

The U.S. Must Manufacture to Innovate — And Provide Jobs

By Gary P. Pisano and Willy C. Shih

As this HBR online debate draws to a close, we want to thank all of you who participated. We certainly expected to learn quite a bit through the conversation, but what we've gleaned has far surpassed our expectations. There were so many thoughtful comments on all sides of the issue. We hope you found it as stimulating as we did.

In closing, we would like to offer a few reflections:

High tech manufacturing is knowledge work. If you doubt that, take a tour of a semiconductor fab or biotechnology plant or a factory producing flat-panel displays. There is a lot more brain than brawn at work. The view that the U.S. should focus on R&D and services completely misses the incredibly knowledge-intensive nature of many manufacturing activities.

Manufacturing is part of the innovation process. Where product designs are complex, process innovation and manufacturing competence are as critical to innovation as R&D. The view that the U.S. can specialize in R&D and let others do the manufacturing ignores the complex nature of innovation. The U.S. is not enhancing its capability to innovate by letting manufacturing capabilities atrophy.

Ceding manufacturing can have hard-to-foresee consequences. While such capabilities might not be a control point for the industry in question, losing them can have devastating consequences for other industries that draw upon the same capability base. In addition, their loss often means relinquishing the opportunity to bear the progeny of the original innovation.

The human toll in lost jobs cannot be neglected. Businesses are a part of society, and their employees and the communities that they operate in are important constituencies. Of course, remaining competitive has to be business leaders' top priority. But we don't see remaining competitive and maintaining jobs as a tradeoff. That's because we believe that being competitive over the long term — not maximizing short-term profits and short-term shareholder value — is what matters. And to be competitive over the long term, companies innovating in the U.S. must retain and build the capabilities in manufacturing and R&D in the U.S. that are critical to innovation and value creation, which, in turn, provides jobs. To do so, however, means that we have to be constantly upgrading the capabilities of our workforce.

What can be done to improve U.S. competitiveness? More specifically, who should be doing something about this? This is a complex issue that resists a simple formula. From our view, addressing the problem requires a combination of change in strategy, policy, and behavior. It's a problem for both management and government:

Management. U.S. managers face a tough challenge. Many are torn between doing what is right for their enterprises and local economies over the long term and performing their fiduciary duties to their shareholders and bending to the more short-term pressures from financial markets. One brand of thinking, tracing its roots to the 1970s, is that managers are solely accountable to their

shareholders. Under this view, the above problem is no dilemma at all. If outsourcing improves shareholder returns, do it. If cutting back on R&D increases the stock price, do it.

Another view is that managers are stewards of the enterprise. Yes, they have obligations to today's shareholders, but they also have responsibilities for future shareholders as well. And, part of the enterprise value is embedded in things like reputation, technological capabilities, employee knowledge, and relationships with suppliers and customers. These all take time to build up (and very little time to destroy). As several of our blog commentators noted (and we agree with them), managing for the long term requires the right kind of board and governance structures. It also takes managers who think differently about their role.

Government. We had a lot of debate on the appropriate role of government, and some very different views. As we stressed in our *Harvard Business Review* article "Restoring American Competitiveness" and in our own blog posts ("The U.S. Is Outsourcing Away Its Competitive Edge" and "The U.S. Can't Manufacture the Kindle and That's a Problem"), good innovation policy is not the same as industrial policy and picking winners. Good innovation policy creates the right conditions. The failure of the U.S. to engage in serious reform of public education is perhaps the greatest political failure of our generation. And it may well be one of the biggest drags on economic growth in the future.

We need to do a better job of educating and training people in the

U.S. for high skilled (and high wage) jobs. But we also need to continue to attract the best and brightest from around the world. Today, 47% of the Ph.D. level workforce in the U.S. is foreign born. Erecting barriers to attracting and keeping highly educated workers in the U.S. does not make sense. Government (through agencies like the NIH and DARPA) has played a critical role in advancing innovation through its support of basic and applied scientific research. The scale of the U.S. government, which allows it to make these kinds of investments, is a huge advantage, and we should be exploiting it. This is not about picking winners. It is about

creating a foundation that entrepreneurs and private enterprises engaged in competition can build upon.

Government, through taxation and regulation, also contributes heavily to the attractiveness of locating and growing R&D and manufacturing facilities within our borders. Importantly, U.S. trade policies need to emphasize free trade. Competition is good. Foreign direct investment is a critical conduit for bringing to the U.S. new capabilities and new management thinking. We buy ourselves nothing through protectionism. At the same time, we also need to make sure our trading partners are playing by the same rules.

As this online debate has highlighted, the current state of American competitiveness has been a long time in the making. The problems are complex, multi-faceted, and interlinked with many contentious policy issues. Problems that are a long time in the making are not solved overnight. We need continued focus on root causes as we contemplate elements of a long-term solution.

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