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## **Retooling for the Cyber Age**

*An Original Essay Written for CSAB*

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# Retooling for the Cyber Age

*by Dana G. Mead*



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The other day a friend who is enthralled with the advent of the Cyber Age and who has read all of the books by the gurus of virtual reality was excitedly describing how he had booked a hard-to-get restaurant in San Francisco. Not only had he booked it, he had perused the menu and ordered the abalone, selected the table location, obtained the name of his waiter for that future evening and even scanned the latest food critic assessment of the place. All of this took just a few minutes in the new and virtual world of cyberspace. What he did is old hat today. It's reality and it's wonderful.

But I'm a realist—and an industrialist—from what is now often disparagingly labeled the “old economy.” To me my friend was telling only part of the story.

I kept thinking that someone has to manufacture the tables, the chairs, the silver, and the table linen. Someone has to grow, process, and ship the food. Someone has to produce and distribute the gas for the ranges and someone up in Napa or over in Bordeaux has to bottle the wine. The products of the “old economy” are very real and necessary to support the “new economy.” So, of course, are the workers who design, manufacture, distribute, sell, and service these products.

My musings lead me to a few tentative conclusions about the advent of the Cyber Age and the knowledge economy. First, when we talk “virtual organizations,” we are really talking about dramatically different ways of organizing capital, technology, information, people, and other assets than we utilized in the past. These revolutionary ways of bringing resources to bear will, in turn, require markedly dif-

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ferent skills and concepts among the workers. What they produce may be designed, made, sold, and serviced in different ways—and, at least partly, in virtual organizations. Yet the old economy, albeit in remarkably transformed networks of new complexity and flexibility, still has to function to service the new.

Second, how is this transition to the knowledge economy really going to work? Thus far, the transition to the Cyber Age is proving to be a less painful process than most imagined. But remember, it's very early. Less than one-tenth of 1 percent of retail business revenues were generated online in the fourth quarter of 1999. The booming U.S. economy, which combines both the old and the new, has masked many of the faultlines appearing as a result of the accelerating transition. To be sure, we already have some notable cracks in the road: *U.S. v. Microsoft*; the Lovebug virus and the chilling message it sent throughout cyberspace; the financial churning in the markets as gimlet-eyed investors focused on dot-com burn rates; and the troubling public policy issues related to privacy and the Internet.

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These disruptions, however, may pale in contrast to the consequences of the *real transition* over the next decade, with its huge potential for economic and worker dislocations, blue collar revolt, social disruption—and even the very damaging political repercussions that may result.

Despite all the talk of our digital future, the road to cyberspace has to go through places like Newport News, Virginia, where great ships are built; through Cozad, Nebraska and Paragould, Arkansas, where they make shock absorbers for the international auto manufacturers; through Racine, Wisconsin, where they bolt tractors together; and Counce, Tennessee where they make brown paper.

That is just an oblique way of saying that this transition to the knowledge economy—broader, deeper, and more pro-

found than any in our history—is perhaps the greatest domestic challenge we face over the next decade. More so, in all its ramifications, than the U.S. Industrial Age transition in the late nineteenth and early twentieth centuries. And it may have the most profound consequences in heartland, industrial America.

In May, Treasury Secretary Lawrence Summers observed in a widely reported speech that one of the critical sets of decisions economic policymakers face is defining the institutions of a market economy for the information revolution. He was describing a key challenge of the transition, but not all of it. The other major challenge concerns people: people tied to the “old economy”; people journeying in the “present” and its multiple uncertainties; people who have leapt, for now at least, into the “new economy.”

We must find ways to use the vast experience, talent,

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and, yes, even wisdom of the “old economy” workforce as we move to link their activities with the “new economy” workforce, whose

workers and managers are cyber-ready. We must do this without losing our competitiveness. At the same time, we must also devise more innovative and efficient safety nets for those people who will inevitably be left behind. (The term “safety net” is anathema to most of my business colleagues because it implies a certain welfare state solution that is not intended.)

The transition likely will be a case of “how we get there” being just as important as “being there.” If we fail to do this with insight and commitment, we are destined to pay heavy political, economic, and social prices that would make “being there” very hollow indeed.

Let me explain the scope of the problem by example—a case illustrating the potential dislocation impact for “old economy” workers in a large southern paper mill. You might title it “A Cautionary Tale of the Forgotten Third.”

A couple of years ago, I participated with one of the country's top management gurus in a Washington discussion with congressmen and senators about the knowledge economy. He talked about the cyber future of *virtual factories* (!), *virtual workers*, and *virtual products* in a *virtual economy*. He got applause. I wondered what the assembled solons expected us to eat, wear, and drive. But I did start thinking about virtual workers and decided to take a closer look at our flagship containerboard mill.

Earlier, I noted that the road to cyberspace must go through industrial towns where "old economy" products like linerboard, the stiff brown paper used to manufacture the ubiquitous cardboard box, was made. This particular mill is probably the most efficient liner producer in the world. And it's famous—as famous as any linerboard mill can be—because in 1998 it was selected by *Industry Week* as one of the top 10 plants in America—the largest plant and the only paper mill ever selected in the publication's annual awards.

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*One of our mill's workers observed that in the old days, his bosses only hired him "from the neck down," but now he works "from the neck up."*

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At the famous Corporate CEO Citizenship Breakfast at the White House in 1995, President Clinton quoted one of the mill's hourly workers, who observed that in the old days, his bosses only hired him "from the neck down," but now he works "from the neck up." People like that worker, by the hundreds, reinvented that mill in a few short years into a top-notch "old economy" facility, with high productivity, good morale, and strong financial results. In other words, this facility was thriving—the best of the "old."

Yet what I found there also was eye opening and somewhat disturbing. In this large mill with over 500 workers, one-third of them, all ages, genders, races, skills, and crafts were what I would describe as cyber-literate. They already had or were acquiring the skills to handle the best technologies we had or are going to have. Just as importantly, they were committed to the new ways of doing

business in the knowledge economy.

Another third were marginally able, but acceptable at the current levels of sophistication in the mill. With the pace of changes in the mill, however, they would have to improve to remain employed. They were, fortunately, also committed to learning, capable, and could be slotted into the more productive cyber jobs of the future.

The last third were not cyber-capable and probably never would be. Yet in their present jobs—pre-cyber—they were productive, but that was all. Despite the barriers that existed due to seniority and job classification imposed by union rules at the facility, a sort of Darwinian selection was already taking place. Those less cyber-capable, or potentially less so, were being pushed down the chain to less demanding and less productive jobs. This was done with the full knowledge of the top two-thirds of the workforce. As the drive for higher productivity proceeded apace with automation in the plant, they realized that the jobs of their less cyber-productive colleagues would be the first to go.

It is in this last third where the transition to the Cyber Age will cut—relentlessly and with certainty. Remember, this group is demographically mixed. It is not just older workers who are marking time until retirement. It includes young and middle-aged as well. It is not just the less-experienced, often less-educated young people, but cuts across the entire mill population. Multiply this one-third left behind by the tens of thousands of similar plants in the United States and you see how widespread the social pain and disruption can become. In my view, the transition will begin to cut severely when two things happen: 1) the cyber transition accelerates and 2) the economy falls back to a “normal” 2 to 2.5 percent annual rate of GDP growth.

Why haven't the dislocations been greater already? The first, most obvious answer has two parts. High growth has created jobs of all kinds and has permitted our industrial base to operate with 10 to 30 percent of its workforce marginally productive. High demand and stable prices have enabled us to absorb their higher costs and lower productivity and still remain competitive. The large restructuring layoffs have abated except where companies are in extreme situations. We also seem to be in a lull point. The Y2K expen-

ditures, which eventually will provide a strong productivity echo effect, have not really kicked in. When they do, they will supply another major wave of unneeded workers.

So what could or should be done to address the already apparent effects of this part of the transition? Some believe, incorrectly, I think, that the burgeoning high-tech sector can absorb that difficult one-third from places like our liner mill. I doubt it. The need to relocate and retrain, as well as the low education levels of the group in general, might block many from being absorbed into high-tech industries that will be even more automated in the future.

Substantially improving the education for entering workers is often proposed as a solution. In the long term this will work, but even the most optimistic projections by supporters of this approach do not tout this as a short-term answer. Some “on-the-ground” education may help. A few

years ago, one of our plants had more workers who earned Graduate Equivalency Diplomas than the regional high school had graduates. Better education is a decade-long

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solution. However, just because it takes time doesn't mean we shouldn't do it. But we need to get started in a really big way.

Others believe the booming 4 to 6 percent GDP economy will continue to absorb low-skill workers. Here there is hope, but we'll need another 8-10 years of this growth to really pull us through the transition, and for the workforce that is not cyber-ready to work its way through the system.

Our workforce is ahead of the politicians and the industrialists on this issue. The sense of foreboding about what is happening in the transition is palpable throughout industry. This results in what many view as irrational behavior by labor leaders and some sympathetic politicians on issues like trade and the environment. So far, despite a lot of agreement among Washington officials and industrialists

on this serious potential bump on the road to cyberspace, no one has really stepped up to address it.

This is too bad. Time will not long be on our side. Tom Friedman recently observed in his *New York Times* column that, in hindsight, this decade may be viewed as a comfortable hiatus before the real storm of globalization hits us: the near warp-speed transition to the Cyber Age. How much more disruption and loss of control will be required for a world with instant communications (and the ability to move an entire nation's GDP in four keystrokes!), and a global economic and financial structure without the requisite institutions to regulate and control them? The speed and size of current financial transactions already threatens to overwhelm our economic, political, and social institutions, domestic and international. E-mail viruses like Asia 1998 and Lovebug will be but insignificant harbingers of much greater crises to come.

These problems are caused by the same forces: acceleration of the transition to a knowledge economy and globalization.

We face challenges of such magnitude even as we grapple with the huge labor dislocations that I described earlier. We may not have the resources, the political will, or the economic stamina to tackle them all. 

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