



Compete.

Council on
Competitiveness

National Competitiveness Forum

2013
Post
Report

National Competitiveness Forum

Wednesday, October 30, 2013

The Newseum

Knight Conference Center

555 Pennsylvania Avenue, N.W.

Washington, D.C. 20001

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From Our Leaders

The Board and Executive Committee of the Council on Competitiveness welcome you to the 2013 National Competitiveness Forum (NCF).

Each year, the NCF brings together thought leaders representing every major sector of the economy—academia, labor, the national labs and government—to assess the state of U.S. competitiveness and make recommendations to strengthen America’s economic path forward. Through the Council’s Clarion Call for Competitiveness, our members are providing their assessment of where America stands; and this call to action makes clear that despite our inherent strengths, we walk on uncertain ground.



Yet the Council’s message and that of the NCF is a hopeful one for the country. We are reminded of America’s accomplishments and the foresight of its founders, as we are fortunate to dine among the collected works of the Library of Congress. And, we honor at dinner two members of Congress who on key competitiveness issues have sought common ground across what at times seems an un-crossable political chasm in Washington.

The NCF features a series of conversations engaging CEOs, college and university presidents, labor leaders, and lab directors, as well as top government officials, on critical aspects of the competitiveness landscape. We urge your participation in these conversations, as they both validate and shape the Council’s agenda on issues from energy and manufacturing competitiveness to technology policy to the opening of markets around the globe.

Consider some of the questions being posed to our speakers. What is the future of higher education? What skills should workers have to prosper in the next decade? What needs to happen to bring about an American manufacturing renaissance? Are we making the most of an energy surplus or missing an opportunity? Can we ever hope to get our fiscal house in order? How do we invest in our future and reduce the deficit and debt? How do we continue to innovate and protect our intellectual property?

The answers to these questions are vital to America's prosperity and economic growth. As the Clarion Call makes clear—now is the time to set politics aside and to act.

Thank you for joining us for the NCF and thank you you for your engagement in our mission.



Samuel R. Allen
Chairman and Chief Executive Officer
Deere & Company
Chairman
Council on Competitiveness



Deborah L. Wince-Smith
President & CEO
Council on Competitiveness

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Georgia Institute of Technology
Lincoln Electric



Agenda

MORNING

7:30 Registration and Networking Breakfast

8:15 Where America Stands—The 2013 Clarion Call for Competitiveness

The Council on Competitiveness will release its 2013 Clarion Call for Competitiveness assessing progress and challenges on critical national competitiveness issues. The *Clarion Call* sets forth an actionable path forward and outlines a strategy for policymakers and private sector leaders to build long-term sustainable economic growth.

Mr. Samuel R. Allen
Chairman and Chief Executive Officer, Deere & Company
Chairman, Council on Competitiveness

The Honorable Deborah L. Wince-Smith
President & CEO, Council on Competitiveness

8:40 Formal Release of the 2013 Clarion Call and Council on Competitiveness Executive Committee Photo

8:45 Leadership Perspectives on Competitiveness Trends and Drivers

A series of one-on-one discussions with leading CEOs to discuss mega-trends, emerging opportunities, technological transformations and key challenges to turbocharge U.S. competitiveness.

Provocateur

Mr. Albert R. Hunt
Columnist, Bloomberg View
Host, Political Capital with Al Hunt

Energy and Investment

Mr. Frederick W. Smith
Chairman and Chief Executive Officer, FedEx Corporation

Fiscal Policy, Tax and Regulation

Mr. Jeff M. Fettig
Chairman and CEO, Whirlpool Corporation

Next Generation Infrastructure

Mr. Eric Spiegel
President and CEO, Siemens Corporation

9:45 Networking Break

10:30 The Future of Higher Education

The U.S. higher education system is among the best in the world conferring tremendous competitive advantage to America. How secure is that position? Are universities and colleges adapting to the rapidly changing global economy and its demands for evolving worker skills? Will online learning, MOOCs and innovations like Khan and Code Academies serve as disruptors and leave traditional higher education behind? And has the cost of higher education finally reached a point where students will seek out or demand alternatives that prepare them for the workforce without the burden of debt? This panel of university leaders will look inward and engage with each other to answer these questions.

Provocateur

Ms. Megan Hughes
Washington Correspondent, Bloomberg TV

Panel

Dr. Michael M. Crow
President, Arizona State University

Dr. John J. DeGioia
President, Georgetown University

The Honorable Mitchell E. Daniels, Jr.
President, Purdue University

Dr. Pradeep K. Khosla
Chancellor, University of California, San Diego

11:30 The Future of Work

Talent-driven innovation is repeatedly cited as the most important factor for competitiveness by CEOs around the world. But, the nature of work itself is changing, and this trend is particularly stark in the United States where the need for technical skills, creativity, problem solving and entrepreneurship is becoming a requirement for future success. Four short presentations will precede a roundtable discussion on how the U.S. must educate and train its workers for success.

Workforce Engagement in the U.S. and Around the World

Mr. James K. Clifton
Chairman and CEO, Gallup, Inc.

The A in STEAM

The Honorable G. Wayne Clough
Secretary, The Smithsonian Institution

The E in STEM

Mr. Blake Moret
Senior Vice President, Control Products & Solutions,
Rockwell Automation
Chairman-Elect, The Manufacturing Institute,
National Association of Manufacturers

Bridging Skills and Jobs

Mr. J. David Armstrong, Jr.
President, Broward College

AFTERNOON

12:20 Lunch

12:45 Keynote Speaker

The Honorable Penny Pritzker
Secretary, U.S. Department of Commerce

1:45 Getting our House in Order

A national debt now more than \$17 trillion, an annual deficit of several hundred billion dollars, a complex and antiquated tax system and a Congress known more for gridlock and partisanship than accomplishments and compromise place America's future economic growth upon a crumbling foundation. This panel will explore ways in which that foundation can be strengthened and offer their insights on the steps necessary to move in that direction.

Provocateur

Mr. Phil Mattingly
White House Correspondent, Bloomberg News

Panel

Mr. Mark A. Weinberger
Global Chairman & CEO, Ernst & Young LLP

Mr. Robert L. Reynolds
President and Chief Executive Officer, Putnam Investments

Mr. Paul A. Yarossi
President, HNTB Holdings Ltd.
Executive Vice President, HNTB Corporation

Mr. Nicholas T. Pinchuk
Chairman and Chief Executive Officer, Snap-on Incorporated

2:45 Encouraging Companies to Build it Here and Export it There

Driving investment into a state, city or region requires a perfect storm of collaboration between industry, government, academia and the workforce. For the U.S. economy to grow, regional economies must grow and create an environment that encourages investment, enhances workers skills and builds upon homegrown strengths. Key stakeholders in this process will offer their perspectives on the opportunities and challenges.

Provocateur

Ms. Stephanie Kirchgaessner
Washington Correspondent, *Financial Times*

Panel

Mr. Daniel R. DiMicco
Executive Chairman, Nucor Corporation

Dr. Thomas E. Mason
Director, Oak Ridge National Laboratory

The Honorable Scott Smith
Mayor, City of Mesa, Arizona
President, U.S. Conference of Mayors

Dr. Harris Pastides
President, University of South Carolina

3:45 Deriving Value from Investments in People and Ideas

The United States invests billions of dollars in research and education. Yet the value accrued from these investments, in the form of new companies, products, services, and jobs, is largely dependent upon whether the regulatory, financial and physical infrastructure is in place to empower creative people to reach their full potential and to bring ideas out of the lab and to market. Manufacturing is a critical part of this puzzle as is the linkage between the skills and training workers receive and the opportunities the marketplace provides. Representing industry, academia and labor, this panel will discuss the potential for a continued manufacturing renaissance and strategies to maximize the potential of the American workforce.

Provocateur

Mr. Scott Horsley
White House Correspondent, National Public Radio

Panel

Mr. James P. Hackett
Chief Executive Officer, Steelcase Inc.

Dr. G.P. Bud Peterson
President, Georgia Institute of Technology

Ms. Randi Weingarten
President, American Federation of Teachers,
AFL-CIO

Mr. Jeffrey J. Wilcox
Vice President of Engineering, Lockheed Martin
Corporation

4:50 Looking Ahead: The American Energy and Manufacturing Competitiveness Partnership Summit and the 10 Year Anniversary of the National Innovation Initiative

Mr. Samuel R. Allen
Chairman and Chief Executive Officer, Deere & Company
Chairman, Council on Competitiveness

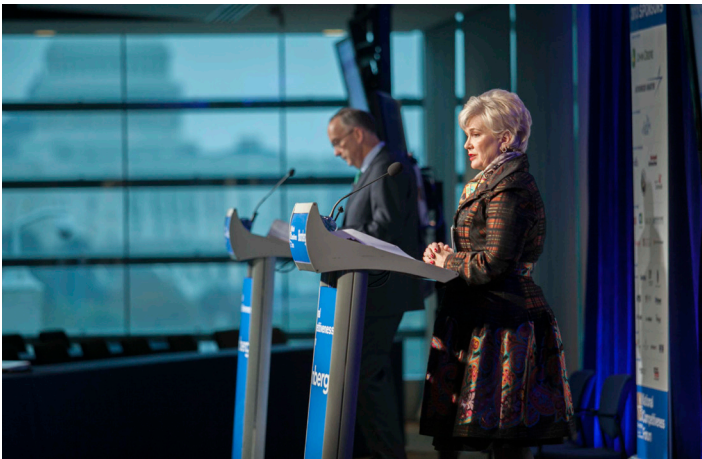
The Honorable Deborah L. Wince-Smith
President & CEO, Council on Competitiveness

The Honorable David T. Danielson
Assistant Secretary for Energy Efficiency and Renewable Energy, U.S. Department of Energy

5:00 Closing Reception

All speakers and attendees are invited to a reception with special guests from Congress and the administration.

Where America Stands: The 2013 Clarion Call for Competitiveness



Council Chairman, Mr. Samuel R. Allen, and Council President & CEO, Ms. Deborah L. Wince-Smith, opened the 2013 National Competitiveness Forum by offering the following introduction prior to the release of the Council's 2013 *Clarion Call: A Look Back and a Path Forward*.



Turbulence. Transition. Transformation. These are the hallmarks of today's global economy.

In these uncertain times, nations that prepare their people, institutions, and laws to compete will set the stage for future prosperity and growth. Nations that fail to act will fall behind.

The global economic horizon is painted with both silver linings and dark clouds. The Council's Clarion Call for Competitiveness identifies key economic challenges, and offers solutions to position America to leverage its strengths and address shortcomings hindering our competitive performance.

America's strengths are recognized around the world, and our most important advantage is the American people. Our workers are creative, industrious, and among the world's most productive.

American innovators continue our 150-year legacy of reshaping the world, entire industries, and the marketplace with breakthrough technologies, products, and services.

We lead the world in high-tech manufacturing, technology-infused services, and agriculture.

About \$400 billion in U.S. R&D investment annually is building-up a globally unparalleled stock of scientific and technological assets.

Hundreds of renowned research institutions and national laboratories keep us at the forefront of knowledge and the cutting edge of game-changing technologies.

Our culture of entrepreneurship, risk-taking, and creativity is unmatched around the globe.

Despite our competitive advantages, dark clouds threaten to dim America's economic future. Federal taxes and regulatory policies are outright counter-productive to investment in the United States.

Our 35 percent basic corporate tax rate is much higher than the average among many of our competitors.

The United States is being dragged down by \$16 trillion in national debt and \$1 trillion in annual deficits. If left unchanged, America's fiscal path could lead to a sovereign default or the imposition of significantly higher borrowing costs.

The longer our leaders defer fiscal reform—including reform of Social Security, Medicare, Medicaid, and the tax system—the more painful the remedies will be.

Many businesses say they cannot find the skilled workers they need.

The uneven performance of America's K-12 schools, the high cost of higher education, and the need for better technical skills training are cracks in America's foundation for success that must be corrected.

American entrepreneurs are struggling, new business establishments have dropped significantly in recent years, and our small businesses are burdened by high tax and regulatory costs.

America's political leaders must tackle these problems now.

To drive U.S. productivity, buttress our leadership in world markets, and raise the standard of living for all Americans, the United States must:

- Ensure lower cost, easy access to high quality education and training for all Americans
- Maintain long-term federal investments in science and technology leadership
- Reform and simplify the tax code to stimulate investment and attract global capital to the United States

Over the next ten years we must:

- Create at least 21 million jobs
- Reduce unemployment to 5 percent
- Reduce government debt by \$4 trillion to ensure America's long term solvency
- Invest \$2.2 trillion in infrastructure to maintain competitive advantage
- Double exports

Meeting these goals requires a national pro-growth strategy coupled with significant fiscal discipline.

The Council has identified three core principles that are central to this strategy:

- Innovation
- Economic resilience
- Sustainable energy

In a series of reports over the past decade, the Council and its members have laid out a roadmap for policymakers to maximize the U.S. potential in each of these areas.

Taken together, the recommendations in these reports have the potential to unleash a new era of American innovation, create new industries, revitalize manufacturing across our nation, keep and grow high-skilled jobs for this generation and the next, and deliver economic prosperity for all Americans.

Among the most important of these recommendations is the need to invest in America's Future:

- Double the federal investment in R&D, and encourage cross-sector/multi-disciplinary partnerships to commercialize research and solve global challenges.
- Lead in high performance computing by committing to exascale computing
- Expand science, technology, engineering, and math education linked to projected job opportunities of the future.
- Strengthen career and technical education and training programs through partnerships with business or labor that prepare students and workers for good jobs that fill labor market needs.
- Reform immigration rules to ensure that the world's best talent innovates and creates opportunities in the United States. We must staple a green card to the diplomas of highly-skilled immigrants who acquire an advanced degree in the United States.

Equally as important is the need to Ensure Value from American Investments. We must:

- Deploy modern and resilient energy, transportation, and cyber infrastructures to encourage investment and production in the United States, and to take full advantage of domestic energy supplies.
- Implement a national network of advanced manufacturing clusters and smart factory ecosystems.
- Re-assert U.S. leadership in global trade, expand market liberalization, and forge strategic agreements with key trading partners.
- Promote best practices in the protection of intellectual property rights around the world.

We need to encourage companies to build it here and export it there.

- Lower the corporate tax rate to 23 percent,
- Reduce taxes on repatriated earnings to less than 5 percent.
- Authorize the Export-Import Bank to fund domestic infrastructure projects.

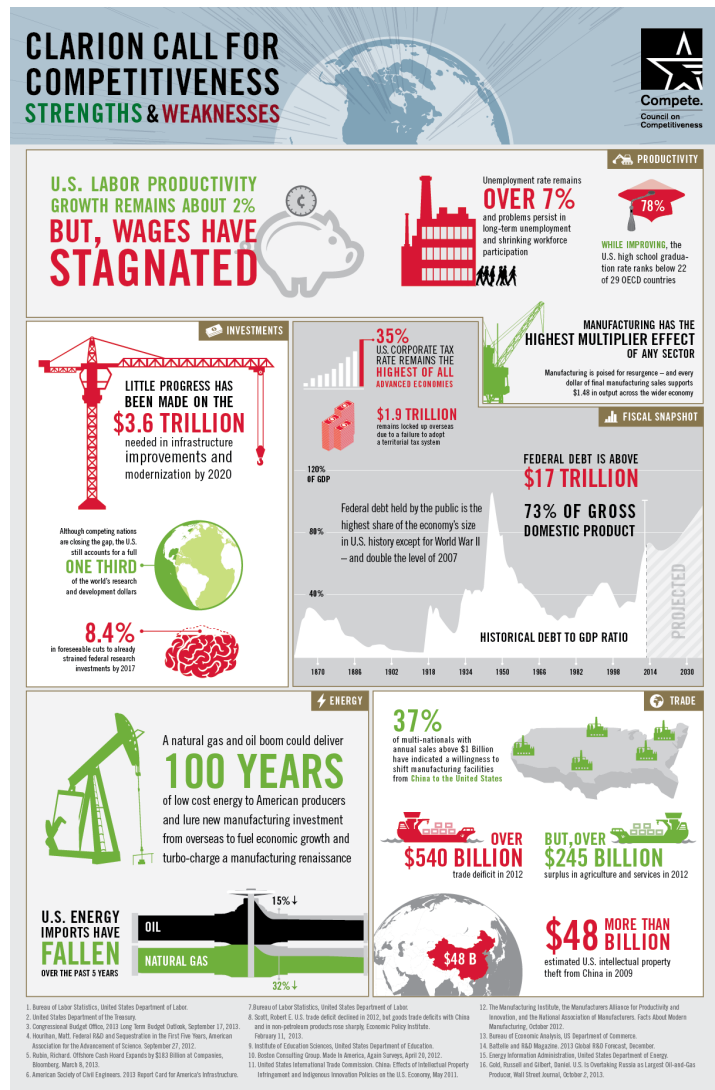
And most of all...we must get our house in order.

- We call on the Administration and Congress to work together, across party lines, to compromise on spending and revenue measures that will bring the Nation's deficit and debt down to historical norms.
- We must enact a long-term fiscal framework to reduce debt as a share of the economy by:
 - putting in place common sense adjustments to Social Security to ensure the program's long-term viability;
 - reforming and reduce the growth in Medicare and Medicaid spending; and
 - reforming and simplifying the tax code.

On behalf of the Board and Executive Committee of the Council on Competitiveness, we are pleased to share with you today our Clarion Call for Competitiveness.

A clarion call is loud and conveys an imminent danger. It demands action. Such a pivotal moment should bring out the best in America. Historically, when confronted with our greatest challenges, we have risen to meet them. We do not ask, why us? We act. We fix it. Now is such a time.

The Council on Competitiveness offers this agenda as a roadmap for Congress, the administration, Governors, and the country. The Council seeks action from America's leaders regardless of party affiliation and in cooperation with the private sector. The United States is the greatest country in the world with the largest economy, but that status was earned, not given. To maintain our leadership, we will have to earn it.



Panel I: Leadership Perspectives on Competitiveness Trends and Drivers

This section of the agenda is a series of one-on-one discussions with leading CEOs covering mega-trends, emerging opportunities, technological transformations and key challenges to turbocharge U.S. competitiveness.

PARTICIPANTS

Provocateur

Mr. Albert R. Hunt
Columnist, Bloomberg View
Host, Political Capital with Al Hunt

On Energy and Investment

Mr. Frederick W. Smith
Chairman and Chief Executive Officer, FedEx Corporation

On Fiscal Policy, Tax and Regulation

Mr. Jeff M. Fettig
Chairman and Chief Executive Officer, Whirlpool Corporation

On Next Generation Infrastructure

Mr. Eric Spiegel
President and Chief Executive Officer, Siemens Corporation

Provocateur Al Hunt first spoke with Mr. Frederick W. Smith of on energy and investment, including the major focus of FedEx on transportation and fuel consumption.

The Energy Security Leadership Council [was established] to make some recommendations to the government. And they really came in 3 forms:

1. Produce the absolute maximum amount of U.S. oil and gas possible.
2. Use as little of it as you can, in other words support fuel efficiency standards.
3. Develop alternatives—electrification, light duty transportation, natural gas, and so forth.

Even if we make a maximum effort to diversify our transportation, and you have to do that if you want to reduce oil consumption because it's 70 percent of the oil that we use and 95 percent of transportation is liquid fuels—92 percent oil and maybe 3-4 percent ethanol. So you've got to attack transportation and reduce consumption, but we need to maximize production here for our own economic well-being.

We use about 3 million barrels of oil for heavy trucks over the road and there's no question that a big part of it is going convert over to natural gas which is cheaper, less environmentally concerning and so forth.

We [FedEx] have a lot of all electrics in Chicago, LA; dense vertical markets. Those vehicles—the cost of operating them is 75 percent per mile less than the Sprinter I just mentioned...the infrastructure is in place in terms of the power plants...elec-



tric power goes into the propulsion of the vehicle at the rate of 93 percent of efficiency. An internal combustion engine to put that in perspective is 27 percent.

As the conversation with provocateur Al Hunt of Bloomberg continued, Mr. Smith pivoted to where the government has its most effective roles:

It seems to me that the government plays the most effective role in 2 ways. One is in basic research, which is difficult for any profit-making organization to fund beyond a certain level. Secondly, using incentives to let the market cross the chasm to use the famous phrase. Where the government gets into trouble is where they start trying to fund individual participants in between those two poles.

So why isn't Joe Sixpack getting a job here? The first reason and by far the most is that we don't have the level of investment we used to. The only thing that is 100 percent correlated to job creation is the investment in private equipment and software and the government's investment in infrastructure. We were investing 6 percent of GDP in infrastructure in the 60s and we are investing 1 percent of



Mr. Albert R. Hunt, Columnist, Bloomberg View, and Host, Political Capital with Al Hunt, interviews participants during Panel I.

Top: Mr. Frederick W. Smith, Chairman and Chief Executive Officer, FedEx Corporation.

Center: Mr. Jeff M. Fettig Chairman and Chief Executive Officer, Whirlpool Corporation

Bottom: Mr. Eric Spiegel, President and Chief Executive Officer, Siemens Corporation.

GDP now. The fuel tax to fund infrastructure investment fully supported by the industry like FedEx and others hasn't been raised in 20 years.

You have to have incentives for people to invest and we do not have that in our tax code. The second is that we have too much regulation and the third is that we have a mismatch of skills and education.

This teed up nicely the conversation between Al Hunt and Mr. Jeff M. Fettig, Chairman and Chief Executive Officer, Whirlpool Corporation, focusing on fiscal policy, the tax code, and regulation.

When Al Hunt how important it is for American competitiveness to rewrite the corporate tax laws in this Congress, Mr. Fettig replied:

This is not a tax code that was developed, but a tax code that happened over time...Today we have the highest tax rate in the world for our businesses. At 35 percent and arguably it's higher than that when if you add state and local taxes; you know we figure, that it's really about 40 percent, if you will, in this country. If you look at the OECD countries the average is now below 25 percent and the trend for everyone is going down, not up.

As with Mr. Smith of FedEx, Mr. Fettig of Whirlpool agreed that the U.S. tax code is vital to our nation's competitiveness: It's about competitiveness and how do you attract investment. A tax rate disadvantage of the magnitude that we have is very punitive to U.S. companies in any industry.

We need to overhaul the tax code. Eliminate a lot of the special interest exemption and all that kind of stuff. We need to be probably in the 25 percent tax range to be competitive. We have got to find a way to repatriate earnings without punitive impact. And again move to a territorial tax system which virtually every other country in the world does.

If we had a competitive rate, if we had consistency and predictability in whatever it is, we would be a better company over time ...than with random benefits over time that we cannot predict. Many companies believe that; many, but not all.

Tax code reform I believe would be a huge economic stimulus that benefits everyone.

In wrapping up the conversation, Mr. Fettig stated: I think that growing jobs but also growing wages is critical to have growth in our economy. I think part of our solution is back to what we spoke of before we need good job, to have good jobs you've got to have investments, and to get investments you have to be able to generate returns.

Investment, yet again, echoed now by the first two of our CEO's leads into our final CEO one-on-one conversation—Mr. Eric Spiegel, President and Chief Executive Officer, Siemens Corporation on next generation infrastructure. As with the other two presenters, Al Hunt began by teeing up the basics on investment and infrastructure to Mr. Spiegel explained a bit on Siemens and what he has learned about investing in America.

It's very tangible when you are making an investment...Just about every time we make a major investment in this country you have to go in and you have to make a lot of your own infrastructure investments. Now sometimes you get a little money from the state or the city or sometimes they give you a little tax break, but the fact of the matter is the infrastructure in this country...we're playing the game, we're playing a global game with infrastructure that's 2-3 times the age of the infrastructure in the most attractive markets in the world today.

The three biggest things:

1. Transportation network itself including more public transportation
2. The energy grids—both electric and oil and gas grid
3. Water infrastructure

When you're a big global company you're taking a look at not just is there demand in that market but do they have the infrastructure so that you can do things because in any of these places export is important as well.

Any time you put in infrastructure that connects markets it has a huge impact...We've found that when you connect cities that the GDP of the cities grow 2 to 3 times faster than those that aren't connected.

When I talk to mayors out in cities they want higher speed rail. I think of the things we're going to have to do is find a way not to fund it publicly but find a way to do it privately.

A light rail can move 8 times as many people as roads do. Guess what? Building more highways is much easier the way things get funded than building a light rail.

When Al Hunt queried Mr. Spiegel on if the income inequality gap affects decisions to invest in America, Mr. Spiegel commented:

I think absolutely. One of the things I see is that we've got to find ways to rebuild the middle class because of this divide. A lot of the old jobs aren't coming back, but there are a lot of new jobs.

We take a look at Siemens; over the next 5-6 years we're, going to need 4-5 thousand people with IT skills because all of our manufacturing; all of the products we make have software in them today. Our plants today are all run by computers, robots and lasers. We've built several new plants in the last few years, and we can't find people to work in the plants.

We're doing a lot of apprentice programs now with community colleges and things. We hire them right out of high school and they go through the apprentice program; they go right to work. We guarantee them a job. So they have no debt, a two-year degree. They have a certificate with a real skill.

We have the lowest rate of any developed country in the world in terms of developing high school students with a skill—a real marketable skill. And the vast majority of our college graduates don't have a skill—they might have a degree, but they don't have a skill. So we've got to start focusing on skills because that's where the jobs of the future are going to be and that's how we will create the new middle class.

We've got to start focusing on skills because that is where the jobs of the future are going to be, and that's how we're going to create the new middle class—and that is how I think we close this divide [income inequality].

Panel II: The Future of Higher Education

The U.S. higher education system is among the best in the world, conferring tremendous competitive advantage to America. How secure is that position? Are universities and colleges adapting to the rapidly changing global economy and its demands for evolving worker skills? Will online learning, MOOCs and innovations like Khan and Code Academies serve as disruptors and leave traditional higher education behind? And has the cost of higher education finally reached a point where students will seek out or demand alternatives that prepare them for the workforce without the burden of debt? This panel of university leaders will look inward and engage with each other to answer these questions.

PARTICIPANTS

Provocateur

Ms. Meagan Hughes
Washington Correspondent, Bloomberg TV

Dr. Michael M. Crow
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President, Georgetown University

The Honorable Mitchell E. Daniels, Jr.,
President, Purdue University

Dr. Pradeep K. Khosla
Chancellor, University of California, San Diego

Provocateur Meagan Hughes of Bloomberg TV began with, as she put it, the softball question of wanting to hear what each university is doing to become more competitive. Dr. Michael Crow of Arizona State University started off for the panel of distinguished university presidents:

So for us, what we've focused on is the change of the cultural paradigm, that is the notion of making the institution more student centric than faculty centric. So the institutions exist for the students not the faculty and this is something that is difficult for a lot of institutions to get their mind around. Now this does not diminish the role of the faculty at all, it focuses the energy of the faculty on these objectives and once you start thinking that way then you become more willing to alter everything. So for us the way to contain cost is to change culture...Innovation is our principle driver right now. The introduction of technology if you do it correctly can lower some of your fundamental cost structures.



Ms. Meagan Hughes, Washington Correspondent, Bloomberg TV; Dr. Michael M. Crow, President, Arizona State University; Dr. John J. DeGioia, President, Georgetown University; The Honorable Mitchell E. Daniels, Jr., President, Purdue University; and Dr. Pradeep K. Khosla, Chancellor, University of California, San Diego.

Dr. Pradeep Khosla of the University of California San Diego added:

I think I am also focusing on part of the strategic planning process—on administrative processes that are just adding to the burden. There's two types; one is self-imposed and the other is federally imposed.

Our job is how do we prepare a master learner—a person capable of learning anything and adapting to anything? And that's a completely different paradigm than we've had in the past.

This led the panel down an interesting path of discussing the effect of Massive Open Online Courses (MOOCs) and what each institution is doing to integrate (or not) MOOCs into the working of their institution of higher education.

Dr. Crow shared for ASU: In our particular case we are trying to aggregate and absorb technological capabilities that allow us to be better teachers, better researchers, better whatever it is we're trying to do. So MOOC's are yet another thing to be absorbed. That is they are a tool and a mechanism that allow us to enhance learning, broaden learning, deepen learning and lower the cost of learning.

Dr. Jack DeGioia of Georgetown commented: For us, all I see right now is expense, I don't see a revenue model yet [referencing Georgetown classes on EdX platform).



Dr. Michael M. Crow, President, Arizona State University.



Dr. John J. DeGioia, President, Georgetown University.

Dr. Khosla agreed: MOOC's are not cheap and they are not going to cut down our costs.

Dr. Crow continued: The route is to find ways to stimulate innovation—to stimulate innovation at every level. So in our case we're having MOOC's developed at our expense which have the sole purpose of attracting more children to engineering.

The way that makes things happen is to find a way to innovate...you find those that are willing to innovate, you stimulate their innovation and the others either innovate or die. That's the way that it works. The innovators will move forward with better performance and we'll be better off because of it. That's what we need to figure out how to do across all these educational sectors.

As the conversation moved away from MOOCs to issues around access, attracting talent, and ensuring a competitive, valued institution in today's tight economic times, Mr. Mitch Daniels of Purdue stated:

We've got to be more student centered and improve our success rate all up and down the chain.

Dr. DeGioia built on Mr. Daniel's comment: The most important thing we need to be thinking about as a nation right now is how can we reinvigorate a dialogue about higher education as a public good?... We can't assume as a nation that we are going to be able to sustain the quality of our institutions unless we recommit ourselves to the understanding that education is a public good.

In discussing changes necessary for institutions which receive, and are to some degree dependent on, dwindling public funding of higher education, Dr. Crow discussed ASU's focus: The new model we're struggling to try and find is a model of self-reliance. We're suggesting you gain self-reliance through innovation. Many universities are highly adaptable and change oriented.



The Honorable Mitchell E. Daniels, Jr., President, Purdue University.



Dr. Pradeep K. Khosla, Chancellor, University of California, San Diego.

Amongst the funding structure for both public and private universities are the intellectual property rights (IPR) and patents of both faculty and students—but that tide is changing as well.

Mr. Daniels shared the following innovative transition of IPR at Purdue University: **If you are an undergrad at Purdue University and you come up with something patentable, it's yours. We want to encourage our young people every way we can to think this way and to aspire to that.**

Funding was clearly on the minds of the panelists. Dr. DeGioia illuminated a necessary focus which falls right in line with the Council's Clarion Call for Competitiveness on the public funding of our nation's research universities as the panel transitioned to questions from the audience:

We are watching right now the undermining of the framework that has sustained American research universities since the end of the second World War...There are countries that are investing significantly more. You're looking at double digit increases in other parts of the world by governments in support of research within their institutions and in our context we are actually declining.

But again, if we think that we are going to be able to sustain competitiveness as a nation we cannot ignore the need for us to sustain our commitment to research, and in particular from my context I would say basic research—because that's the piece that is harder to get funded any other way than through public support.

Panel III: The Future of Work

Talent-driven innovation is repeatedly cited as the most important factor for competitiveness by CEOs around the world. But, the nature of work itself is changing and this trend is particularly stark in the United States where the need for technical skills, creativity, problem solving and entrepreneurship is becoming a requirement for future success. Four short presentations will precede a roundtable discussion on how the U.S. must educate and train its workers for success.

PARTICIPANTS

Workforce Engagement

Mr. James K. Clifton
Chairman and CEO, Gallup, Inc.

The A in STEAM

The Honorable G. Wayne Clough
Secretary, The Smithsonian Institution

The E in STEM

Mr. Blake Moret
Senior Vice President, Control Products & Solutions,
Rockwell Automation; Chairman—Elect, The
Manufacturing Institute, National Association of
Manufacturers

Bridging Skills and Jobs

Mr. J. David Armstrong, Jr.
President, Broward College

Workforce Engagement in the United States and around the World

Mr. James K. Clifton

Gallup, Inc. released *The State of the American Workplace: Employee Engagement Insights for U.S. Business Leaders* report in 2013 highlighting findings from Gallup's ongoing study of the American workplace from 2010 through 2012. The report is a continuation of Gallup's previous report on the U.S. workplace covering 2008 through 2010. This latest report provides insights into what leaders can do to improve employee engagement and performance in their companies. It includes an overview of the trend in U.S. employee engagement, a look at the impact of engagement on organizational and individual performance, information about how



James K. Clifton, Chairman and CEO, Gallup, Inc.



The Honorable G. Wayne Clough, Secretary, The Smithsonian Institution.

companies can accelerate employee engagement, and an examination of engagement across different segments of the U.S. working population.

There has been a change recently that is really important...and it's a huge sociological shift. The will of America has changed- it's changed from peace, family, freedom and independence...it's changed to having a good job.

What the whole world wants is a good job.

What we found is that when you have a job...There are three categories, engaged, not engaged, and actively disengaged. Where is innovation? It's the number of people who are engaged [in their work].

In the US, there's a hundred million good jobs in America, there are 30 million people in American that came to work engaged. We're betting our whole country on that 30 million. So we need innovation, we need entrepreneurship, we need cus-

tomor development. We need all that kind of stuff. Only those 30 million will get it. The whole world's engagement is only 15 percent.

What can we do to drive global GDP? It's to take the 15 percent and double it. I'd bet the whole Gallup organization that if we could double that 15 percent to 30 percent the whole world would start to heal again.

The A in STEAM

The Honorable G. Wayne Clough
Secretary, The Smithsonian Institution

The fact that there is a combination in creativity between arts and science or engineering is not surprising The question is what do we make of it? Why do we want to have the A in STEAM in STEM?

Because it emphasizes that the creative impulse is across spectrums of discipline are really the same thing.

When we are talking about the subject of getting more young people into this workforce and who are trained and educated in STEM, we've got to hook them in every way we can hook them... But if we can do it through arts, more power to us, and that will be helpful to us to do it.

Lot of them [engineering students] drop out because they get bored with those basic topics and they don't see originality in those topics. We know from the studies that fifty percent of them drop out. And art can help them stay in.

When you combine art and science and math and engineering you get something very special. And you tend to attract a kid who might not be attracted and you tend to maintain that kid in engineering studies who might not ordinarily stay there, who would ordinarily drop out and say I'm bored.

When I was at Georgia Tech we said we've gotta have kids that use both sides of their brain.

Our kids have to have something else they bring to the table and that is cross-disciplinary thinking and that is learning how to live in a STEAM world.

STEM is critical because you've got to master the fundamentals, but STEAM gives you the opportunity to give something very exciting to the kids and have them be joyful in what they do.

The E in STEM

Mr. Blake Moret

Senior Vice President, Control Products & Solutions, Rockwell Automation; Chairman-Elect, The Manufacturing Institute, National Association of Manufacturers



Mr. Blake Moret, Senior Vice President, Control Products & Solutions, Rockwell Automation; and Chairman-Elect, The Manufacturing Institute, National Association of Manufacturers.

We agree that being able to attract some of our best talent into engineering and the ability to provide them relevant competencies and the ability to provide them career long enrichment is absolutely crucial to America's future success.

We are the best place in the world...to produce software and to train people to be competent in a software-based world. Our freedom has enabled just an unparalleled legacy of innovation.

Three key attributes of engineering workforce development that are vital as we move forward:

First—in terms of lifelong learning—a career lasts 40 years or more now, and the ability to provide new skills and refresh old ones is really important. And, engineers are looking for that because things change.



Mr. J. David Armstrong, Jr., President, Broward College.

[Second is] the importance of more fully integrating community colleges into the innovation pipeline and being able to more easily articulate two year degrees into four year degrees.

[Third is] the need to develop partnerships between learning centers and manufacturers. When we look at competency based instruction for current needs, what we're trying to do is create durable jobs that can survive in a global economy that absolutely demands productivity.

We should celebrate the need to hire more people because it's a validation that we have found work, that we've made a decision that is not ephemeral, that's going to last and so we do that.

We can't find all the labor that we need, and the problem becomes even more difficult when we look for the complex, multidisciplinary kinds of skills that really make up work today.

And so it is with our talent today—they want the opportunity to do something that matters. They want to have the skills to be good at it. And then they want the opportunity for continuous improvement.

Bridging Skills and Jobs

Mr. J. David Armstrong, Jr.
President, Broward College

We've seen in so many technology fields for so long now there's a pretty standard pattern. For every engineer that we need more of, certainly, there's typically at least 10 trained technicians that don't even need a bachelor's degree, but they need some form of post-secondary training to operate the machinery that's increasingly sophisticated to be able to support the work that the engineers are creating.

To be competitive in your business, and government, and education as well, need all of our, certainly more, if not all, of our students to be coming out prepared to be competitive

If you're not partnering and communicating, or somebody in your organization, with your local community and technical college, you're missing an opportunity.

I don't know of a community college president that won't pick up the phone from you and take a meeting with you to sit down and talk about where your gaps are and what your gaps are and what your needs are.

Competency based learning...is where we assess their [students] learning, their experience, give them credit for what we can, and then give them the additional ones so that they are set for the certification exam. There are opportunities for higher education to do more and more in those areas.

Luncheon Keynote

The Honorable Penny Pritzker
Secretary, U.S. Department of Commerce

The Council was pleased to host Secretary Pritzker as our luncheon keynote, and here are some highlights from her speech.

CEO's are optimistic about the future of their businesses and about the future of our country.

Last week we found that during the shutdown, we created 120,000 fewer jobs, it trimmed about a quarter point from GDP for the 4th quarter. We can't afford this...As a business leader for 27 years I know that we cannot run a business the way we're doing things here. We cannot run the government this way.

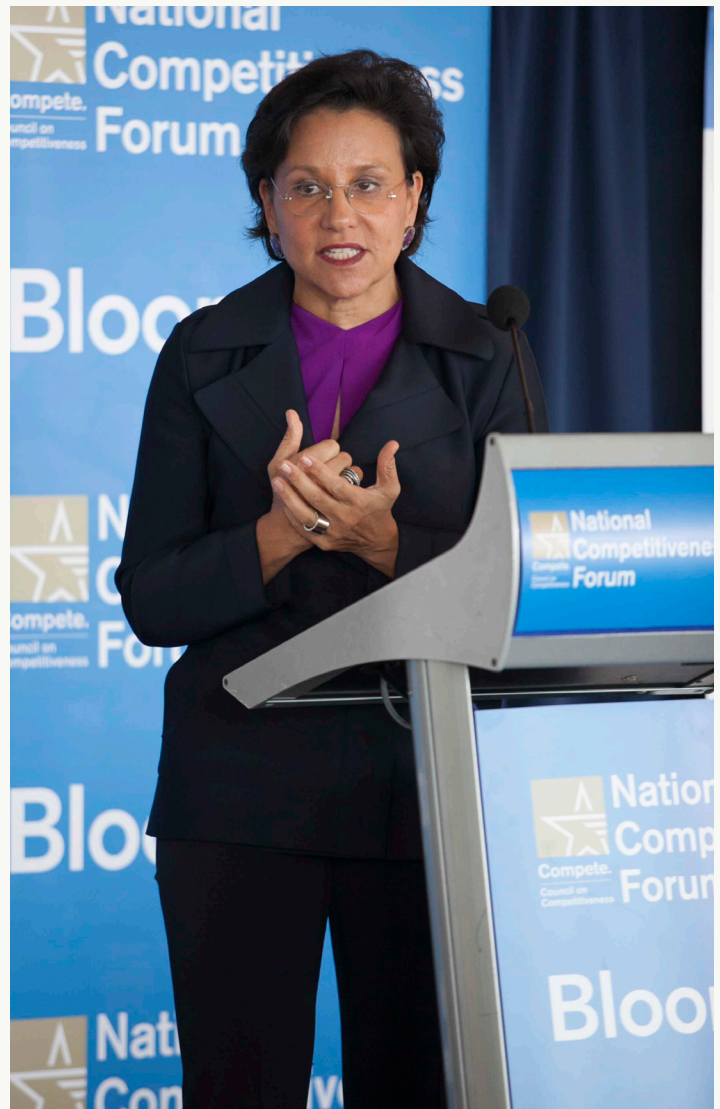
The President and everyone in the room agrees that these self-inflicted wounds to our economy have to stop.

The Council is calling for our nation to invest 2.2 trillion dollars in infrastructure over the next ten years. The fact is and you know it, we've deferred too much investment in this area. With interest rates so low we should put construction crews back to work building transportation hubs and links that can move our goods and services around the world.

Bridges to broadband—we need all of it.

The point being we can't wait any longer. We all must work together to unlock capital for the infrastructure improvements that we all know America needs now.

We need more workers with the right skills.



The Honorable Penny Pritzker, Secretary, U.S. Department of Commerce.

This Council's new paper boldly states that we need to, and I quote, ensure low cost easy access to high quality education and training for all Americans. I couldn't agree more.

An emphasis on STEM education is smart. And we know this, after all STEM related jobs are growing three times as fast as other jobs and they pay about 25 percent more.

So the Council I think is really on the mark in calling for stronger partnerships between training institutions and businesses.

Particularly, businesses need to be more active in working with local training partners to develop meaningful curricula and broadly recognized, stackable credentials.

Overall my message is simple in this area. Let's operationalize locally the models that are most promising.

Secretary Pritzker then moved on to the issue and impact of immigration on our nation's economy and economic growth.

Thirty percent of small business owners in America are immigrants

It's mind boggling to think that our world class universities, many of you are here today in the room, you attract some of the world's brightest students. You give them a top notch education and then we force these potential innovators and job creators to leave America. It's just simply unacceptable. We need to staple a green card to their degrees particularly when they get a degree in a highly specialized areas universities like yours are offering.

Recognizing the important connection between higher education and other key pieces of our nation's competitiveness, the Secretary included comments on nation's investment in research and development.

Every competitive country in the world understands the need to publicly invest in R & D to create a broad base for potential breakthroughs.

The President and this Council are in lockstep on this issue regarding research and development funding. We want to double federal funding for R&D helping to reverse the erosion that we have seen in federal funding in this area. As a percentage of all basic research funding, federal funding has dropped from 70 percent in 1980 to about 57 percent in recent years.

Too many game-changing ideas aren't making it from the lab to the marketplace.

We're hitting all-time records in the United States at 2.2 trillion dollars 2012 of exports. But too few firms in the United States are exporting to too few countries. Less than 1 percent of our companies export and of those nearly 60 percent export to only 1 country.

I want everyone who walks in, from the cleaning staff to foreign dignitaries, to know that America is open for business and that the Commerce Department is an ally for people like you who are leading our nation's top businesses, universities, and other institutions. If we work together I know that we can have a powerful response to the Clarion Call for Competitiveness.

Panel IV: Getting Our House in Order

A national debt approaching \$17 trillion, an annual deficit of several hundred billion dollars, a complex and antiquated tax system and a Congress known more for gridlock and partisanship than accomplishments and compromise place America's future economic growth upon a crumbling foundation. This panel will explore ways in which that foundation can be strengthened and offer their insights on the steps necessary to move in that direction.

PARTICIPANTS

Provocateur

Mr. Phil Mattingly
White House Correspondent, Bloomberg News

Mr. Mark A. Weinberger
Global Chairman & CEO, Ernst & Young LLP

Mr. Robert L. Reynolds
President and Chief Executive Officer,
Putnam Investments

Mr. Paul A. Yarossi
President, HNTB Holdings Ltd.

Mr. Nicholas T. Pinchuk
Chairman & Chief Executive Officer,
Snap-on Incorporated

Given the recent end to the government shutdown, provocateur Phil Mattingly of Bloomberg News easily opened the door for conversation amongst the distinguished panelists on the effect and the implications of the shutdown and legislating by crisis.

Mr. Mark Weinberger of Ernst & Young opened the conversation as such:

The uncertainty is slowing growth...when I am out there [in Russia and China] the only question I get is how could the US squander its lead?

I was at the World Bank-IMF meeting last week here in Washington and leaders from around the world all came here meaning to talk about big thoughts about how to create innovation, jobs, growth and the primary topic was what's going to happen when the government defaults. That can't be good for growth.

Mr. Robert Reynolds of Putnam Investments continued on:

The greatest stimulus in the world is certainty and we've lived in an uncertain world for 4 or 5 years now. Uncertainty is so unhealthy for this economy and everything that goes with it.

Uncertainty emerged as the common concern, and Mr. Paul Yarossi of HNTB Corporation elaborated on the effects of uncertainty:

Going through two years of continuing resolutions and uncertainty in long-term funding creates a real difficult environment for infrastructure planners to plan for longer term projects. And that really cuts back on the ability to set out a new program or a revised program for infrastructure in this country.



Mr. Phil Mattingly, White House Correspondent, Bloomberg News; Mr. Mark A. Weinberger, Global Chairman & CEO, Ernst & Young LLP; Mr. Robert L. Reynolds, President and Chief Executive Officer, Putnam Investments; Mr. Paul A. Yarossi, President, HNTB Holdings Ltd.; and Mr. Nicholas T. Pinchuk, Chairman & Chief Executive Officer, Snap-on Incorporated.

Mr. Nick Pinchuk of Snap-On discussed the scale of the worry about uncertainty:

The worry about the uncertainty is directly proportional to the size. The bigger the company, the more the worry.

Part in parcel with the uncertainty about the government shutdown and government action (or inaction) is the necessity to deal with our nation's debt and deficit, included in the Council's Clarion Call for Competitiveness. Mr. Reynolds reiterated this necessity:

You can't talk about doing anything about the deficit unless you address entitlements. Over the next 20 years if nothing is done it will take 100 percent of the federal budget as we know it today. So you'll

have nothing to spend on defense...anything. So something has to be done. That's the math of the problem.

The conversation transitioned to how business and society at large can work to get Congress to take on the tough decision necessary to not just pick at the edges of such complex challenges as entitlement reform, but tackle these challenges head on, as the Council on Competitiveness includes in its Clarion Call for Competitiveness. Mr. Pinchuk offered the following:

The idea around competitiveness and the shrinking middle class is something that gives the urgency that can provide the cover for Congress to do things—under that banner.

Mr. Weinberger illuminated the challenges that business at times creates for the Congress and the administration:

Sometimes business gets in the way (of lawmakers). I think we need to make clear that compromise is not a dirty word—that in business we never get all we want all the time. Sometimes we hold out too long too. We have to be a mature advocate—I think that we need to set out broad principles about what we need to accomplish about growth and what they are and not worry about filling in all the details because that will change as the committee process works its will.

Mr. Yarossi elaborated: Business needs to stay on the subject and be vocal about it. I do think that business plays a big role and needs to play a bigger role in trying to get something done.

Mr. Pinchuk continued: Strategy is about choice. One of the problems that I think about business in this environment is business as a whole and some organizations in general never saw a business favoring idea it didn't like. And therefore, the list grows so long that we abdicate the choice to others and therefore are ineffective in lobbying.

Frustrations began to rise, with comments including on the void of leadership and the broken process in Washington. Mr. Pinchuk voiced:

I would suggest that the first battle that needs to be won is to impress upon our leadership that we are at a commercial war. And competitiveness is the most important issue. They have to look at each decision through the lens of not encumbering American competitiveness.

Mr. Reynolds pointed out: We are primed for tax reform—especially corporate tax reform. The first thing the government has to do is get out of the business of picking winners and losers.

Do a 20 percent tax and get rid of all the deductions, and it's all settled. You have to have a simplified tax structure that everyone knows and everyone can figure out and go with it and it will create a much, much better pro-growth, pro-business environment over time.

Isn't jobs the answer to much of this? queried Mr. Yarossi. Mr. Pinchuk agreed, stating: The important problem in the near term is just as you say—start the middle class jobs. We can solve these things [entitlement reform] in the light of cooler heads and greater job growth.

Policymakers will move when there is less pain for movement than for not moving, stated Mr. Weinberger. The debt ceiling was a perfect example. The pain would have been so bad if the debt was defaulted on that they finally had to come together and kick it down the road.

And when discussing policymakers further and what comment would he want shared with Congress, Mr. Weinberger replied: **Just do it. Do something.** If it's wrong, we'll fix it, but doing nothing is not the answer.

Panel V: Encouraging Companies to Build it Here and Export it There

Driving investment into a state, city or region requires a perfect storm of collaboration between industry, government, academia and the workforce. For the U.S. economy to grow, regional economies must grow and create an environment that encourages investment, enhances workers skills and builds upon homegrown strengths is essential to making this happen. Key stakeholders in this process will offer their perspectives on the opportunities and challenges.

PARTICIPANTS

Provocateur

Ms. Stephanie Kirchgaessner
Washington Correspondent, Financial Times

Mr. Daniel R. DiMicco
Executive Chairman, Nucor Corporation

Dr. Thomas E. Mason
Director, Oak Ridge National Laboratory

The Honorable Scott Smith
Mayor, City of Mesa, Arizona, and President,
U.S. Conference of Mayors

Dr. Harris Pastides
President, University of South Carolina

Provocateur Stephanie Kirchgaessner of the Financial Times opened up the panel by asking what the major hurdles each panelist faces when working on local and regional economic development.

Dr. Harris Pastides of the University of South Carolina responded: **We make a nearly \$5 billion impact on the state of South Carolina [and] we get about 2 percent in terms of state appropriation, and so the big challenge of course is many great ideas want[ing] to be part of the collaboration, [but] not enough money to do it all.**

Mr. Scott Smith of Mesa, AZ and the U.S. Conference of Mayors shared the following:

As a region you need to decide what you are good and what you want to be better at...it's difficult to attract targeted investment because the region isn't targeted. It's interesting that when you can decide



Dr. Harris Pastides, President, University of South Carolina.



The Honorable Scott Smith, Mayor, City of Mesa, Arizona, and President, U.S. Conference of Mayors.

what you are and where you want to go, money will show up, resources will show up because there isn't as much of a misallocation.

Our greatest impediment in the region is understanding who we are and where an investment would be best served.

Different communities may have these different priorities and the idea is to somehow align those priorities so you're all going in the same direction. That's tough to do in a region.

Dr. Thomas Mason of Oak Ridge National Laboratory elaborated on Scott Smith's discussion of priorities and assets: The second piece after understanding what your assets are is to project that onto the global landscape...you really need to assess what needs to be done in that broader global construct.

Mr. Dan DiMicco of Nucor shared his insights and perspectives: The thing that's missing today...is that states are fighting for a shrinking piece of a pie – what they don't understand as completely as they need to is that we are in a global economy and the competition is...the U.S. vs. the BRICs or whatever else. And until the states take that competitive fire that they have generated and done a very good job

with...until they understand that they can't do this by themselves. No state can compete with another country—it has to be a team effort.

Dr. Mason elaborated on Mr. DiMicco's comments: We're playing to a playbook that was written for a different world. A lot of our competitors—they have a different playbook. And as I travel around the world and look at how research institutions are working with industry and working with universities and so on. I see things that wouldn't work in our system; in some cases they even offend our sensibilities in terms of what we would view as conflicts of interest and hand outs and so forth. But that's what people are doing. So how are we going to respond? What is it that we can do that fits in terms of our understanding of government role, private sector roles and still get the job done in terms of creating opportunity?

Mr. DiMicco stated the challenge clearly when queried on what they federal government needs to do to address our nation's competitiveness: The fact of the matter is good are coming here and not going there. And that's where the federal government has to come in and deal with these agreements between countries that allow for the free flow of



Mr. Daniel R. DiMicco, Executive Chairman, Nucor Corporation.



Dr. Thomas E. Mason, Director, Oak Ridge National Laboratory.

goods both ways and not massive protectionism... that a company cannot deal with it on its own. This is an economic war and we just don't get it. Times have changed. We still see ourselves as it, but no, that's not the way the world is. Our competition is global and they're good.

Dr. Pastides shared his view as a university president on innovation at the local level and the role of the federal government: Most of the great things happening and where universities can contribute to make and manufacturing happens at the local level, not with federal government involvement.

Mr. Smith countered: You still need the federal government to get over some of the major barriers but the real work and you see mayors talking to mayors and regional economic councils talking to other regional economic group. And that's where deals are being done—at the local level or at the metro level... I think we're still not strategically aligned and that comes from the federal government down. Mayors and local economies understand it only because we have our business leaders come, we have our university leaders come to us and tell us here's reality—here's what happening on the ground.

Given these concepts and the conversation in motion, the panel pivoted to what needs to be done next or what the process is to move forward.

Dr. Mason stated: Part of the change is recognition of the opportunity. One of the great things about the competitive landscape we have is that some people will figure it out and they'll thrive and prosper. Others will take longer and then they'll notice that they are being left behind and probably go and figure out how then can emulate it.

Mr. DiMicco summarized: What's important in any solution to a problem is to make sure you understand what the problem really is otherwise you have no chance of solving it...at the end of the day, the market tells the universities and the schools what to train for. What we need are universities to be geared towards listening to that and changing as the marketplace changes.

Panel VI: Deriving Value from Our Investments in People and Ideas

The United States invests billions of dollars in research and education. Yet the value accrued from these investments, in the form of new companies, products, services, and jobs, is largely dependent upon whether the regulatory, financial and physical infrastructure is in place to empower creative people to reach their full potential and to bring ideas out of the lab and to market. Manufacturing is a critical part of this puzzle as is the linkage between the skills and training workers receive and the opportunities the marketplace provides. Representing industry, academia and labor, this panel will discuss the potential for a continued manufacturing renaissance and strategies to maximize the potential of the American workforce.

PARTICIPANTS

Provocateur

Mr. Scott Horsley
White House Reporter, National Public Radio

Mr. James P. Hackett
Chief Executive Officer, Steelcase, Inc.

Dr. G.P. Bud Peterson
President, Georgia Institute of Technology

Ms. Randi Weingarten
President, American Federation of Teachers, AFL-CIO

Mr. Jeffrey J. Wilcox
Corporate Vice President for Engineering, Lockheed Martin Corporation

Provocateur Scott Horsley of NPR started this panel by asking what are the opportunities and challenges around growing manufacturing in this country?

Mr. James Hackett of Steelcase began: **Three things are going to exist [in reference to the manufacturing future]: big data...the notion of computing independent of what data does...and the notion of sharing. To actually compete we're going to have to share some things that we used to say we can't have amongst companies but I actually think that it will bring the country back to a level of competitiveness.**

Dr. Bud Peterson of Georgia Tech elaborated: **There's been kind of a reawakening that only a certain percentage of the U.S. economy can be based on a service industry. Somebody has to make something in order for the country to be profitable.**



Mr. Scott Horsley, White House Reporter, National Public Radio; Mr. James P. Hackett, Chief Executive Officer, Steelcase, Inc.; Dr. G.P. Bud Peterson, President, Georgia Institute of Technology; Mr. Jeffrey J. Wilcox, Corporate Vice President for Engineering, Lockheed Martin Corporation; and Ms. Randi Weingarten, President, American Federation of Teachers, AFL-CIO.

Mr. Jeff Wilcox of Lockheed Martin offered: Public private partnerships have always been the way we create value in this country on a large scale. It's the public part that can take the big risks.

Mr. Wilcox continued on: The reintegration of science with engineering is very exciting to me. You have to go back to the Wright brothers I think when you're looking at different types of materials and different types of propulsion and learning and failing and questioning and trying again. To see the power of integrated science and engineering I think that's exciting.

Ms. Randi Weingarten of the American Federation of Teachers shared: We would love to see a manufacturing renaissance in this country. If you have

a manufacturing renaissance then what ends up happening is you have a country once again built on and by the American dream because of that which would happen then in terms of communities around the country.

Ms. Weingarten dove into more details of the transition she is seeing unfold: I am seeing a renaissance in the notion of not the old voc ed [vocational education] but as you emerge to career tech ed [career technical education]. I don't think that it was an accident that the president of the United States—I think one of the first actually public high schools that he spoke at was P Tech this past Friday, which is a school that is a collaboration of IBM, CUNY, NYC's college, the NYC Board of Education, and



Mr. James P. Hackett, Chief Executive Officer, Steelcase, Inc.



Dr. G.P. Bud Peterson, President, Georgia Institute of Technology.

the AFT. It is an entity where we back map over the course of six years what kids need to know and be able to do to be an IBM tech person.

So you are aligning the education in high school to that which is needed in the manufacturing sector.

You think about the three or four things that in this fast moving economy we have...what are the skill sets that kids need to have. 1. Enough knowledge and skills so that they can become critical thinkers and problem solvers. 2. Engagement...On of the things about career and technical education is that it gives people a sense of if I go through this program I could actually get a good job off of it. I could actually go into the marketplace and get a middle class job. 3. Grit & persistence, perseverance, resilience...If a student fails a test they may not have a support system and you can see very easily that without those support systems what happens.

Dr. Peterson discussed his perspective on the engagement of students around manufacturing: Awareness...part of the awareness is the opportunities that exist in advanced manufacturing. We need to make young middle school kids aware of these opportunities. The old model of manufacturing was the three D's: dumb, dirty and dying, and maybe we're starting to convince young people in middle school that it's the three E's exciting, enriching and entrepreneurial.

Mr. Hackett built on the comments of the previous panelists to discuss what catches people in the realm of making goods: The maker spirit is that teams have to come out of here [not] with just a power point—they have to build a prototype. The prototype does not have to be precious, it does not have to prove that it can be made, it just has to confirm the notion of the idea.

Mr. Wilcox shared that how he got into engineering was to take stuff apart, and how things have changed and yet come full circle: The ability to actually take stuff apart—my kids don't have that ability like I had. I don't want them taking apart my LCD TV—it's not going to be good for any of us...now all of a sudden there this—just walk into any Radio Shack and...against the back wall is all the stuff you can make.

Dr. Peterson elaborated on an exciting movement at Georgia Tech and even had a student at the NCF sharing what she's done via the Makers Club: We've got a Makers Club at Georgia Tech and it's the fastest growing club/student organization on campus. The students have really put it together. They asked for some resources for machining and rapid prototyping equipment. Now they've opened it up to high school and middle school kids where the students—



Ms. Randi Weingarten, President, American Federation of Teachers, AFL-CIO.



Mr. Jeffrey J. Wilcox, Corporate Vice President for Engineering, Lockheed Martin Corporation.

the college students at Georgia Tech are actually working with middle school and high school kids to actually build things.

With the conversation clearly focused on attracting students into manufacturing or the STEM fields, Mr. Wilcox hit on a key necessity:

The public perception of any field is critical to deciding who goes into it...but more importantly they come with their own time and they show these kids what an engineer looks like. And it's even better when the engineer looks like them because if you're a woman or minority and have a female or minority in the field your like wow I could do that. And it's just amazing the power of 'I could be that'. We really need more of that.

Mr. Hackett discussed how to translate the maker movement back to the manufacturing floor by connecting the worker as such: **The worker in the future knows the car is coming to you...there's almost infinite opportunity for the data to tell the worker about what they're doing.** And it kind of returns us back to a craft kind of era when people were handling things knowing that they were making this for somebody. There's a lot of satisfaction in that maker culture if we link the customer back to the floor again.

The conversation transitioned back to business concerns or needs via a comment by Dr. Peterson: **Two trillion dollars worth of goods were exported last year and 70 percent of those were manufactured goods in the US. Two thirds of the scientists and engineers of the country are working in manufacturing. Now how do we increase that? Certain having a prepared workforce is the first step.**

As the panel wrapped up, Mr. Wilcox shared some optimism: **I do see through the good work of the Council and other organizations just in the last 3-4 years a real groundswell of the articulation of the problem. We've done a good job of explicating the situation which is always step one—it's never enough but it's always step one. So I'm optimistic. You know I see a lot of leaders speaking about the subject and the need. I see a lot of movement at the community level.**

Randi Weingarten wrapped up the panel with the challenge we still face: **I've found at least in education in the last 25 years or so the single thing we've failed at the most is that we don't know how to scale and we don't know how to sustain good things. How do we put things together to create the alchemy that you then see this incredible combustion at a local level and come up with these incredible ideas that then become the next inventor, the next president, the next everything?**

Looking Ahead

The American Energy & Manufacturing Competitiveness Partnership Summit & the 10 Year Anniversary of the National Innovation Initiative

PARTICIPANTS

Mr. Samuel R. Allen
Chairman, Council on Competitiveness,
and Chairman and Chief Executive Officer,
Deere & Company

The Honorable Deborah L. Wince-Smith
President & CEO, Council on Competitiveness

The Honorable David T. Danielson
Assistant Secretary for Energy Efficiency and
Renewable Energy, U.S. Department of Energy

As the day of thought-provoking conversations, panels and presentations came to a close, Council Chairman Mr. Samuel R. Allen and Council President & CEO Ms. Deborah L. Wince Smith were joined by Assistant Secretary for Energy Efficiency and Renewable Energy, U.S. Department of Energy, the Honorable David T. Danielson to discuss future events and focus of the Council on Competitiveness.

On December 12, 2013, as part of the American Energy and Manufacturing Competitiveness (AEMC) Partnership, the Council on Competitiveness (Council) and the Department of Energy Office of Energy Efficiency and Renewable Energy (EERE) co-hosted the Inaugural AEMC Summit, a first-of-its-kind annual gathering of preeminent leaders from industry, government, academia, labor, and the national laboratories dedicated to building momentum around American innovation, progress and competitiveness in energy and manufacturing.

In addition, 2014 marks the 10-year anniversary of the Council's National Innovation Initiative, which culminated in a summit and report on goals and recommendations to keep America as a leading center of innovation for the world. As 2014 unfolds, the Council will look back to its report and focus on today, assessing what still needs to be done to keep America as the innovation hub of the globe in concert with its continued assessment, The Clarion Call for Competitiveness, guiding policy makers at the state, local, regional and federal level on how to keep Americans prosperous and America compet



The Honorable Deborah L. Wince-Smith, President & CEO, Council on Competitiveness; and The Honorable David T. Danielson, Assistant Secretary for Energy Efficiency and Renewable Energy, U.S. Department of Energy.

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About the Council

WHO WE ARE

The Council's mission is to set an action agenda to drive U.S. competitiveness, productivity and leadership in world markets to raise the standard of living of all Americans.

The Council on Competitiveness is the only group of corporate CEOs, university presidents and labor leaders committed to ensuring the future prosperity of all Americans and enhanced U.S. competitiveness in the global economy through the creation of high-value economic activity in the United States.

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HOW WE OPERATE

The key to U.S. prosperity in a global economy is to develop the most innovative workforce, educational system and businesses that will maintain the United States' position as the global economic leader.

The Council achieves its mission by:

- Identifying and understanding emerging challenges to competitiveness
- Generating new policy ideas and concepts to shape the competitiveness debate
- Forging public and private partnerships to drive consensus
- Galvanizing stakeholders to translate policy into action and change

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