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The Whole System is Broke and is in Desperate Need of Fixing: Notes on the Second Industrial Revolution

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Ian I. Mitroff
University of Southern California

Susan A. Mohrman
Center for Effective Organizations

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Center for Effective Organizations - School of Business Administration
University of Southern California - Los Angeles, CA 90089-1421 (213)740-9814

There comes a time in the life of every nation when piecemeal, band-aid solutions to its basic problems no longer suffice. It must turn its total energies to dealing honestly with its true problems, and not in treating symptoms, if it is to survive.

We have reached such a critical point in the life of the U.S., if not all nations worldwide. Earlier conditions which made for the overwhelming success of the U.S. and Western democracies have abruptly ceased to exist. As a result, the very institutions which were designed on the basis of those conditions, and which served us well for so long, are now in need of total redesign.

The dramatic upheavals in virtually every one of our industries, professions, and organizations make clearer day by day that we are beyond the point where superficial, quick-fix remedies, or piecemeal tinkering can correct the deep changes that are needed in the structures of our institutions and in the mental attitudes of the people who work in them. We challenge anyone to pick up a copy of such popular American periodicals as Business Week, Fortune, and Time within the past five years and not find in every single issue an example of at least one major organization, industry, and profession that was not in serious economic trouble and/or experiencing severe change. One finds in fact that there is not a single segment of U.S. society that has been exempt from the pressures of massive change.

The reason is that we are in the midst of a revolution every bit as profound in its implications for our time as the Industrial Revolution was some three hundred years earlier. Any one of literally a hundred recent examples could be used to illustrate the nature of this revolution. Two in particular however are not only sufficient to make the point but are extremely important in themselves. The first concerns a recent run on Savings and Loans (S&L's) institutions in Ohio. The second concerns the recent catastrophe in Bhopal, India resulting from chemical explosions at Union Carbide's plant.

The significance of what happened in Ohio is best appreciated by considering two questions: What kind of world has it become wherein the fate of S&L's in Ohio is tied to that of an obscure securities firm in Florida, and further still, wherein the value of British oil stocks is in turn linked to what happened in both Ohio and Florida? What could possibly connect together all three events in such vastly different regions of the globe?

On March 4, 1984, ESM Government Inc., a Florida securities dealer, collapsed because its risky trading investments went bad. On the following week, Home State Savings

Bank, which one commentator labeled as "a distinctly _minor-league_ [emphasis ours] Cincinnati savings-and-loan,"1 also closed its doors. The reason was that more than one-third of Home's loan portfolio was invested in ESM securities. One week later, the value of Great Britain's enormous North Seal oil inventories dropped 8% in five days as an "indirect" result of what occurred to S&L's in Ohio.

If one can come to see that what happened in Ohio was part of a _total_ chain of events that is now more normal than ever, then one can begin to appreciate that what happened was not only almost inevitable but that the same pattern will occur again and again unless we finally understand why it is happening and take proper corrective action as a result. The chain begins with recognizing what has happened to more industries and professions than at any other point in the U.S.'s history: deregulation. Where once banks were tightly regulated or controlled by Federal laws in the amounts and kinds of interest payments they could offer on deposits, deregulation changed all that in one fell swoop. Literally overnight, banks, S&L's, mortgage, security, and investment houses found themselves in fierce competition with one another and encroaching on one's traditional businesses more than they ever had. As a consequence, all of them were not only forced to become more competitive for customers, but for many of them, this meant learning how to compete for the first time in their lives. (To show how general this phenomenon is, it should be noted that deregulation affected all kinds of businesses, e.g., airlines, telecommunication companies and utilities. It even affected specific companies like Eastman Kodak that had virtually been without serious competition in their industry, i.e., in a state of pseudo-regulation.)

As an important aside, the April 15, 1985, edition of the Los Angeles Times contains one of the latest examples of this encroachment which is now occurring daily. California Safeway stores, already one of the largest cashiers of personal checks in the state, announced that 217 of its stores will be equipped to accept bank money machine cards issued by all California banks. The new electronic system that will permit this will expand the possible users to 12 million by adding banks and S&L's that were not previously part of the network. These include California's five biggest banks: Bank of America, Crocker, First Interstate, Security Pacific, and Wells Fargo. In the style that has come to be typical of such new encroachments, Frank Nowakowski of City National Bank, which operates the 200-bank Instant Teller Network, proclaimed, "It's going to make a lot of financial institutions sit up and take notice."[2]

As if the pace of change weren't fast enough, a mere ten days later, Sears unveiled a new credit card, Discover, that offered features that other general purpose cards such as Visa and MasterCard don't have. With Discover, users can purchase goods and services from retailers other than Sears such as airlines, hotels, and stores. In addition, they can obtain emergency cash and cash checks. They are also automatically protected in case the card is lost or stolen. Further still, Sears will offer the card holders an exclusive family savings account. It will feature a uniquely tiered interest structure so that the interest on an account will increase with its balance. Finally, Sears is negotiating to have its new card be compatible with existing nationwide automated tellers so that Discover users can withdraw their money anytime anywhere. With Discover, we have in effect realized the single, all-purpose financial institution. Banks as we have traditionally known them are virtually obsolete.

Regulation in effect had not only limited the levels of interest institutions could offer customers, but more critically it had limited the kinds of investment packages and services they could offer. As a result of deregulation, traditional savings institutions in particular were forced to take on risky and riskier investments than they had had experience in managing in order to offer to consumers the much higher rates of return they had been educated by those very same institutions to come to expect. But this meant that somewhere along the line one of those risky investments was bound to fail whether for legitimate financial reasons or for shady ones as well.

For those of us who don't have our funds directly tied up with a particular S&L, it may not matter much for which reason an S&L fails. The important thing is that such failures are almost inevitable. They are bound to happen given that success is never a sure thing. This part of the chain of events is thus normal. It's always been there as an inevitable feature of financial life. It is the other parts of the chain which have traditionally not been normal which make today's business climate so different.

What happened to an admittedly "minor-league" S&L in Ohio had distinctly "major-league" repercussions. It sent major shocks throughout the entire national and international financial markets. This occurred because all of the world's financial markets are now extremely skittish over the state of the U.S.'s financial condition: high federal deficits, worry whether inflation is really under control or destined to reappear, worry over the fate of long-term interest rates, the huge debts of Third World countries owed to U.S. banks and the catastrophe that would occur if these countries failed to make good on their loans, the general health and long-term growth prospects of the U.S. and world economies, etc. Anything that thus comes along and taps into these underlying fears is bound to set off sharp and severe reactions. The form the reaction took in this case was to drop the value of the U.S. dollar against other world currencies. This occurred because the fear was that the deficit-ridden U.S. financial system is so strained to the hilt and that what happened in Ohio is just one more symptom or signal of the worst that could really happen.

In reaction to all these worries, the concluding events occurred in the chain that finally tied everything together. Between March 18 and March 20, 1985, the U.S. dollar fell against the British pound in one of the biggest drops ever recorded in the history of floating exchange rates.3 But since British oil assets are measured and traded directly in U.S. dollars, this meant that those holding British oil assets took a severe beating. Hence, the chain was now completed and what started out as a "regional" crisis in a "minor-league" Ohio S&L turned out to have international repercussions. Little matter that this one like so many of the other crises we have recently come to experience quickly seemed to subside and was brought under control by sweeping Ohio S&L's under Federal bank charters to protect their holdings. The fundamental point remains nonetheless. We are more tied together and inter-dependent on one another and at every level of society than at any--repeat, <u>any</u>--previous point in world history. <u>Everything everywhere now truly affects everything else</u>.

If there are any doubts whatsoever about the truth and meaning of the last sentence in the preceding paragraph, then the lessons from what happened at the Union Carbide plant in Bhopal, India should be enough to dispel them once and for all. By "lessons" however we mean something quite different from what is usually implied by the term. For us, the lessons to be learned from the Bhopal tragedy include but go beyond the normal ones.

Since the placing of cyanide in Tylenol, Mitroff and Ralph Kilmann 4 have been studying the full range of tragedies and catastrophies that can strike corporations: the linking of Toxic Shock Syndrome to Rely Tampons; the placing of cyanide in candy bars in Japan; the Mexico City gas explosions. The most recent and most tragic to date is merely and unfortunately the Bhopal gas leaks which killed thousands and injured even more. By all measures it is the worst industrial accident in history.

What all these cases have to teach us is that they are not due <u>solely</u> to the acts of a few isolated madmen, faulty plant design, poor operator training, etc. These factors are all responsible to a degree, but they are not the real heart of the matter. The real heart of the problem, and what Bhopal in particular has to teach us, is that the ideas we inherited from the Industrial Revolution are now totally inappropriate for managing in today's world.

One of the most profound legacies of the Industrial Revolution was the "mental road map of the world," of reality, that it firmly implanted in people's minds. This map consisted of the basic idea that in essence the world was nothing but a Simple Machine, albeit a big one at that. Among the many nice properties of machines, one in particular is especially critical: machines can be easily broken down into their individual components or parts. Hence, if a machine is broken, it is a relatively simple matter to isolate and to replace the defective "parts."

This notion was virtually carried over intact into the design of all our social institutions and our attitudes toward solving complex problems. Thus, our instutions, largely bureaucracies, were designed in the image of a machine. Complex problems, like people's jobs, were broken down into a large number of supposedly simple, independent tasks. Further, the technical aspects of problems were considered in isolation from the environmental, legal, moral, political aspects. This strategy which worked so well in the 18th, 19th, and even in the early parts of this century, now fails miserably.

Today there are virtually no problems, from pollution, toxic waste management, to high interest rates, to international finance, whose various aspects can be considered in isolation from one another. Even stronger, all problems now affect one another in complex ways we are only just beginning to understand. The top managers of firms we have worked with and interviewed are beginning to comprehend this even if they don't quite know what to do about it. For instance, it's impossible to understand what really happened in Bhopal without considering the simultaneous interaction of Union Carbide's corporate structure, the history of its entire safety record in the chemical industry, its social and political views of Third World countries, its safety technology, and the innumerable assumptions both the company and the Indian government made about one another.

In short, the world can no longer be comprehended as a Simple Machine. It is a Complex, Highly Interconnected System. The basic trouble is that <u>most people are still trying to solve the problems of a complex system with the mentality and tools that were appropriate only for the world as a Simple Machine</u>. Whereas the problems of the world as a Simple Machine could be broken down and hence solved independently of one another, the problems of this new systems age can not. But for this reason the old approach to problems not only doesn't work anymore but it actually makes things worse.

That none of these points are merely theoretical or academic can once again be illustrated by any one of a hundred recent examples. For instance, the April 29, 1985 issue of _Fortune_ reports the difficulties that Hewlett-Packard has experienced in building any significant share of the market in personal computers despite spending over 50 million dollars since 1983. Many of HP's problems in this regard are directly traceable to _fragmented_ product development. As _Fortune_ writer Bro Uttal puts it:

> Traditionally [HP] split itself into scores of small autonomous divisions...[each of which] developed, manufactured, and sold its own products, sometimes in competition with other divisions...it's exactly the wrong way to develop complex computer _systems_, which comprise many different products that must work smoothly together [underscoring ours].5

If one looks at the world in the image of a very Complex System then one sees that the modern corporation operates in a vastly more complex environment than ever before. It is continuously buffeted by a large and dynamically changing set of forces termed _stake_holders to distinguish them from the more limited class _stock_holders. Stockholders are still important.

However, they are just no longer the sole force driving modern corporations. Stakeholders are all those parties and special interest groups both internal and external to a corporation who affect and who in turn are affected by the policies and actions of the corporation. Some common examples are: competitors, unions, regulatory agencies, suppliers, trade associations, environmentalist groups, news media, etc.6

Unless organizations learn to think as broadly and as radically as they can to analyze who their current stakeholders are and to anticipate who they might be, they are in real danger of going under.7 In the end, the real lesson of Bhopal is therefore this: <u>no potential stakeholders (or parts of the system) however far removed from the home base of a corporation and seemingly insignificant can be ignored with impugnity any longer</u>. A new concept of the "bottom line" is thus emerging against which increasingly all corporate performance is being judged: there is no place left for corporations to hide their actions anymore.

Unlike Union Carbide, the executives of socially responsive firms implicitly understand this new concept of the bottom line. It is not that the prevention of catastrophes will ever be perfect or that any corporation however socially conscious it is will ever fare perfectly but the executives of such companies have the notion of social responsibility to their community and their employees deeply ingrained as part of their corporate culture. It would be unthinkable for them not to do much more than is minimally required to insure against the possibility of a catastrophe.

These then are the real lessons and true significance of what happened in such disparate places as Ohio and Bhopal. Problems can no longer be as effectively contained or as easily isolated as they once were. Past crises were the result of breakdowns in relatively isolated and contained parts of our huge societal and economic system. Today's problems and crises are entirely different in scope and in character. Today it is the whole economic and social system itself that is in world-wide crisis. Hence, the whole system can't be cured by fixing individual parts since this strategy fails to appreciate that it is the entire organism that is in need of treatment.

The implications of this realization are truly far reaching. For one, it means we have to redesign the mental attitudes with which we as individuals approach problems. For another, it means we have to redesign virtually every one of our institutions in how they respond to and handle important problems. For still another, it means realizing once and for all that problems such as that which afflicted Ohio's S&L's and Bhopal can not be effectively solved on just one or two of the many levels that compose complex societies.

The essential characteristic that all problems today increasingly share is: what starts out seemingly confined to one part of the globe and at one limited point in time quickly, if not instantaneously, spreads in unexpected and in strange ways to have impacts on the entire economic and social system of the world. But if this is so, is it not clear that any strategy that is truly effective in containing the problems we face will have to operate on all the various levels that compose societies simultaneously? For instance, is it not clear that for both individuals and institutions to handle the kinds of problems about which we've been talking that they will need to handle vastly more complex, novel, and even bizarre chains of reasoning than they have ever had to? 8

In the world as Simple Machine it was unnecessary to consider such chains. They basically just didn't arise. Things were more immediately connected through direct "causes" and "effects." But in a world where everything now affects everything else, it is increasingly more difficult to say clearly and simply what is "cause" and what is "effect." Everything is simultaneously cause and effect.

At the same time that individuals need to learn how to handle more complex chains of unexpected events, is it not equally clear that organizations will also have to learn to put an even higher premium on rewarding creativity than they ever have before if they are to encourage individuals to take the risks that such thinking demands? How in short is one to get the creativity that is more desperately needed than ever in our organizations if we do not consciously reward it? Further still, it is becoming clear that even these steps are not enough. Is there not a need for regional and national economic policies that explicitly reward and even favor those organizations and even whole industries that place a special and a tangible premium on fostering creative anticipation of the kinds of problems that now affect us all? In short, are we not led step by step to the realization that we must institutionalize creativity on a scale never before imagined in human history if we are to regain our international business edge? Finally, if we have a national industrial policy for the U.S. of favoring those individual organizations, industries, and regions of the country that are anticipating problems that now affect our very economic well-being, can we really achieve this for the U.S. without some mechanisms for doing the same for the entire world economy? Can the U.S. economy now prosper independently of the world's? Indeed, can any economy now do it for long independently of the rest of the world? We think not.

Because these points are extremely important to our whole argument and what may be clear to us may not necessarily be to others, they deserve to be explicated further. Recently, Gifford Pinchot III has reintroduced on a catchier and grander scale the idea of intrapreneuring first proposed by Peter Drucker and others many years ago. 9 It's basically a nice, appealing idea. It essentially says that you don't have to leave the large corporation to become entrapreneur, i.e., to start your own business around an idea for a new product that you yourself have invented. Pinchot cites numerous examples from such large corporations as 3-M (sticky note pads) and GM (the Fiero automobile) to prove his points.

The advantages to being an intrapreneur instead of an entrepreneur are tremendous. You don't have to seek and to raise the significant amounts of capital necessary in starting a new business. For another, you don't have to recruit and train employees. Further still, you don't have to build new facilities, set up marketing and distribution channels and networks, establish dealership and service centers, etc.

On the other hand, the disadvantages that need to be overcome are just as formidable. For one, traditional large-scale organizations are just not set up to recruit, to appreciate, and to reward intrapreneurs. Intrapreneurs go directly against the grain of those who traditionally make it to the top of large corporations and who manage it along the way. Intrapreneurs are more concerned with the thrill of chasing new ideas and of seeing them converted into the reality of a new product than they are of playing it safe within traditional organizational games and thereby of making it to the top. But this means that if intrapreneurs are to be more than just tolerated, their differences and vital importance to the organization must be explicitly and systematically recognized from the very top. In brief, the organization must very deliberately and very self-consciously set up different reward and organization (e.g., reporting) structures to provide intrapreneurs with the necessary official support to survive and to prosper. If organizations do not do this, their "normal" bureaucratic structures and the mentality which underlies it will kill off intrapreneurs even more effectively than the process with which the human body rejects a foreign transplanted organ. For make no mistake about it, in terms of normal bureaucratic processes the intrapreneur _is_ a threat as dangerous as any the organization will ever face including external competition.

Notice carefully what this brief discussion of the intrapreneur has accomplished. It has shown how both the _intrapreneurial individual_ and the type of _organizational_ structure that will support such individuals are mutually dependent on one another. Neither can basically exist without the other. The creative individual and the creative organization cannot survive without one another. This much is clear from Pinchot's book alone. But unfortunately here is where it, like many of the recent popular books on management, falls down.

Pinchot does not consider the other levels of society with which one must deal if intrapreneuring is to be firmly implanted within our entire culture, and not just isolated parts of it. For instance, if intrapreneuring is just one (not "the") important means by which U.S. corporations are to revitalize themselves and if all of us as a society have a vital stake in this revitalization, then ought we not to at least raise the following questions: Why shouldn't regional governments provide local incentives (e.g., tax breaks) to those organizations willing to adopt "serious" intrapreneurial programs?; why shouldn't we have a U.S. national industrial policy of favoring those whole industries and specific corporations willing to pursue vigorous intrapreneurial programs? Notice that if the emphasis was on intrapreneuring or institutionalized creativity then this would get beyond the barriers that have hampered traditional discussions of industrial policy, namely whether support ought to be given to old smokestack industries (e.g., steel) versus new high-tech ones like electronics. The emphasis instead would be on where it should properly be focused: those industries and specific companies willing to undertake systematic programs of long-term, demonstrated, institutionalized creativity and innovation.

Needless to say, there are tremendous problems with designing governmental mechanisms to actually carry out such programs and one would thus have to say a lot more about them in order to actually design them. For the purposes of this article, we must merely be content to point out that such questions or issues naturally and inevitably arise when we are talking about treating the economic ills of a whole society. We can no longer confine ourselves to the levels of the individual and the organization and hope that everything will somehow just work out magically on the bigger scales of regions of our country and the whole society. It just doesn't work that way any longer.

It is important to emphasize that many of the top executives to which we have talked and worked with seem to recognize these points implicitly. For instance, we have talked directly to some of the key executives at 3M involved in the development of sticky note pads, one of the prime examples of intrapreneuring that Pinchot deals with in his book. These executives recognize explicitly the fact of international competition and that the world economy is now truly globalized. Further, they also recognize that they have to consider the impact on their businesses of many more factors from every quarter of our society and the world than they have ever had to. This is not to say that they explicitly endorse our analysis of the problem as we have presented it here. However, they are closer to it than they ever have been.

Following the same line of reasoning, it is equally important to see why the same questions extend up to the international economy. In her important and well-argued book, Cities and the Wealth of Nations, Jane Jacobs makes the point that historically the natural focal point of economic activity has been the city-region. The city-region has historically been big enough to provide the diversity needed to produce and to absorb the variety of goods men need in order to survive. At the same time, it has also been small enough for men to relate to and hence to comprehend, to manage. For these and other reasons, Jacobs argues for a return to the city-regional idea on an even larger worldwide scale. She thus decries the notion of national, and God forbid, international or global planning bodies.

We can well enough understand Ms. Jacobs' fears. The trouble is however well-argued her thesis is, contemporary events have globalized the world economy whether one likes it or not. That's the whole point of the Ohio S&L's and Bhopal stories. World events crisscross old national boundaries without any regard whatsoever for them. It would be nice indeed if we could return to the nice, neat, and safer world of small nation states and their regional economies but it doesn't seem that this is the long-term direction in which the world is headed.

This does not mean that we do not necessarily require city and regional economic policies. It merely means that we require <u>some</u> mechanisms for coordinating, or at the very least for understanding, how city, regional, national, and international economic policies impact on one another.

It has long been an unwritten and even a written axiom of business life that "if it's not broken, don't fix it." If we had to sum up the import of this entire article in a few words it would be this: The world today not only requires more fixing on more levels than ever before, but it requires entirely new kinds of fixes as well; it requires anticipating where the system <u>as a system</u> will possibly go wrong before it actually has and starting the fixes before the breaks are fully apparent to everyone; <u>perpetual in-place fixing is the new order of things</u>. Again, we have encountered more top executives than ever before that are beginning to appreciate this.

How did we get from the seemingly safe and secure world of the Industrial Revolution, from in short the world as Simple Machine, to the world as one Big, Interconnected System, if not a Big Mess? And what can we do to manage smarter in this kind of world? <u>This</u> is <u>the universal</u> challenge facing management today.

<u>Essential Lessons: Some Do's and Don'ts</u>

Do	Don't
1. Expect that increasingly you personally and your organization will be the center of an unexpected and unorthodox chain of events in the very near future.	1. Mislead yourself for one second into thinking that you and your organization will be magically exempt from what is happening around you.
2. Expect that what starts out as a local or regional crisis/event will have international repercussions of some kind, and vice versa.	2. Expect that a crisis or unorthodox series of events will stay confined or contained in your local area, or alternatively that an international crisis or series of events will not affect you.

3. Everything that you can to think through and anticipate how every local and regional event could be linked through a series of unexpected events to have international repercussions.	3. Avoid thinking about such things precisely because one can never know for sure exactly what events will link up in strange ways before they actually do.
4. Read as widely and as broadly as you can to anticipate what things are likely to link up; break out of traditional patterns.	4. Read just in a narrow, prescribed, professional area.
5. Make a concerted effort to think constantly about the two or three most unprobable events that could be linked together and force yourself to think creatively how they could be related and affect your company.	5. Resist such exercises; take the easy way out; no one ever said creativity was a snap.

NOTES

1. Charles R. Morris, "Ohio Offers a Lesson in Banking, There Are No Safe Havens," The Los Aneglès Times, Sunday, March 31, 1985, p. 3.

2. John M. Broder, "217 Safeways Will Be Equipped to Accept Bank Cards," the Los Angeles Times, Monday, April 15, 1985, p.3.

3. "In all, the dollar lost 6% of its value against the currencies of major U.S. trading partners in the past three weeks. `It's never been as wild as this,' says Christine Patton, a senior vice president of Manufacturers Hanover Trust who runs that bank's foreign exchange operations," Greenwald, op.cit., p. 53.

4. See Ian I. Mitroff and Ralph H. Kilmann, Corporate Tragedies, Product Tampering, Sabotage, and Other Catastrophies, Praeger, New York, 1984.

5. Bro Uttal, "Mettle-Test Time for John Young," Fortune, April 29, 1985, p. 243.

6. See Mitroff and Kilmann, *op.cit.*, for a more extensive discussion of the stakeholder concept; see also Richard O. Mason and Ian I. Mitroff, *Challenging Strategic Planning Assumptions*, John Wiley, New York, 1981.

7. Mitroff and Kilmann, *op.cit*.

8. *Ibid*.

9. Gifford Pinchot III, *Intrapreneuring*, Harper and Row, New York, 1985.