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From: Lloyd Etheredge <lloyd.etheredge@policyscience.net>

**Subject: 214. Red Team: Challenging + Upgrading Grand Strategy for**  
**US Competitiveness: Data Systems, War Room**  
**Displays, Better Theories**

Dear Dr. Fischhoff. Dr. Goroff and Colleagues:

The National Academy of Sciences might want to take very seriously President Obama's high-level commitment, in his State of the Union address, to American competitiveness.

A joint Red Team project can move quickly, with experts, to evaluate and upgrade current data systems; create War Room displays for strategic planning; design a rapid learning system to acquire evidence and improve theories to guide government and private sector success; and publicly measure and report the rate of improving national competitiveness by industry and sector.

### **Achieving Grand Strategy + Rational Management**

The project would be a breakthrough for the dream of achieving Grand Strategy + Rational Management in American foreign policy. Normally (except for the Department of Defense in war-time operations) government agencies are bureaucracies that administer well-defined programs. They are not strategic and purposive: even the new Dashboard display at USAID - where many of the Cabinet Departments and Agencies have not yet gotten their numbers submitted - probably is beyond what most Cabinet-level appointees have available. Thus, if the DNI can create the prototype data/display system to move faster on competitiveness, it will have

created a template that could upgrade learning rates and speed Grand Strategy + Rational Management progress across many areas.

### **Embodying Economics 101**

Economic theories about competition and growth are one area where social science can upgrade baseline political instincts and measurements. [Man in his natural state, Kindleberger wrote, is a Mercantilist who prefers exports to imports, seeks government protections and subsidies for his own activities, mistrusts foreigners (etc.) - and he saw the task of Economics 101 being to extirpate these instincts.

The attached Op Ed by Matthew Slaughter (WSJ, 1/26/2011) points to the sophisticated analysis of competitiveness and American jobs that should be used to design the Obama Administration's War Room displays and metrics. (The metrics and the display systems have to be smart (beyond Fox News) about the causal analysis - otherwise they could lead to dumb decisions.)

For example, Slaughter recommends basing US strategic analysis on the theory of comparative advantage that free market theorists developed in the 18th century to attack then-current mercantilist government policy. He also urges proper recognition of the foreign partnerships and supply chains that support economic growth and competition in an era of globalization: (Wal-Mart, for example, can compete best by establishing supply chains with low-cost Asian partners.)

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### **Next: Beyond Economics 101**

I asked an economist friend about these issues. He recommends that the National Academy of Sciences also should create the Administration's cognitive maps, War Room displays, and metrics in conjunction with a R&D/rapid learning program that goes beyond the 18th century/Economics 101 ideas that Slaughter recommends.

Specifically: Comparative Advantage is only a *theory* and the practical application of its core mathematical truth, at the level of national strategies in the 21st century, needs careful thought

as part of a general theory and strategy for competitiveness.

For example, an 18th century application of the theory was that Britain should do the thinking and manufacturing while the American colonials grew cotton and tobacco - but this was not a good long-term rule for America. And comparative advantage theorists might have rejected Japan's 20th century vision to become internationally competitive in steel production and automobiles since Japan lacked the necessary natural resources and raw materials. Today we recognize that most of the key components of wealth and growth are, as the World Bank's growing research suggests, human-created in the form of education, well-run organizations, disciplined and/or creative workers and managers, legal institutions and capital markets, etc. Successful government policies and the private sector can *create* the comparative advantages.

Also, there needs to be detailed knowledge of each industry to know what variables should have the highest priorities and could secure the greatest benefits. The empirical work of Michael Porter (Harvard Business School) shows, across a series of books, that a package of factors need to work together for international competition. An Italian firm (Benetton) dominates the global fashion industry for sweaters - and how this came about, and is sustained, requires detailed analysis - as would a national strategy if (for example) the Obama Administration wants greater American competition and market share in this area of the fashion industry.

Porter finds several broad factors: For example, one company's own management seldom does the job alone. There must be strong competitors in local/home markets to produce and sustain global competitive success - GM, Ford, and Chrysler became world class by competing with each other in America, as did Honda, Toyota, and Nissan by competing with each other in Japan. Also, tough and demanding customers produce the most competitive firms - the leading automobile manufacturers demanded "six sigma" quality control and reliability from their supply chain, as did other leading companies, and everybody has shifted to doing a better job. And there are several other factors.

Here is an idea for how health care-related technology and services might be a good test bed for the President's Grand Strategy and a Red Team design of data/analysis systems to under-

stand how the world works beyond the water's edge:

### **A Prototype: Health and America's Comparative Advantages**

We do not traditionally think of health care as an industry for global competition and growth (beyond, for example, the Cleveland Clinic opening a branch in downtown Toronto, or programs to attract international patients for leading US hospitals.) However the American government's bold leadership in electronic health records (e.g., the 60 million patients in Sentinel, # 210 at [www.policyscience.net](http://www.policyscience.net) at II.D; see also #4 et passim.) creates an exciting area for fast international growth and leadership by US software and management consulting firms who can bring new EHR-based cost management, research, and decision-aide software systems (and linkups to Sentinel databases) to global markets.

Physicians - or individuals - in any country could buy software to create patient profiles based on the Universal Access Language (PCAST) and use the new software to study treatment options using all available information (i.e., a statistically superior method) about each individual + guidance from the experience of the 60+ million patients with the closest matches. And the attraction of these decision-aide products will increase as the new NIH breast cancer and other cancer initiatives come online, along with the N=250 million online patient registry and treatment/outcome reporting system for the rarer diseases - a contract that, I believe, will be signed shortly. The first drugs and dosage levels used for most conditions may not be the best choices. (Clinical random trials only establish that a drug works better than chance.) There is a lot of guesswork and trial and error in the world's pre-Sentinel/pre-EHR system medicine.

It is an exciting future. A War Room display and analysis/national planning team could identify rapid strategic plans for the US government + State Department to contact other governments with national health services and open the doors to interoperable coding. This, in turn, lets the US private sector - acting alone or with partners in other countries - build a competitive future quickly.

Google, Microsoft, and others have dreamed of national businesses in these EHR areas. A Grand Strategy prototype [i.e., that might be impossible, for anti-trust reasons, if it was created

by the industry itself] could help everybody to turn these into fast-growth global plans. <2>

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<1> Another mistaken (subsidy) idea is the hype to meet the “Gathering Storm” of Asian competition by government subsidies to STEM education. Pushing more American students into science and engineering may be unwise, unless they have talent and are inspired and motivated. I.e., a comparative advantage theory would suggest that all students might better pursue the careers where they have natural talents and are inspired and highly motivated. [People with natural talent often can become outstanding in any field if they have opportunities and also are motivated to practice 4-5 hours/day for 10-15 years and have good teachers/coaches.] Competitive success requires teams of good people with many abilities.

<2> I also attach a related article from this morning’s AP feed, “Despite China’s Might, US Factories Maintain Edge.”

The US already has an extraordinary, world-leading, industrial growth strategy for health care: \$30 billion/year of annual subsidy for R&D via NIH, subsidizing supplies of physicians, subsidizing demand via Medicare, Medicaid, and new national health insurance systems. We complain about the resulting rate of annual growth of the sector and the costs of its innovations but - viewed from a 21st century theory of comparative and competitive advantages - there now may be larger global potential returns from these investments.

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**Comparative Advantage and American Jobs. (WSJ. 1/26/2011)**

By MATTHEW J. SLAUGHTER

President Obama announced last week that he has created a Council on Jobs and Competitiveness, headed by General Electric CEO Jeffrey Immelt. This is welcome news, as America has much to do to address its jobs crisis.

Almost 26 million Americans are currently unemployed or underemployed. The U.S. today has 108 million private-sector jobs, as many as it had nearly 12 years ago, in April 1999. The last time America had just 11.7 million manufacturing jobs, as we do today, was April 1941. Amid struggling schools and a crumbling infrastructure, Americans rightly worry about our future in the global economy. In a recent WSJ/NBC poll, 66% of U.S. adults stated they do not feel confident "that life for our children's generation will be better than it has been for us."

To succeed in helping create good jobs, the administration's new council should recognize that excessive government backing of particular companies and industries typically squanders taxpayer resources and stifles sustainable growth (think ethanol). Three principles can guide the council away from repeating past errors:

- The focus should be on American jobs—regardless of what mix of companies creates them. Some politicians argue that the government should give preference to jobs created by small businesses, for example, or U.S.-headquartered businesses. But the U.S. is in a new era of global competition to attract, retain and grow the operations of successful companies of all sizes and nationalities.

Focusing on small businesses alone misses the fact that many small firms grow (indeed, become big businesses) by integrating into the supply chains of large firms. Last year, the U.S. operations of U.S.-based multinationals purchased about \$1.5 trillion in goods and services from U.S. small businesses. In addition, some 5.6 million Americans today work for the U.S. operations of multinational firms based abroad—earning an average of \$73,023, about one-third more than the average for all other U.S. workers.

- A competitive America does not mean competitive success for every American industry. Many voices argue that manufacturing is somehow special, and it is indeed important. But so, too, are many knowledge-intensive industries such as education and software. In 2010, America ran a trade surplus in services of nearly \$150 billion.

The key insight of the principle of comparative advantage, which drives much of globalization and its economic benefits, is that hard-working Americans are not going to excel at everything. That's okay, just as it's okay that Phil Mickelson is better off on the golf course and not painting his own house.

Comparative advantage allows each country to concentrate its energies on the particular goods and services that it is relatively productive at compared to the rest of the world. The countries then export those abroad, and in exchange import other goods and services produced relatively more efficiently abroad.

Imports do not represent failure. They raise standards of living. Do American workers have a comparative advantage in emerging clean technologies like plug-in hybrids or solar energy? No one knows just yet. But for America to be a truly competitive country, questions like these are best left to the market.

- A globally competitive America must invest abroad as well as export there. Exports certainly matter, but U.S. companies in many lines of business (such as retail and banking) must establish on-the-ground foreign affiliates to access foreign customers. Many technology- and capital-intensive U.S. manufacturers need to invest abroad too, because their intricate goods—aircraft engines, elevators, earth movers—typically require extensive after-sales maintenance and support, which are provided by foreign affiliates.

Research has demonstrated that U.S. companies' investment abroad tends to support their hiring and exports back home. More retail stores in China and India mean more logistics jobs in America; more maintenance and repair of tractors in China and India mean more R&D and manufacturing jobs in America. U.S.-based multinationals reach foreign customers primarily through sales by affiliates. In 2008, the foreign affiliates of these firms generated \$6.1 trillion in total sales.

Mr. Immelt's council can't create American jobs on its own. But guided by these principles, it

can help shape policy so that companies have the incentives and support to grow and hire.

Mr. Slaughter, associate dean at Dartmouth's Tuck School of Business and a senior fellow at the Council on Foreign Relations, was a member on the Council of Economic Advisers from 2005 to 2007.

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### **Despite China's might, US factories maintain edge**

By PAUL WISEMAN, AP Economics Writer. 1 hr 54 mins ago.01/31/2011.

WASHINGTON – U.S. factories are closing. American manufacturing jobs are reappearing overseas. China's industrial might is growing each year.

And it might seem as if the United States doesn't make world-class goods as well as some other nations.

"There's no reason Europe or China should have the fastest trains, or the new factories that manufacture clean energy products," President Barack Obama said in his State of the Union policy address last week.

Yet America remains by far the No. 1 manufacturing country. It out-produces No. 2 China by more than 40 percent. U.S. manufacturers cranked out nearly \$1.7 trillion in goods in 2009, according to the United Nations.

The story of American factories essentially boils down to this: They've managed to make more goods with fewer workers.

The United States has lost nearly 8 million factory jobs since manufacturing employment peaked at 19.6 million in mid-1979. U.S. manufacturers have placed near the top of world rankings in productivity gains over the past three decades.

That higher productivity has meant a leaner manufacturing force that's capitalized on efficiency.

"You can add more capability, but it doesn't mean you necessarily have to hire hundreds of people," says James Vitak, a spokesman for specialty chemical maker Ashland Inc.

The industry's fortunes are brightening enough that U.S. factories are finally adding jobs after years of shrinking their payrolls. Not a lot. But even a slight increase shows manufacturers are growing more confident. They added 136,000 workers last year — the first net increase since 1997.

What's changed is that U.S. manufacturers have abandoned products with thin profit margins, like consumer electronics, toys and shoes. They've ceded that sector to China, Indonesia and other emerging nations with low labor costs.

Instead, American factories have seized upon complex and expensive goods requiring specialized labor: industrial lathes, computer chips, fighter jets, health care products.

Consider Greatbatch Inc., which makes orthopedics and other medical goods. The company is expanding its manufacturing operations near Fort Wayne, Indiana. Greatbatch wanted to take advantage of a specialized work force in northeastern Indiana, a hub of medical research and manufacturing.

"When you're talking about medical devices, failure is not an option," CEO Thomas Hook says. "It's a zero-mistake environment. These products are customized and high-tech. They go into patients to keep them alive."

Hook says the United States offers advantages over poorer, low-wage countries: reliable supplies of electricity and water, decent roads. And some localities support businesses by providing infrastructure and vocational training for potential hires.

Centerline Machining & Grinding in Hobart, Wisconsin, which makes custom parts for manufacturers in the paper industry, plans to add to its staff of 26. But it's struggling to find the skilled tradesmen it needs for jobs paying \$18 to \$25 an hour.

CEO Sara Dietzen laments that local vocational schools cut back training courses in recent years, having concluded that the future for manufacturing was dim. Not from her view it isn't. For her company, output is all about speed.

"Our average customer wants a turnaround in less than three weeks," Dietzen says. "You're not going to get that in China."

Still, economist Cliff Waldman of the industry research group Manufacturers Alliance/MAPI doubts that U.S. factories will continue to expand their payrolls in the long run. Manufacturing, he says, is "not a job creator for the U.S., basically."

Global competition will always force factory managers to try to replace expensive workers with machines or with low-wage labor overseas, Waldman says.

Mark Perry, a visiting scholar at the conservative American Enterprise Institute, likens the loss of manufacturing jobs to the exodus of workers from farms between the 19th and 20th centuries. If that migration hadn't happened, Perry says, "we'd still have millions of people working in agriculture. Now, we can employ fewer people in factories."

But the transition can be painful, he concedes.

The U.S. remains No. 1 in global manufacturing, accounting for 18 percent of global manufacturing output in 2008. But China is catching up. Its share of manufacturing output jumped from about 6 percent in 1998 to 15 percent in 2008.

Critics have a ready explanation for that: unfair competition.

Robert Scott of the left-leaning Economic Policy Institute says China is cheating in world markets by keeping its currency artificially low to make Chinese products less expensive overseas and unfairly subsidizing its exporters.

Scott and other critics want to see the Obama administration support U.S. manufacturers by pressuring Beijing to drop the subsidies and let its currency rise freely. A higher-valued Chinese currency would make U.S. exports cheaper for Chinese consumers.

Centerline CEO Dietzen says she isn't fazed by Chinese manufacturing. Some of her customers have placed orders with Chinese companies, she says, only to return, frustrated, to her company.

Chinese factories want mainly big orders. And they demand lots of time to fill them.

Dietzen says her clients are "finding when they get their parts back from China, they're not always what they want. So we end up doing the work anyway."

"A common misperception," Greatbatch CEO Hook says, is that the United States doesn't make anything anymore.

The reality is rather different.

"We need a highly skilled work force," Hook says. "So it's very advantageous to be in a country like the United States where people are educated and ready to be hired."

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