

# FORTUNE



(Illustration: R. Sikoryak)

## CAN AMERICANS COMPETE?

Is America the World's 97-lb. Weaking?

In the relentless, global, tech-driven, cost-cutting struggle for business, America isn't ready—here's what to do about it.

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By Geoffrey Colvin

It's a crisis of confidence unlike anything America has felt in a generation. Residents of tiny Newton, Iowa, wake up to the distressing news that a Chinese firm—What's it called? Haier? That's Chinese?—wants to buy their biggest employer, the famed but foundering Maytag appliance company. Two days later, out of nowhere, a massive, government-owned Chinese oil company muscled into the bidding for America's Unocal. The very next day a ship in Xinha, China, loads the first Chinese-made cars bound for the West, where they'll compete with the products of Detroit's struggling old giants.

All in one week. And only two months earlier a Chinese company most Americans had never heard of took over the personal computer business formerly owned—and mismanaged into billions of dollars of losses—by the great IBM.

"Can America compete?" is the nation's new No. 1 anxiety, the topic of emotional debate in bars and boardrooms, the title of seminars and speeches offered by the liberal Progressive Policy Institute, the conservative economist Todd Buchholz, and countless schools and Rotary Clubs. The question is almost right, but not quite. We're wringing our hands over the wrong thing. The problem isn't Chinese companies threatening U.S. firms. It's U.S. workers unable to compete with those in China—or India, or South Korea. The real question is, "Can Americans compete?"

The stakes are mammoth: Respectable analysts believe it's possible—not certain, but possible—that the U.S. standard of living, after decades of steady ascent, could stall or even begin to decline. More worrisome is the chance that if the world's most powerful nation finds itself getting poorer rather than richer, some kind of domestic or even global political crisis could follow.

As for the big question at the center of it all—Can we compete?—the answer isn't obvious. The don't-worry-be-happy crowd points out that our last national fit of wailing and garment rending, when Japan was going to smite us in the 1980s, proved unfounded. We adapted and prospered, as we always had (and Japan didn't). But today's situation is so starkly different that it's tough to find comfort in our experience then.

We're not building human capital the way we used to. Our primary and secondary schools are falling behind the rest of the world's. Our universities are still excellent, but the foreign students who come to them are increasingly taking their educations back home. As other nations multiply their science and engineering graduates—building the foundation for economic progress—ours are declining, in part because those fields are seen as nerdish and simply uncool. And our culture prizes cool.

No one is saying that Americans can't adapt and win once more. But look at our preparedness today for the emerging global economy, and the conclusion seems unavoidable: We're not ready.

To understand better whether Americans are destined to be the scrawny and pathetic dweebs on the world's economic beach, it's necessary to refine the question. Who is most threatened? How come? What will it take to make America stronger in a new economic world? What political forces could propel—or derail—progress?

Many iconic U.S. firms—Coca-Cola, Procter & Gamble, Texas Instruments—already do most of their business and employ most of their workers outside the U.S. Conversely, some of the most American brands you can think of—Hellmann's mayonnaise, Jeeps, BV California wines—are owned by non-U.S. companies (Unilever, DaimlerChrysler, and Diageo, respectively). To complicate matters further, many products of U.S. companies are made outside the U.S.—Maytag refrigerators are no longer made in Galesburg, Ill., but in Mexico—while many non-U.S. companies make products here—your new Toyota may have come from Kentucky. Now add a few more twists: Your Dell laptop may have been assembled in Malaysia from parts made by American companies in Thailand.

The truth is that large companies transcended nationality long ago, and globalization gives them as many opportunities as problems. It increasingly lets them hire, source, and sell wherever they like, and that is basically good news no matter where the incorporation papers are filed.

For American workers, globalization is a radically dicier proposition—far more so than most of them realize. The fast-changing economy is exposing vast numbers of them to global labor competition, and it's a contest millions of them can't win right now.

Three main factors are changing the game. First, the world economy is based increasingly on information, bits and bytes that have to be analyzed, processed, and moved around. Examples: software, financial services, media. Second, the cost of handling those bits and bytes—that is, of computing and telecommunications—is in free fall. Wide swaths of economic activity can be performed almost anywhere, at least in theory.

Turning theory into reality is the third factor: Low-cost countries—not just China and India but also Mexico, Malaysia, Brazil, and others—are turning out large numbers of well-educated young people fully qualified to work in an information-based economy. China will produce about 3.3 million college graduates this year, India 3.1 million (all of them English-speaking), the U.S. just 1.3 million. In engineering, China's graduates will number over 600,000, India's 350,000, America's only about 70,000.

The result is that many Americans who thought outsourcing only threatened factory workers and call-center operators are about to learn otherwise. That is a giant development, because

information-based services are the heart of the U.S. economy. With 76% of its jobs in services, America's economy is the most service-intensive of any major country's. Of course many of those jobs can't be shipped abroad: Chefs, barbers, utility and NFL linemen, and many others know they can't be replaced by even the smartest person in Bangalore.

But growing numbers of other service jobs are not safe. Everyone has heard about the insurance-claims processors, accountants, and medical transcriptionists in India and elsewhere who've taken away U.S. jobs by doing the same work for much less money. More alarming is that the value of outsourced jobs is steadily rising. Morgan Stanley is hiring Indian bond analysts, fearsome quants who can make or cost a company millions. Texas Instruments is conducting critical parts of its next-generation chip development—extraordinarily complex work on which the company is betting its future—in India. American computer programmers who made \$100,000 a year or more are getting fired because Indians and Chinese do the same work for one-fifth the cost or less.

The big question is how far all this will go. A massive new study from the McKinsey Global Institute predicts that some industries could be changed beyond recognition. In packaged software worldwide, 49% of jobs could in theory be outsourced to low-wage countries; in infotech services, 44%. In other industries the potential job shifts are smaller but still so large they'd create major dislocations: Some 25% of worldwide banking jobs could be sent offshore, 19% of insurance jobs, 13% of pharmaceutical jobs.

Looking at occupations rather than industries, some fields will never be the same. McKinsey figures that 52% of engineering jobs are amenable to offshoring, as are 31% of accounting jobs.

Adding up all the numbers, McKinsey calculates that some 9.6 million U.S. service jobs could theoretically be sent offshore today. That is a staggering number. If all those jobs really did get outsourced, the U.S. unemployment rate would leap from 5% to 11.4%. For various reasons, not all those jobs will get sent abroad. Some companies aren't big enough to make the effort worthwhile. Some have infotech systems so old or messed up that they can't adapt to offshoring. Some managers just don't like the idea.

McKinsey figures that about 4.1 million service jobs will actually get offshored from high-wage countries to low-wage countries by 2008. It doesn't make a forecast for U.S. jobs, but others have done so. Forrester Research puts the number at 3.4 million white-collar jobs by 2015. Researchers at the University of California at Berkeley believe the number will be far larger, perhaps 14 million.

Even those numbers could be too low, because they're based on surveys of company plans today and extrapolations of current trends—always iffy predictors. Professor Thomas H. Davenport of Babson College believes that outsourcing is about to become radically easier and more widespread for a seemingly mundane reason. Davenport sees industry groups and professional associations rapidly standardizing processes like purchasing and billing, making them easy to measure and assess. When that happens, he says, "the low costs and low risks of outsourcing will accelerate the flow of jobs offshore."

The downward pressure on U.S. wages could be more immediate and severe than you might imagine. It is tempting to suppose that the giant U.S. economy couldn't have felt much strain yet; the total number of offshored white-collar jobs is probably fewer than a million so far. But it doesn't take the shifting of many jobs to produce ripple effects through the whole economy.

Why? Most U.S. workers whose jobs are sent overseas will try to find new ones, perhaps in other industries or occupations. So the offshoring of any jobs will produce job seekers who will tend to push wages down even in industries in which outsourcing isn't happening. Far more significantly,

the mere threat of moving jobs offshore is enough to hold wages down—those growing armies of skilled workers around the world are increasing the labor supply in many occupations, and the immutable law of markets is that when supply goes up, prices come down. It has happened in all kinds of other markets—food, clothing, microchips, appliances. Why not in labor?

Some economists believe they see it happening already. They note that something extremely odd occurred in the U.S. economy last year: Average compensation, including pay and benefits, fell. That is a rare event; the last time it happened was 14 years ago. More important, it usually happens in or around recessions or when productivity is going nowhere. But last year wasn't like that. Productivity rose. The economy grew. The unemployment rate was low and falling. Every indicator pointed to strong wage increases, but just the opposite happened. Now some of the nation's most eminent economists, including professor Richard B. Freeman of Harvard and Stephen Roach of Morgan Stanley, believe the supply of overseas workers in newly globalizing labor markets is holding U.S. pay down and will do so for years.

All those university graduates in China and India threaten U.S. living standards in another way. Paradoxically, it's not because they'll end up working for U.S. employers, but because some of them won't, finding jobs instead with domestic companies in their own countries. That's a problem for America if many of those graduates are top students in science and engineering.

You might wonder why we're constantly reading about Chinese graduates in engineering and not in law, medicine, literature, or philosophy. Why this veneration of the pocket-protector set? Engineering is fine, but there's more to life than technology, isn't there? Obviously there is. The question—and for America and the West it's a huge question—is whether there can be economic dominance without technology leadership.

Many economists would say no. "There is no other fundamental mover of economic development than science and technology," Columbia University professor Jeffrey Sachs has said. He notes that until the scientific revolution began in the 17th century, virtually everyone lived on the verge of subsistence. Three centuries of technology breakthroughs are the root of today's abundance in the developed world, and those with a technological edge—America, Japan, and Western Europe—still have the highest standard of living.

So in a world economy that threatens to pull down American wages, the key to fighting back is maintaining technological superiority—continually creating high-value new jobs that workers in the rest of the world can't do yet. What are the chances? A worrisome sign is that the brightest students from many Asian countries are staying home to get their Ph.D.s rather than coming to America, as they did in rising numbers until the mid-1990s. Those foreign Ph.D.s have been the driving force in scores of America's most successful and innovative tech firms, but now we're getting fewer of them, and other countries are getting more.

Perhaps worse, those who still come to America for their Ph.D.s—arguably the best of the best—are returning home in increasing numbers. In economies like China's or India's, growing two or three times faster than America's, elite students see huge opportunities. Even foreign nationals well established in the U.S. are heading home. "Many of my friends are going back," says professor Godwin Wong of Berkeley's Haas School of Business. "They're leaving big corporate jobs here because they can make more money in China."

For the U.S. the loss of technology leadership could be historic. Without that advantage, there would be little to prevent living standards in the world's interconnected economies from equilibrating. The rest of the world's living standards would rise, and—at least in the near term—America's would decline.

Combine all those trends and the picture isn't encouraging for America. Though the U.S. is still the world's biggest and strongest economy by far, many Americans, from hourly workers to CEOs, feel as if they're getting sand kicked in their faces. They know they need some serious muscle building to match the other guys on the beach. And they're remarkably agreed on how to do it.

The No. 1 policy prescription, almost regardless of whom you ask, comes down to one word: education. In an economy where technology leadership determines the winners, education trumps everything. That's a problem for America. Our fourth-graders are among the world's best in math and science, but by ninth grade they've fallen way behind. As Bill Gates says, "This isn't an accident or a flaw in the system; it is the system."

The good news is that we've overhauled the system before. A century ago, as America changed from an agricultural to an industrial economy, something called the high school movement swept the country. City and town leaders realized that an eighth-grade education, which was all that most people got, was no longer enough. They built and staffed high schools but rejected the European model, which prepared a small minority of young people for college, opting instead to prepare a majority of young people for life and work. This was a revolutionary concept, and many European authorities thought it foolish. But as research by Harvard's Claudia Goldin and Lawrence F. Katz has shown, by 1940, America was far and away the world's best-educated nation, a critical element of its post-World War II economic dominance.

We responded to a changing world again in 1958, after the USSR orbited Sputnik while our rockets kept blowing up on the launch pad. Congress passed the National Defense Education Act, which appropriated federal money for education in math, science, and foreign languages. It worked, along with America's grass-roots response to the threat. We went to the moon, science and engineering became cool, even glamorous, and we gained a wide technology lead.

Now we need to revolutionize our schools again. As the world's richest country, we certainly have the resources, but we seemingly lack the will, while many of our competitors are obsessed with education. In China it's common for middle-school students to attend school from 7:30 a.m. to noon, then from 2 p.m. until 5, and again from 7 to 8:30 p.m. Contrast that with a nation where millions of parents are happy to let their kids spend hours hanging out at the mall or playing Grand Theft Auto on their Xbox or watching *Pimp My Ride* on MTV. To be sure, many upper-middle-class parents live in wealthy school districts with excellent schools, and they're making private tutoring firms like Sylvan Learning Centers and Kumon into fast-growing businesses. But for most in the broad middle class or below, a top-notch K-12 education is a world away.

Evidence is mounting that the way to begin reform is for legislators to establish high standards for public schools and make the schools more accountable to parents. But even if that notion becomes a movement, it's not clear that better education will guarantee U.S. economic dominance. If we could somehow get our high school math and science scores up to South Korean standards, which would be a gargantuan achievement, then by that measure we'd be as good as they are—but they'd still be cheaper.

A prescription urged just as widely is immigration reform. A critical element of America's economic dominance has been its attraction for the world's brightest, most ambitious people, but today's immigration laws favor family reunification far above talent, intelligence, or credentials. If Albert Einstein wanted to move in today but had no U.S. relatives, he'd have to get in line behind thousands of poorly educated manual laborers who did. In a global economic competition, that policy seems crazy. John Doerr, the legendary Silicon Valley venture capitalist, recommends that every foreign student who gets a Ph.D. at a U.S. university should also get a green card (granting permanent residency) stapled to his or her diploma. But U.S. policy is moving in the opposite direction. The number of available H1-B visas, which allow highly qualified foreign workers to

remain in the U.S. for up to six years, has been cut from 195,000 to just 65,000 a year, based on security concerns following 9/11.

U.S. spending on R&D will also have to increase if the country wants to remain technologically dominant. The Task Force on the Future of American Innovation, a group of academic societies, high-tech companies, and industry associations, concludes in a recent report that "the United States still leads the world in research and discovery, but our advantage is rapidly eroding, and our global competitors may soon overtake us." Aggregate R&D spending by six fast-growing economies (China, Ireland, Israel, Singapore, South Korea, Taiwan) is on track to exceed U.S. spending in a few years. Industrial R&D continues to increase, but 71% of that spending is on development, not the kind of basic research that created the transistor and the laser. Federal funding of research in the physical sciences has been declining as a percentage of GDP for 30 years. The Council on Competitiveness, consisting of CEOs, university presidents, and labor leaders, wants federal research spending increased substantially, to 1% of GDP—about \$110 billion a year.

Incredible as it seems, America's infotech infrastructure is no longer world-class. We rank only 12th globally in the number of broadband connections per 100 inhabitants. Look closer and the situation is even worse. South Korea is not only more wired (No. 1 globally) but its connections are far faster than ours and are available not just through wires but also through virtually every cellphone. And speaking of our cellphone infrastructure—please don't. Anyone who travels globally knows it's awful by world standards.

Fixing all these problems would be a project of overwhelming proportions, yet it still might not make American workers competitive in today's global labor market. The reason, again, is cost. American workers are enormously more expensive than their peers almost anywhere but in Western Europe. So they must confront what may be the most important question of their working lives: How can they be worth what they cost?

As increasing numbers of them find that they can't be, at least in the short run, the result could be political upheaval. A return to protectionism is looming. When the end of global textile quotas earlier this year caused the rapid loss of 17,000 U.S. jobs—a tiny number in a nation of 141 million workers—the administration found a loophole in the trade treaty and quickly reimposed restrictions. Senator Charles Schumer (D-New York) introduced a bill to impose a 27.5% tariff on Chinese imports, and five Republican Senators signed on as co-sponsors. The Central America Free Trade Agreement, the impact of which would be minuscule in the U.S., is struggling to pass Congress. (No one in Washington seems to think NAFTA would stand a chance of approval today.)

If it all sounds terribly gloomy, it's important to remember that gloominess has a very poor record in predicting the U.S. economy. Many traits that have helped us meet previous challenges are still with us: flexible labor markets, the world's most highly developed capital markets, and a culture that moves on from failure and embraces new ideas. Companies aren't standing still. Trilogy, a business software company in Austin, realized almost three years ago that hiring programmers in the U.S. no longer made sense because it could get them in India for one-fifth the cost. So it offered to help its U.S. coders learn higher-level work, becoming business experts who could help Trilogy customers make more money—for example, by showing Goodyear how to price tires more intelligently. As a general principle, learning higher-level work is what American workers have to do.

And exactly what work would that be? No one is sure, though history says not to panic. Economic crises rarely reveal their solutions, but the solutions usually come along. When U.S. business went through the trauma of restructuring in the 1980s, millions of middle managers got cashiered and wondered what they'd do next. Undreamed-of new industries developed (cellphones, biotech, Internet services), and by the mid-'90s the unemployment rate was the lowest in decades.

That's history. It offers hope but no assurances. History says the rise of China, India, and other developing economies could someday lead to a new equilibrium that's better for everyone. With resources deployed globally to their best use, prices could come down and living standards could eventually increase everywhere. After all, America's rise didn't impoverish Europe. On the contrary, the success of each continent helped the other get richer.

What happens next in the U.S. depends on how workers respond. Trilogy CEO Joe Liemandt recalls what happened when he told programmers he wouldn't need them as programmers anymore: "We told them they could react in one of three ways. They could get really pissed, they could be in denial, or they could work with us to retool their skills. And we had people in each group."

It's time for a massive, urgent American response to the global challenge. As Cisco chief John Chambers says flatly, "We are not competitive." Where to start? Venture capitalist John Doerr, one of America's most passionate competitiveness campaigners, calls education "the largest and most screwed-up part of the American economy." He'd start there. GE chief Jeff Immelt has attacked America's newly restrictive student visa rules. Others focus first on R&D spending or the broadband infrastructure. But the greatest challenge will be changing a culture that neither values education nor sacrifices the present for the future as much as it used to—or as much as our competitors do. And you'd better believe that American business has a role to play—after years of dot-com-bust- and scandal-driven reticence, more corporate leaders need to summon the courage to lead.

While optimism has always been the best guide to predicting the U.S. economy, today's situation is unprecedented. Global product markets have been with us forever and continue to expand. Global capital markets are still developing—watch out, Unocal and Maytag. But global labor markets on a broad scale are a new phenomenon that could, for better or worse, transform the country. How we respond—in our businesses, our government, and our culture—will shape America in the deepest way.

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