Testimony of

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Mr. Chairman, members of the Committee, thank you for the opportunity to take part in this hearing. I was invited here to talk about the offshoring of American jobs in general, with special attention to science and technology issues. I'd like to start with some general observations about offshoring, and then go on to some specifics.

Looking across the world, if you hold occupation and education constant, Americans earn much higher wages than workers in developing countries. But we Americans have no biological or neurological superiority to these foreign workers. It is true that we are far better educated on average. However, millions of skilled workers in developing countries are educated about as well as Americans are. And those numbers are bound to increase as poor countries, notably China and India, continue to participate more vigorously and effectively in the world economy.

Apart from better skills and more education, the other main reasons why US workers earn so much more than workers in, say, India or China is that Americans work with much better technology and with much more physical

capital. But in an increasingly globalized economy, physical capital, financial capital, and technology are all increasingly mobile. So, in particular, the capital and technology can move to where the cheap labor is, thereby raising labor productivity (and wages) there.

All this is old hat, and none of it is controversial. It describes a situation that has been familiar to US manufacturing workers for decades. One consequence of these forces has been the offshoring of millions of manufacturing jobs from the United States (and other rich countries) to an ever-changing list of poorer countries—a list that once included Japan, but is now headed by China.

Today's new wrinkle is in services, where a similar process is unfolding. Advances in electronic communications have decreased or obliterated the advantages of physical proximity in a wide variety of service jobs, where the work can now be performed abroad and the work products delivered to the US by telephone or computer networks. Notice that "shipping" electrons is a lot easier and cheaper than shipping physical goods.

While still in its infancy, electronic offshoring has already begun to move well beyond traditional low-end jobs, such as call center operators, to highly-skilled jobs such as computer programmers, scientists and engineers, accountants, security analysts, and some aspects of legal work—to name just a few. And I think there is little doubt that the range and number of jobs that can be delivered electronically is destined to increase greatly as technology improves and as India, China, and other nations educate more and more skilled workers—in the case of India, *English-speaking* workers.

What's novel about service offshoring? At the *conceptual* level, nothing much. The same basic market forces that govern trade in goods also govern trade in services. The novelty comes at the *practical* level. Specifically, I have in mind three distinguishing features:

- First, in the US and other rich countries, there are many more service jobs than manufacturing jobs. In the US, there are about five times as many.
- Second, unlike factory workers, the people who hold these jobs are not accustomed to competing with low-cost foreign labor. They will not welcome this new competition any more than manufacturing workers did.
- Third, many of the professionals who are seeing, or will see, their jobs become offshorable are vocal and politically engaged.

You can judge for yourselves, but this trio strikes me as a politically potent brew. Members of Congress will hear from many actual and prospective job losers, clamoring for protection.

Now let me move to specifics. First, which service jobs are the most vulnerable to offshoring? It would be nice to say that only low-skilled jobs are vulnerable while the high-skilled jobs will remain in America. We may have once believed that, but it does not appear to be so. I have estimated that there is very little correlation between the educational attainment of an occupation and its susceptibility to offshoring.[1] It would be similarly reassuring if low-*wage* jobs were more vulnerable to offshoring than high-wage jobs. But that, too, appears to be

[1] This and the other estimates in this paper come from Alan S. Blinder, "How Many U.S. Jobs Might Be Offshorable?," CEPS Working Paper No. 142, Princeton University, March 2007.

untrue. According to my estimates, there is no correlation between an occupation's average wages and its degree of offshorability.

What, then, is the critical factor that determines which jobs can easily be offshored and which cannot? I have argued that it is a little-discussed, and often unnoticed, job characteristic: the importance of face-to-face contact with people *outside* the work unit (whether upstream suppliers or downstream customers). For lack of a pre-existing vocabulary, I have labeled the jobs in which face-to-face contact is important as *personal services* and the occupations in which face-to-face contact is unimportant as *impersonal* services.

For example, services that come (or could come) to their end-users by, say, telephone or internet (e.g., call centers, financial analysis) are impersonal. They are tradable across national borders, just as manufactured goods are. But services that must be delivered physically or face-to-face (e.g., driving a cab, brain surgery) or whose quality deteriorates markedly when they are delivered electronically (e.g., high school teaching, psychoanalysis) are personal and cannot be traded internationally. Serving in Congress is a personal service job. I leave it to you to decide whether giving Congressional testimony is a personal or an impersonal service.

My central claims—which apparently *are* controversial--are two: first, that market pressures emanating from trade and globalization (especially international differences in labor costs) will force more and more Americans to leave impersonal service and manufacturing jobs and seek employment in personal service jobs instead. And second, that we will be better off as a nation if

government, businesses, and the schools approach that occupational migration deliberately, thoughtfully, and with appropriate policy responses, rather than letting it take us by surprise.

In voicing these views in recent months, I seem to have created something of a media stir. (You should see my fan mail!) So, before going further, I'd like to dispel some possible confusions.

- First, some people have misinterpreted my estimate that 30-40 million US jobs are *potentially offshorable* to mean that *all* of those jobs will actually be lost. They won't be, any more than globalization has eliminated all manufacturing employment in the US. (It hasn't.) Besides we will also be gaining jobs from globalization. Mass unemployment is not in America's future.
- Second, some have misinterpreted my writings as hostile to trade. Nothing could be further from the truth. I remain an advocate of open trade, just as I have always been. Protectionism is a loser's game, and I believe our country stands to be a big winner from globalization--eventually. Besides, how do you stop electrons at the border?
- Third, some have misinterpreted my writings as hostile toward India, where many of the offshored service jobs are going. I am not. In fact, I applaud India for doing exactly the right thing for its people--exploiting its comparative advantage in English, building up its service offshoring industries, and in the process, contributing to the reduction of world poverty.

There is, however, one legitimate criticism of my writings on this subject:

- Some people have accused me of overemphasizing the *downsides* of service offshoring—such as job losses and downward pressures on wages--and underemphasizing the *upsides*--such as job gains and cost reductions.

There is truth to this criticism, but I have a reason. I believe that American policymakers must focus on and ameliorate the downsides of offshoring--both for basic fairness reasons and to preserve the open trading system. The winners from offshoring will not object to its upsides, which markets will produce quite handily without any government assistance (other than avoiding protectionism). But offshoring, and trade more generally, will not look so good to the people who lose their jobs. That's where the government needs to help.

Having just ruled out the "Stop the world, I want to get off" approach, what can Congress do to make the transition to large-scale service offshoring more palatable and less painful? While I realize that many of the appropriate policy responses fall outside the purview of this Committee, I see three large policy agendas, each of which encompasses many specific policy initiatives.

First comes the *safety net agenda*. Simply put, the U.S. government now offers disgracefully little help to workers who are displaced from their jobs—whether by trade or for other reasons. Without delving into the details, I am referring here to such problem areas as stingy unemployment insurance, weak trade adjustment assistance, loss of health insurance, pension rights that are often not portable, and scant opportunities for retraining—to name just a few. I can't believe that my country can't do better. We know that other rich countries do.

Second, there is an *education agenda*. Put starkly, our K-12 education system was designed in the 19th century to produce cadres of factory workers for the First Industrial Revolution. It succeeded mightily, but it has barely adapted to the Second Industrial Revolution: the shift from manufacturing to services. Having failed to do that, it now needs to gear up for a possible Third Industrial Revolution: the offshoring of impersonal service jobs. I believe we need to educate more young people for the personal service jobs that will account for a rising share of U.S. employment. But hardly anyone in the education business is now thinking about how to do this. And, by the way, similar changes are called for in the community colleges and perhaps even in the four-year colleges.

Third, there is the *innovation agenda*. Since this one is closest to the concerns of this committee, I will deal with it at greater length—starting with an illustrative example.

The television *manufacturing* industry began here and, decades ago, provided good jobs for many American factory workers. But as TV sets became "just a commodity," their production moved offshore to locations with much lower wages. And for years now, the number of television sets manufactured in the United States has been *zero*. In consequence, TV manufacture is often held up as an example of industrial failure: We started the industry, then lost it. Actually it should be viewed as a success story. The world's industrial leader—the United States--must constantly innovate and move on, like the cowboy hero in the Western movies. In the case of TV sets, we got there first, but then left. Both were appropriate.

This example illustrates an important point: It is crucial for the United States to remain the incubator of new business ideas and the first mover when it comes to providing new goods and services. If we are to remain big exporters as the rest of the world advances, we must specialize in the sunrise industries, not the sunset ones. We must do this not because we like the job destruction in the old industries that we lose, but because we want and need the job creation in the new industries that we gain, *even if those jobs won't stay here forever*.

Trying to name concrete examples of future industrial winners is a fool's errand, and I won't go there. Who could have told President Jefferson in 1802 where the new jobs would come as the share of Americans earning their living on farms collapsed from 84% to 2%? Moving up in time, who could have told President Eisenhower in 1953 where the new jobs would come from as the share of Americans earning their living in manufacturing dwindled from 32% to 10%? But both industrial transitions happened, and Americans found plenty of work to do.

While I'm not foolish enough to try to name the new industrial winners, we all know that many new goods and services will be invented and/or commercialized in the coming decades. As the world's leading nation, the United States must grab the first-mover advantage in a disproportionate share of these. And that, in turn, requires that we remain a hotbed of business creativity and innovation. To accomplish this, basic research, industrial R&D, creative and aggressive business management, an entrepreneurial culture, an active venture capital industry, and the like must all remain integral parts of the American success

story. But that does not seem too tall an order. It is, after all, how we got here in the first place.

Most of the necessary changes will be accomplished by the private sector, which has proven its flexibility and adaptability time and time again. Nonetheless, there are a number of vital roles for the Federal government in such areas as fostering basic science and R&D, supporting scientific and engineering education, returning both the tax code and the budget to sanity, maintaining competition and open trade, and keeping the capital markets vibrant but honest. (This list is not exhaustive.) Several of these areas fall under the purview of this particular Committee. And all of them fall under the purview of the US Congress. There is much to do, and the time to start is now.

Thank you for listening.