hundred years, if not forever. Artificial intelligence isn't too likely because by the time we understand the human mind well enough to copy it in silicon, we'll be beyond having a need for such a tool. The best bet is on a hybrid breakthrough created by the meshing of nanotechnology, computer science (including artificial intelligence), biotechnology (including biochemistry, biopsychology, etc.), and virtual reality. These are the fields from which will come a tool for connecting a brain to a computer.

Whatever form the brain/computer connection takes, we can make some guesses on its effects based on what today's communication tools are doing to us now. Currently, we're experiencing the re-tribalization of nations and the downsizing of corporations. People who have learned to rely on institutions for support are falling by the wayside. Laid off and laid waste. The survivors are going to be the people who are acquiring the new tools and going the multinationals one better by creating tiny (less than 10 employees) companies that develop project-based transnational joint ventures with other small companies. These changes are directly related to the fact that the tools of communication are making it easier and easier for groups to get more work done with fewer people. What we are experiencing now are merely the changes involved in transferring our information handling tasks—menial, uninspiring chores which can now be seen to be an inappropriate waste of human mental power—over to machines. As Marshall McLuhan said, the computer and related technologies have extended our nervous system into the environment. The development of a direct brain/computer connection will complete the extension.

So, as the tools of the agricultural age control the products of the hunter/gatherer age, and the industrial tools control the products of the agricultural age, and the information tools control the products of the industrial age, what will control the information tools? The human Imagination. The human Spirit. The ineffable Mind.

The task we should undertake now is to learn to develop our imaginations, for it is the most imaginative people of any period of human evolution who are the leaders. The problem is that we'll need many more imaginative people, as a percentage of the population, than we've ever needed before.

That's right. Don't expect a planet full of peace and love and happiness just because imagination will be the currency of our future economy. We'll have just as many "bad" people then as we do now. But they'll be doing bad things in a different way. Like, who handed you that drink and what kind of biochip did they spike it with?

At the moment the biggest threat to national security is no longer a barrage of nukes, it is the disruption of the national communication infrastructure. Our companies must have quick, accurate communication with suppliers, customers and competition to survive. As more and more of us begin to venture onto the net to play and learn and work then the threat will be in any disruption of the global communication infrastructure. Obviously, the risk increases the more we come to depend on these tools.

The tools of the Information Age have spread throughout the population in mere decades. The Age of Imagination will spread much faster and the risk/reward potential will go out of sight. If we're confused by a planet which is currently re-tribalizing, consider a situation in which each person is his/her own tribe, his/her own transnational corporation. Alliances will be springing up, accomplishing work (and play and construction and destruction), and breaking apart on a moment by moment basis. What will happen when you don't like the direction of my imagination? Will you get together with your friends to overpower my wavelength? Will I retaliate with a quick linkup of my friends? Will there be a market for BrainShields™? Yes, yes, and yes.

From a security standpoint, the current communication tools have created a world in which it is increasingly difficult to separate the good guys from the bad guys in the global marketplace. In an Imagination Age it will be impossible. Indeed, the coming changes will create a situation in which the duties of the military and intelligence communities will be tied less and less to the desires of the nation-state and more and more to the stability of a global communication system and the protection of imaginative individuals everywhere. In such times it will be considered as much a dereliction of duty for an intelligence analyst to ignore a threat to an electronic switching station in Zimbabwe or France as it would be to ignore such a threat to a U.S. site.

To prepare for life in such a world we need to make a best guess as to what kind of people we'll have to be to survive and thrive in the Age of Imagination. We can work our way back from there.

As McLuhan and others have said: communication at electric speeds is creating a generation of generalists. The Imagination Age will create a society of comprehensivists. A rich dream life will become as important as impeccable logic. Physical control bordering on the gymnastic will be very handy. On-demand control of your brain's wavelengths (alpha, theta, etc.) will be a definite plus.

To get there from here the most important step is for us to learn how to learn. Unfortunately, our system of education defines learning as the memorization of "facts". If, somehow, you were one of the lucky ones who managed to learn about learning in spite of this, you're halfway there.

Next, develop a healthy sense of curiosity (it might kill cats but it deepens humans). Follow up by exercising your creativity. Scientists should develop an art. Artists should do science. Get your body in good shape. Learn to relax. Learn to concentrate. Accelerate. Slow down. Learn your rhythms so you can play your rhythms like a virtuoso plays her violin. Study systems theory. And on and on. Do anything that interests you and that you have time for.

Don't worry about not getting perfect at anything because there is an antidote to the "jack-of-all-trades, master-of-none" syndrome: do your best to discover the structure of that human activity which interests you the most and then apply that discovery to any field of human activity which interests you later. The structures are similar, it's the layers of detail that differ. A comprehensivist, knowing the general structure of things, can quickly adapt to any field of inquiry, any area of imagination.

So what do you do to make a buck, protect your interests, just plain survive? Concentrate on the five elements of successful communication. If you can increase the number of communication-capable people in your industry/company/home, if you can create and transmit high-quality information, if you have the imagination to transform that information into knowledge and action, if you can increase the freedom of the communication system, then you have a much better chance of surviving the coming changes.

That's a lot of work to do. A lot of play, too. It depends on how you look at it.

Even if I'm wrong, even if this current task of teaching machines how to handle information takes a century or more, time spent working on these goals will not be time wasted. We'll be making ourselves more valuable to our families, our businesses, our countries, our planet.

But what if I'm right? What if the Information Age is already winding down? What if the Age of Imagination is just around the corner? What if the tools of the Imagination Age permeate the planet in just a few short years? Won't there be another transition bearing down on us? Well, then...what then? Tune in next time...

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