2nd US–BRAZIL INNOVATION SUMMIT

2ª BRASIL–EUA CONFERÊNCIA de INOVAÇÃO

September 20-21, 2010

PARTNERSHIP FOR PROSPERITY IN THE 21ST CENTURY

ABDI
Brazilian Agency for Industrial Development

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2nd US-Brazil Innovation Summit – Partnership for Prosperity in the 21st Century

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A Call to Work

Building innovative and competitive economies

BY **REGINALDO BRAGA ARCURI,**
President, Brazilian Agency for Industrial Development (ABDI)

The 2nd US-Brazil Innovation Summit, rooted in the idea of using partnerships to elevate prosperity in the 21st Century, is yet another relevant step in the process of strategic collaboration between Brazil and the United States.

The Brazilian Agency for Industrial Development (ABDI), the Brazilian Competitiveness Movement (MBC) and the U.S. Council on Competitiveness (CoC) are working together to enable the two countries to build effective platforms to promote growth, focusing on innovation and competitiveness.

Results reflect the huge transformation of Brazil in recent years. Today's Brazil is a different country – more complex, diversified – and better. Recent patterns of economic growth at steady rates made it possible to overcome the global financial crisis triggered in September 2008 with fiscal and social costs significantly below the international average.

Gains made possible by the country's economic growth are even more remarkable given that broad layers of the population have benefited greatly during this course of development. Poverty indexes have shrunk significantly while a vigorous upward movement of new segments of the population into the middle class has been recorded.

This virtuous cycle of economic and social advances has enabled Brazil to transform its society, providing it with better prepared citizens and increasingly more sophisticated consumers. This was a key phenomenon for Brazilian industrial development, recognized as needing a more robust private sector and government capable of efficaciously coordinating the growing demands and needs of its inhabitants.

In this context, the challenges arising in the construction of partnerships between Brazil and the United States to promote innovation in this new century, already a decade old, assume an unprecedented level of complexity.

Brazilians, in particular, need three essential conditions for innovation to become an increasingly key element in the productive structure of the economy - the first of these three being the human factor: people with innovation in their very DNA; people with talent and preparation.

To confront this challenge, Brazil has increased its efforts to produce highly qualified academics and professionals in sufficient numbers to meet market demand.

The second condition, infrastructure, must be based on a legal framework designed for development and innovation.

It is vital to base such initiatives on a communications structure able to bear what innovative companies require, as well as adequate funding for research and industrial production.

Third, but no less importantly, is to to set policies and practices that promote innovation in industry and companies, which is exactly where such processes materialize and take on concrete formats.

In this sense, the Brazilian government is to be commended, providing resources to the private sector by means of financing by the National Bank for Economic and Social Development (BNDES), the Funding Body for Studies and Projects (Finep) or through the provision of venture fund capital.

The present is clearly favorable for Brazil's rapid economic advance and to place itself in a privileged position to attain a new level of development, marked by innovation and inventiveness.

The country is now recognized as an excellent field for investment, which is critical to sustain a new economic cycle anchored in innovative practices.

In the ranking prepared by UNCTAD, Brazil is the world's third destination for Foreign Direct Investment, according to recently furnished data.

The robustness of the Brazilian economy is also evident through the global reach of modern Brazilian companies.

The international economic map is now dotted with the presence of Brazilian organizations, which have taken on the character of genuine global players. A good example is Embraer, the world's third-largest producer of commercial aircraft, with nearly one thousand units in operation in the United States alone.

Examples of Brazil's accumen, which draw parallels to the course of U.S. pioneers throughout history, can be found in another field: agriculture.

It was in this field that Brazilians showed themselves capable of generating what can be considered the world's second green revolution. Thanks to a genuinely public enterprise – Embrapa – and the competence of its farmers, Brazil attained a structural transformation of its agricultural system.

Possibilities unveiled in the future to intensify collaboration between Brazil and the United States are but brushstrokes in this exercise of reflection, but nevertheless extremely rich. However, they do require discipline and tenacity – and this must be stressed.

It is exactly for the sake of this future that MBC, CoC and ABDI are working together to improve and expand the economic integration of Brazil and the United States.

The 2nd US-Brazil Innovation Summit attained tangible results. In this publication we look into the deployment of an initiative that will enable us to aim at new options for the two nations, based on principles of freedom and democracy.

The joint efforts are designed to catalyze new businesses. What our three organizations seek are joint joint efforts to build more innovative and competitive economies, in harmony with a better, more sustainable and fairer world.

In Arcuri's vision, the historical time is right for Brazil to overcome obstacles to attaining a new level of development.

Strategic commitment to promote partnerships

BY **DEBORAH L. WINCE-SMITH**
President and CEO, Council on Competitiveness (CoC)

Globalization, trade liberalization and information technology diffusion have opened up growth and investment opportunities around the world - raising the bar for performance; and creating pressures on nations, regions, industries, companies and workers to meet the new standards of global competitiveness.

As the work of the Council on Competitiveness over the past two decades has demonstrated, the United States cannot compete on low wages, commodity products, standard services, and routine science and technology development.

With growing competition from Asia and elsewhere, the United States and Brazil - the two largest economies, and two of the most populous countries in the

Western Hemisphere - have strong incentive to work together to drive innovation-based competitiveness in the 21st century.

To launch a strategic commitment to competitiveness policy and action, the Council on Competitiveness, Movimento Brasil Competitivo and the Agência Brasileira de Desenvolvimento Industrial have co-hosted over the past 5 years a series of path-breaking workshops, exchanges and summits in both nations.

Competition from other regions such as Asia, represents an incentive for the partnership between Brazil and the United States, noted Deborah L. Wince-Smith

The September 20-21, 2010 2nd US-Brazil Innovation Summit at Georgetown University in Washington, DC – the latest deep collaboration – brought together 400 C-Suite executives, university presidents and senior government officials from both nations to address five global, grand challenges:

- **How will the United States and Brazil meet global demand for energy, which will increase by nearly 50 percent in 20 years, while balancing the need for sustainable growth and use of other critical resources, like water?**
- **How can two of the world's leading agricultural producers feed the world – which faces a need to double global food production in 50 years – and continue to innovate at the frontier of the biosciences?**
- **How do leaders in both nations foster creativity and innovation in a world in which, by 2050, more than two-thirds of the population will live in cities?**
- **What are the critical tools and infrastructures needed for 21st century innovation – from transportation and logistics networks to broadband and the "cloud" – and how do we best equip ourselves?**
- **What does manufacturing look like in the 21st century – and how can the United States and Brazil lead in the development and deployment of a platform for the most innovative mix of manufacturing and services that will create the value for society: the new firms, industries and jobs that will define prosperity in the decades to come?**

Led by Samuel R. Allen, Chairman and CEO of Deere & Company, and Chairman of the Council, John J. DeGioia, President, Georgetown University, Deborah L. Wince-Smith, President and CEO, Council on Competitiveness, Reginaldo Arcuri, President, Brazilian Agency for Industrial Development and Erik Camarano, President, Brazilian Competitiveness Movement, the 2nd U.S. – Brazil Innovation Summit builds on a strong history of innovation-based engagements across both nations – kicked-off in Brasília in July 2007 with the 1st US-Brazil Innovation Summit.

Following the success of the 2007 Summit—which produced a Call to Action endorsed by President George W. Bush and President Luiz Inacio Lula da Silva—the Council, ABDI and MBC have been coalescing leadership around a series of tangible, bi-national partnerships to deepen mutually beneficial relationships based upon a fundamental belief: that optimizing our societies for innovation is the key to future prosperity.

Our joint "innovation" to make such partnerships more concrete is the "US-Brazil Innovation Learning Laboratory." The Innovation Learning Laboratory is a "catalyst"—a series of progressive dialogues to spark participants in creating new-to-the-world partnerships to boost innovation capacity and value creation. Between 2008 and 2009, the Council, MBC and ABDI hosted 10 Laboratories across both nations, focusing on issues related to fundamental research, intellectual property, technology transfer, entrepreneurship, commercialization, and the overarching workforce and economic development environment in both nations.

Flowing out of these US-Brazil Innovation Learning Laboratories are a series of bi-national partnerships, highlighted at the 2nd US-Brazil Innovation Summit, to address real needs and opportunities in both nations:

- **The Bi-National SmartGrid Collaboration Initiative: an industry-university-public sector partnership across both nations to conduct joint research and training in the smart grid space, as well as development of joint smart grid demonstration projects in the United States and Brazil; and,**

- **The US-Brazil Co-Incubation Initiative: an effort to create incubation hubs—creating a launching pad for U.S. firms looking to do business in Brazil and for Brazilian firms looking to do business in the United States.**

The Council on Competitiveness looks forward to launching in 2011 and 2012 additional projects with MBC and ABDI – in a new round of Innovation Learning Laboratories – that leaders have brainstormed and outlined in a "Call to Action" from the 2nd U.S. – Brazil Innovation Summit.

Shared Vision of the Future

BY **JORGE GERDAU JOHANNPETER**
Chairman of the Board of Directors - Grupo Gerdau, and Founder and Emeritus Chairman of the Board of Brazilian Competitiveness Movement (MBC)

Five years ago, the Brazilian Agency for Industrial Development (ABDI), the Council on Competitiveness (CoC) and the Brazilian Competitiveness Movement (MBC) shared a vision of the future: it would be possible for the two largest economies in the Americas, Brazil and the United States, to commence a "journey of innovation" so as to improve competitiveness by means of cooperation with one another.

At the time we did not know that this simple shared idea would become such an important framework on the march to prosperity for the two countries, or that it would foster such vigorous cooperation.

Brazil and the United States have huge potential for cooperation and innovation. U.S. leadership in a number of important fields of knowledge, technical specialization and entrepreneurship is an inspiration to us all. Just as we are enthused by the capability exhibited by Brazil for speedy recovery from the global economic crisis that tested the resilience of the world economy in 2009.

This capability can be attributed to the positive combination of our entrepreneurship with a consistent set of temporary tax breaks put in place by the Brazilian government.

Gerdau pointed out challenges yet to be faced by Brazilians, emphasizing the "agenda for efficiency".

However, in spite of advances observed over recent years and the scenario of optimism unreeling before us, in order for Brazil to definitively consolidate its position as a global player, certain challenges must still be overcome.

First, there is a need for Brazil to increase our savings and investment rates. No country in the world can seek a trajectory of consistent growth without significant domestic savings, which in appropriate conditions means more investment.

China – the world's fastest-growing economy – has been able to increase its savings rate from 40 percent of GDP to 52 percent over the last ten years. Brazil, however, exhibits a 17 percent savings rate, which is even less than other Latin American countries, such as Argentina, Mexico, Chile and Colombia.

Our target should be a 25 percent savings and investment rate in order to sustain 5 percent real consistent GDP growth in the long term.

For this to happen, we must increase public sector savings and investment from the current figure of 1.2 percent of GDP and tackle pension system reform to confront the US$ 35 billion annual deficit. This imbalance has affected our current account, which shows a US$ 37 billion deficit in 2010.

Second, we must take on the "agenda of efficiency", which translates into measures directly impacting productivity in the private sector and thus competitiveness. This agenda includes: tax reform to simplify and reduce our tax burden; reduction of interest rates, which can only be consistently achieved by a reduction of budgetary deficit; and more flexible regulation of the labor market.

The agenda also calls for reduced red tape throughout the public sector and sturdy investment in infrastructure, especially transportation, so as to reduce our logistics and freight costs from the current 15 to 16 percent of GDP to 8 to 9 percent over coming years.

Finally, we need to invest in basic education in Brazil. We have done a good job in recent years in terms of placing all children in schools at the appropriate age. However, our students' performance is not up to international standards and our worst assessments are those for early childhood and basic learning.

We have very good universities with high research levels, but we do not have the same competence in adequate education for our children. And this investment will bring the country the highest possible return, not only improving our growth rate but also, even more importantly, providing better opportunities for all.

In order to take on these challenges, in 2005 the corporate members of began to support a "Public Administration Improvement Program" designed to provide all levels of the Brazilian public sector with management tools from the private sector.

Over the last five years we have been able to generate combined savings of US$ 7.6 billion, with US$ 40 million in private investment, with no direct return for the companies involved. We also see modernization efforts in the Legal System, with huge potential results.

However, this is but a part of the actual transformation taking place in Brazil. We trust that joint cooperation with industry, academia and the public sector – as expressed in the 2nd US-Brazil Innovation Summit – will foster innovation and competitiveness in both countries, blazing a path that will lead to greater prosperity for all our citizens.

"We need to invest in basic education in Brazil. We have done a good job in recent years in terms of placing all children in schools at the appropriate age. However, our students' performance is not up to international standards and our worst assessments are those for early childhood and basic learning"

US-BRAZIL INNOVATION INITIATIVE

The 2007 1st US-Brazil Innovation Summit, marked the beginning of a new model for engagement between entities of Brazil and the United States. Since the 1st Summit the objective remains that of utilizing bilateral partnership to advance the innovation-based competitiveness levels of both the United States and Brazil.

Brazil and the United States launch a joint initiative for innovation in 2007

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Since the 1st US-Brazil Innovation Summit in Brasilia in July 2007, the US-Brazil initiative has accelerated economic ties between the two nations.

The Summit was the most significant step following the signing of a memorandum of understanding by MBC and CoC in 2005 as a response to the need to address the new realities of the 21st century competitive environment.

The agreement paved the way for the public and private sectors of the two largest economies in the Western Hemisphere to engage. What followed were a series of strategic dialogues that concentrated on the role of innovation in elevating economic trade and the level of prosperity in both nations.

The 1st US-Brazil Innovation Summit convened over 500 participants from industry, government, academia and science of both countries. The Summit produced a "Call to Action" - endorsed by Presidents Bush and Lula - that served as a workplan for future bilateral activities and invited further examination of the innovative framework of talent, technology investment and infrastructure in the context of the US-Brazil economic relationship.

In addition to calling upon governments and partners in the Americas to direct their efforts toward these priorities, the organizations proposed creating a task force to identify regulatory, legal and tariff barriers to investment and to cooperate with cutting edge research.

Summit participants also called for continued mapping of the innovation ecosystems of each nation, preparation of an index to measure innovation and competitiveness in the Americas region and expanded fora for dialogues between CEOs of Brazil and the United States.

To launch a concerted dialogue on these issues, and to create to tangible partnerships between entities of Brazil and the United States, ABDI, MBC and CoC created the Innovation Learning Laboratory series.

The 11 Laboratories to date have sought to strengthen a bilateral partnership for innovation and to set up a dialog platform able to promote a development model centered on competitiveness, sustainability, entrepreneurship, and public-private partnerships.

The core issues of the Learning Laboratories include fundamental research, intellectual property, technology transfer, entrepreneurship, commercialization, and the overarching workforce and economic development environment in both nations.

The first two Laboratories, in Brasilia and Washington in July and August of 2008 began a dialogue around talent, infrastructure and investment in the energy space.

The eight Learning Laboratories that followed between April 2009 and January 2010 were geographically divided equally between Brazil and the United States. During these sessions, participants engaged on deeper and more specific innovation issues - R&D and sustainability in the areas of renewable energy, energy efficiency and, co-incubation.

The results of these laboratories proved that new models of bi-national partnership are possible and can lead to tangible results. Among these results are a Bi-National SmartGrid Collaboration initiative and Co-Incubation Initiative that creates incubation hubs for U.S. firms seeking market entry into Brazil and Brazilian firms attempting to access the United States.

The Innovation Learning Laboratory series revealed the potential for the Brazil-U.S. partnership to be effectively expanded from an energy dialogue to a number of new platforms. To initiate this broadened conversation, a 2nd US-Brazil Innovation Summit was organized at Georgetown University in Washington, DC in September, 2010.

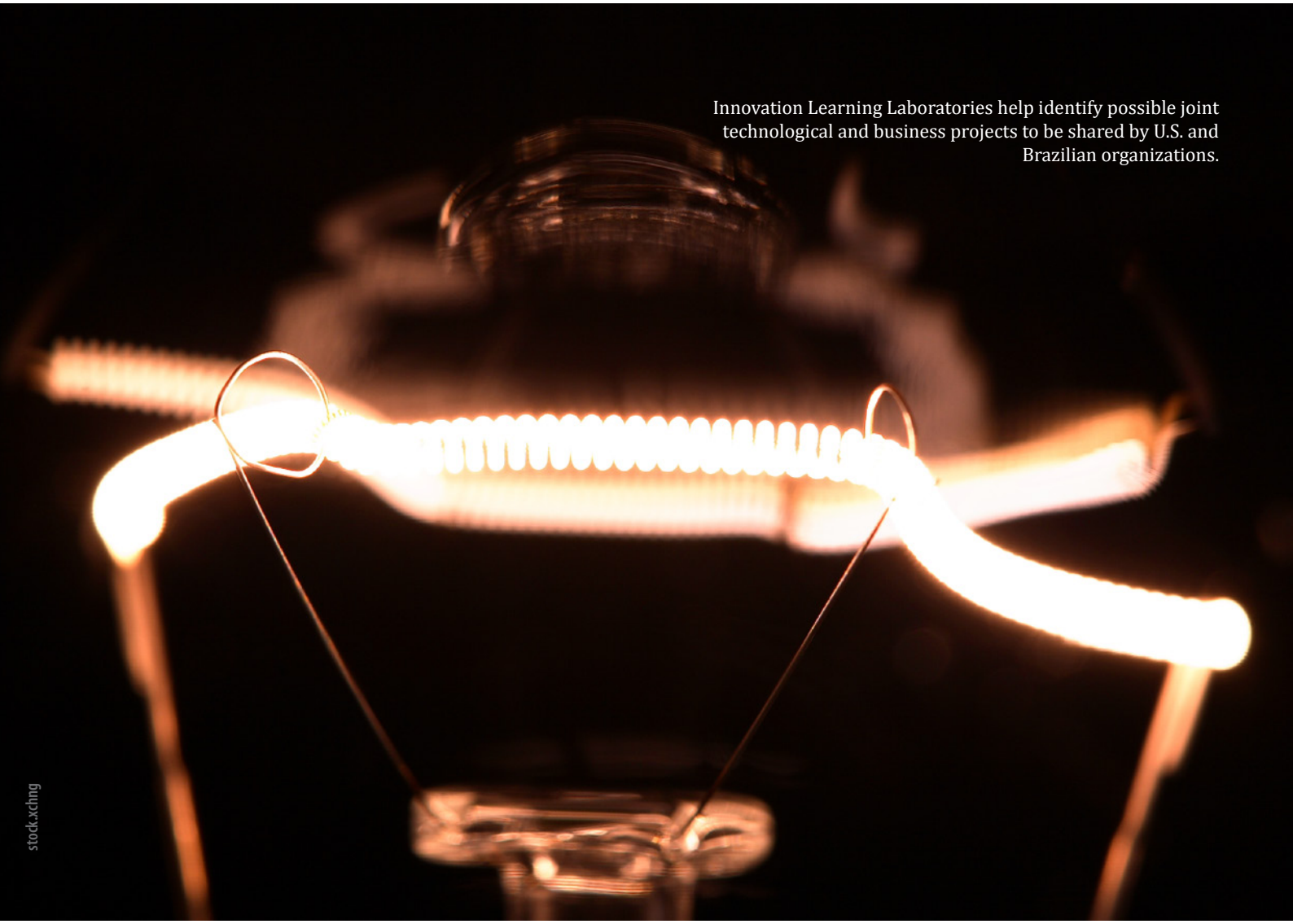
During the second Summit over 400 participants from both nations convened under an enlarged agenda that focused upon partnerships between Brazil and the United States to address five global

Alessandro Teixeira (President, ABDI from 2005 to 2007), Reginaldo Braga Arcuri (President, ABDI from 2008 to 2011), Deborah L. Wince-Smith, President and CEO, Council on Competitiveness and MBC's founder and Chairman Jorge Gerdau discuss a shared commitment to Innovation

"grand challenges" that will greatly effect each nation and the world in the 21st century:

- How will the United States and Brazil innovate together to meet the growing global demand for energy that will spike by nearly 50 percent over the coming two decades— while sustaining other critical resources, like water?
- How will the United States and Brazil, the world's two largest agricultural producers, feed the world when the demand for food doubles in 50 years—while also supporting advances in biosciences and next-generation biofuels?
- How will the United States and Brazil build the smartest, most resilient and most sustainable infrastructures—from transportation and logistics networks to broadband and the "cloud"—to support 21st century, innovation-based economies?
- How will leaders in the United States and Brazil cultivate creativity, innovation and entrepreneurship in a world where—for the first time in history—more people live in dense, complex, urban environments?
- How will the United States and Brazil create a platform for the most innovative mix of manufacturing and services that will create the new firms, industries and jobs of the 21st century?

At the conclusion of the 2nd US-Brazil Innovation Summit, ABDI, MBC and CoC sealed their commitment to move the conclusions of the Summit to a new series of Learning Laboratories.



Innovation Learning Laboratories help identify possible joint technological and business projects to be shared by U.S. and Brazilian organizations.

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DOES INNOVATION
PRODUCE HAPPINESS?

"Does innovation produce happiness?" was the question asked at the 1st US-Brazil Innovation Summit.

Innovation Learning Laboratories, US-Brazil 2008-09: From ideas to global markets

July 21-23, 2008 – First Innovation Learning Laboratory in Brasília, Brazil. Dialogue focused on, matters related to talent, infrastructure, investment and renewable energy.

August 21, 2008 – Second Innovation Learning Laboratory at Georgetown University, Washington, DC. In addition to calling on governments in the Americas prioritize the creation of policies that foster innovation, the organizers proposed creating a task force to identify regulatory, legal and tariff barriers to investment and collaboration in areas of cutting edge research.

April 22-23, 2009 – Third Innovation Learning Laboratory in Porto Alegre, Brazil, supported by the Rio Grande do Sul State Federation of Industries/Instituto Euvaldo Lodi (FIERGS/IEL) with a focus on R&D.

May 12-13, 2009 – Fourth Innovation Learning Laboratory at the University Club of Chicago, hosted by the University of Illinois of Urbana-Champaign. concentrating on investment in energy research, grids for bioenergy, technologies for carbon sequestration and smart grids.

June 1, 2009 – Fifth Innovation Learning Laboratory at Research Triangle Park, Raleigh, NC. Primary subjects were related to commercializing innovation in Brazil and the United States. Possibilities for projects for co-incubation of companies and experiences regarding funding for innovation in the two countries were also on the agenda.

July 13-15, 2009 – Sixth Innovation Learning Laboratory at Fundação Getúlio Vargas (FGV) in São Paulo, Brazil. Meeting subjects included the role of technology transfer and entrepreneurship in innovative economies, with particular emphasis on the importance of the creation of policies to support research and entrepreneurship. Renewable energy, energy efficiency, IT and communications were also discussed.

August 5-7, 2009 – Seventh Innovation Learning Laboratory hosted by Wilson Sonsini Goodrich & Rosati and Applied Materials, in Silicon Valley. The transfer of ideas from laboratories to the market was examined in through a conversation on the role of "business engineers" in technology transfers and entrepreneurship, and that of overcoming the "Valley of Death" in Brazil and the United States.

August 19-21, 2009 – Eighth Innovation Learning Laboratory held hosted by the the Funding Body for Studies and Projects (Finep), in Rio de Janeiro, Brazil. Focused upon were the leverage of innovation capability to attain competitiveness and prosperity. Matters related to the legal and regulatory climate were debated, as well as intellectual property for innovation and competitiveness, employment of the labor force and economic development.

September 9-11, 2009 – Ninth Innovation Learning Laboratory at National Renewable Energy Laboratory (NREL), in Golden, Colorado, unveiled a wider discussion on leveraging innovation capability in order to attain competitiveness and prosperity, through the lens of regional economic development, employment, and work force training.

November 19-21, 2009 - Tenth Innovation Learning Laboratory at Fundação Dom Cabral in the Brazilian city of Nova Lima, metropolitan region of Belo Horizonte. Joint Brazil-U.S. technological projects, competitiveness and entrepreneurship, and the progress of initiatives resulting from agreements arrived at during the six prior Laboratories, especially the Project for Demonstrations on Smart Grids coordinated by Companhia Energética de Minas Gerais (Cemig – Minas Gerais State Energy Company).

Collaboration in Smart Grid

Participating organizations – Brazil: Cemig, Eletrobrás, UFRGS, LSI Tec, USP, Altus, Choice Technologies, Elo Sistemas Eletrônicos, Concert Technologies, universities, engineering companies and producers of hardware and software solutions for energy generation, transmission and distribution systems.

Participating organizations – USA: University of Illinois at Urbana-Champaign, Battele, IBM, energy companies and manufacturers of hardware and software, engineering companies and producers of hardware and software for energy generation, transmission and distribution systems.

Emerging from dialogue during the May 12th Learning Laboratory in Chicago, CEMIG, the utility company from Minas Gerais state in Brazil, presented a proposal for the development and implementation of a smart grid demonstration project in two sister cities, one in Brazil and the other in the U.S.

The project, now in the implementation phase, consists of the development of a shared smart grid demonstration system in the two cities, enabling better research and development of all areas of the smart grid system - technology for automation and control, telecommunications, power systems and management of demand, etc. The project will be led by a consortium consisting of CEMIG and partner Brazilian energy companies, U.S. energy companies and Brazilian and U.S. suppliers of smart grid hardware and software.

The project calls for extensive use of renewable sources of energy and distributed generation of energy, as well as applying solutions for "intelligent" operation and management of the system. Collaboration between entities of both nations leverages the respective strengths of Brazilian advancements in the interconnected operation of the electric system and American technological advancements and current investments in smart grids.

Collaboration in Co-Incubation of Companies

Main organizations involved – Brazil: Anprotec, Pontifical Catholic University of Rio Grande do Sul (PUC-RS), universities and interested companies.

Main organizations involved – USA: Arizona State University (ASU), incubators and interested companies.

The Co-Incubation Initiative accelerates the ability of enterprises from each country to be "incubated" in another, making use of the incubation infrastructure of existing companies in Brazil and the United States. The logic of "co-incubation" is to facilitate a company's entry to the market of the other country and access local resources such as talent, laboratories and funding.

"Co-incubation" will materialize through agreements between technological incubators in Brazil and the United States and the identification and selection of companies with the potential for growth in the other's market. The agreements make use of the research competencies, networks of investors, mentors, business community and services available in each country/incubator.

This initiative arose during the Innovation Learning Laboratory that occurred in São Paulo on July 15. This initiative is led by led by Arizona State University (ASU) and Pontifical Catholic University of Rio Grande do Sul (PUC-RS), which have already signed agreements establishing parameters for support for companies in each of the two countries.

Collaboration in Promoting Entrepreneurship in Clean Technologies

Main organizations involved – Brazil: Fiergs, Fiep.

Main organizations involved – USA: Clean Tech Open and Department of Energy.

This initiative implements in Brazil a platform to support entrepreneurs in the field of clean technology to create, develop and commercialize and to connecting them with potential U.S. partners. This platform has been proposed to operate within the existing framework of Cleantech Open, a California-based organization that organizes competitions for entrepreneurs in this area.

Brazil is the world leader in extensive use of energy from renewable sources, while the United States is the leader in promotion of high impact entrepreneurship, including the field of renewable energy and clean technology. This gives substantial credence to bilateral collaboration in this area and was the impetus for a proposal to begin a Brazilian version of the Cleantech Open that emerged from the Palo Alto Learning Laboratory in August of 2009.

The federations of industries of Rio Grande do Sul (Fiergs) and Paraná (Fiep) are presently discussing possible models for a Brazilian version of the competition and its viability with the management of Cleantech Open and Brazilian partners.

2ND US-BRAZIL INNOVATION SUMMIT

The 2nd US-Brazil Innovation Summit took place on September 21 and 22, 2010, at Georgetown University Campus, Washington, DC and served as an important milestone in the United States - Brazil bilateral initiative.

A SHARED STRATEGY FOR THE 21ST CENTURY

The 2nd US-Brazil Innovation Summit consisted of Mini-Innovation Learning Laboratories, panel discussions and presentations by senior representatives of the Brazilian and United States governments. Participants in the Summit addressed critical questions that will determine how the United States and Brazil engage in the 21st century. This includes policies and actions to redefine how the two nations undertake research, do business, create the jobs of tomorrow, and address - from a systems perspective - five inter-related "grand challenges" that will greatly affect each nation and the world in the 21st century.

The Summit began on September 20 with four simultaneous "Mini Learning Laboratories" and an Innovation, Law and Development Symposium. The Mini Learning Laboratory on Technology Transfer discussed the acceleration of innovation and practices and policies that most effectively take innovative ideas to the commercial market. Led by Julia Rosen, Assistant Vice President of Innovation and Entrepreneurship, Arizona State University, Claudio Stewart, Vice President for Technology Commercialization, Georgetown University and Rubén Dario Sinisterra, President Fortec, the session touched upon topics ranging from intellectual property rights, shared research programs, technology transfer between the two countries and overcoming the "valley of death" between innovation and commercialization.

At the Mini Learning Laboratory on Energy Efficiency and Intelligent Networks, industry business leaders and representatives of the two governments discussed challenges in Brazil and the U.S. in implementing intelligent energy networks - including smart grids. Led by Ray O. Johnson, Senior Vice President and Chief Technology Officer, Lockheed Martin Corporation and Marco Antonio Rodrigues da Cunha, Chief Corporate Management Officer, CEMIG, the group raised important issues such as the cost of implementing new systems, compatibilization with older networks, protection against hackers and changes in law required for public service concessionaires to be able to share infrastructure. In addition, a smart grid project was proposed by Cemig (Minas Gerais State Electric Company).

The Business/Technology: Investment Climate and Risks for Innovation Mini Learning Laboratory was led by Michael Nicklas, Founder and Managing Director, SocialSmart Ventures and Ronald Dauscha, CEO, International Innovation Center (C2i). Opportunities and challenges for entrepreneurs and investors in Brazil and the United States were stressed, as well as the need for changes in Brazilian labor and tax law and better international agreements to improve trade and labor flow.

At the Mini Learning Laboratory on the Diaspora Network, chaired by Ambassador André Amado, Sub Secretary General of Energy and High Technology Affairs, Ministry of Foreign Affairs U.S.based Brazilians working at universities, R&D centers and technology companies including those who are U.S. government employees, discussed ways to bring the community closer, promote collaboration and setting up a virtual network.

The Innovation, Law and Development Symposium examined advances in Brazilian and U.S. law with regard to innovation. Reginaldo Arcuri, President Brazilian Agency for Industrial Development and Ambassador Ira Shapiro, Partner, Greenberg Traurig LLP presided over a dialogue that identified and explored policies to foster innovation and to commercialize ideas. Minister Ellen Gracie Northfleet of Brazil's Federal Supreme Court (STF), the keynote speaker, highlighted advances in Brazilian law related to business and investment such as Binding Precedent and General Effect.

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Brazil has recovered quickly following the world financial crisis in 2009

Source: IBGE and Focus Report from the Brazilian Central Bank
*(Estimate for 2010)

On September 21, over 400 leaders from both nations, including, executives from major multinationals, members of government, researchers and academics convened to chart an action agenda to position both nations - and their citizens - for prosperity in the 21st century. Recognizing collaboration as the vehicle for accomplishing this task, participants analyzed parternship potential at the country, firm, industry and university level to examine five "grand global challenges of the 21st century" - meeting rising demand for energy while sustaining critical resources like water, feeding a growing world population while supporting the production of biofuels, building the technological infrastructure that supports 21st century innovation, sustaining and promoting innovation during increased urbanization and creating a platform for the most innovative mix of manufacturing and services that will create new firms, jobs and industries of the 21st century:

Energy and Water Are Everything: How Do We Meet Global Demand and Manage Critical Resources - the search for innovative solutions to meet growing worldwide demand for energy while simultaneously managing critical resources such as water.

Hunger and Health: How Do We Feed the World and Innovate at the Frontier of Biosciences - examined the role of technology and innovative solutions in generating a response to rising global food and water demand.

Smart Places: How Do We Foster Creativity and Innovation in a World of Rapid Urbanization - the relationship between urban environments and creativity, innovation and entrepreneurship, including how Brazil and the United States can can most effectively manage populations continuing to amass in greater numbers in urban areas.

Smart Infrastructure for Innovation: What Is in the 21st Century Toolbox - the necessary infrastructure to build smart, resilient and sustainable innovation ecosystems and how Brazil and the U.S. can utilize smart infrastructure, transportation, logistics, broadband and "cloud" networks to support 21st century innovation-based economies in each nation.

Making Things: What Does Manufacturing Look Like in the 21st Century – and How Can the United States and Brazil Lead facilitated a discussion not only on the most innovative mix of manufacturing and services in each nation but also the creation of a culture of entrepreneurship that possesses the ability to generate jobs and economic growth.

Conclusions from the dialogues of the panels, mini-laboratories and symposium are more deeply examined in the closing pages of this document.

These conclusions will formulate the areas for more extensive examination during the next series of U.S. - Brazil Learning Laboratories.

Event Agenda

September 20, 2010

2:00 - 4:30 pm - A series of optional, concurrent "Mini-Innovation Learning Laboratories"

1. Accelerating Innovation: Technology Transfer & Commercialization

Co-Chairs

- Julia Rosen, Associate Vice President for Innovation and Entrepreneurship, Arizona State University
- Claudia Stewart, Vice President for Technology Commercialization, Georgetown University
- Rubén Dario Sinisterra, President, National Forum of Innovation and Transfer Technology Managers (Fortec)

2. Mini-Innovation Learning Laboratories: Business/Technology: Energy and Smart Grids

Co-Chairs

- Ray O. Johnson, Senior Vice President and Chief Technology Officer, Lockheed Martin Corporation
- Marco Antonio Rodrigues da Cunha, Director, Corporate Management, Minas Gerais State Energy Company, (Cemig)

Moderator

- Roberto dos Reis Alvarez, International Affairs Manager, Brazilian Agency for Industrial Development (ABDI)

Second Moderator

- Chad Evans, Senior Vice President, Council on Competitiveness

Speakers

- Garry Brown, Chairman, New York State Public Service Commission, (NYSPSC)
- Denys Souza, Superintendent, Minas Gerais State Energy Company, (Cemig)
- Nelson Freire, Director, Brazilian Electrical and Electronics Industry Association, (Abinee)

3. Mini-Innovation Learning Laboratories: Business/Technology: Investment and Risk Climate for Innovation

Co-Chairs

- Michael Nicklas, Founder and Managing Director, SocialSmart Ventures
- Ronald Dauscha, CEO, International Innovation Center (C2i)

4. Mini-Innovation Learning Laboratories: Brazil Diaspora

Co-Chairs

- Ambassador André Amado, Undersecretary General for Energy and High Technology, Ministry of External Relations, (MRE) | Flávio Grynszpan, COO, Brazil Diaspora Network, LLC

Moderator

- Clayton Campanhola, Director, Brazilian Agency for Industrial Development (ABDI)

5. Innovation, Law and Development Symposium

Co-Chairs

- Reginaldo Braga Arcuri, President, Brazilian Agency for Industrial Development, (ABDI)
- Deborah L. Wince-Smith, President and CEO, Council on Competitiveness, (CoC)
- Ambassador Ira Shapiro, Partner, Greenberg Traurig LLP
- Welber Barral, Foreign Trade Secretary, Ministry of Development, Industry and Foreign Trade, (MDIC)

Keynotes

- Minister Ellen Gracie Northfleet, Federal Supreme Court of Brazil | Judge Peter Messitte, U.S. District Court, District of Maryland

Moderator

- Paulo Sotero, Director, Brazil Institute, Woodrow Wilson Center for Scholars

Commentator

- José Ávila, President, Brazilian Institute of Industrial Property, (INPI)

6:00 - 9:30 pm - 2nd US-Brazil Innovation Summit

- Welcome reception and opening dinner
- Opening Remarks: John "Jack" DeGioia, President, Georgetown University | Arne M. Sorenson, President and COO, Marriot International

September 21, 2010

7:30 am - Good Morning

- Registration and Networking Breakfast

8:00 am - Opening Remarks

- John "Jack" DeGioia, President, Georgetown University
- Samuel R. Allen, Chairman and CEO, Deere & Company; and Chairman of the Council on Competitiveness
- Miguel Jorge, Minister of Development, Industry and Foreign Trade, Government of Brazil (MDIC)
- Ambassador Miriam Sapiro, Deputy U.S. Trade Representative, Office of the United States Trade Representative
- Thomas A. Shannon Jr., U.S. Ambassador to Brazil

8:30 am - Where We Have Been – and Where We Are Going

- Deborah L. Wince-Smith, President and CEO, Council on Competitiveness (CoC)
- Erik Camarano, President, Brazilian Competitiveness Movement (MBC)
- Reginaldo Braga Arcuri, President, Brazilian Agency for Industrial Development (ABDI)

9:00 am - Panel: Energy and Water Are Everything: How Do We Meet Global Demand and Manage Critical Resources?

- Alexander "Andy" Karsner, Executive Chairman, Manifest Energy (Moderator)
- Djamil de Holanda Barbosa, Technology Advisor, Eletrobras S.A.
- Carlos Tadeu da Costa Fraga, Research & Development Center General Director, Petróleo Brasileiro S.A.
- Billy Glover, Managing Director, Environmental Strategy, Boeing Commercial Airplanes

- Ray O. Johnson, Senior Vice President and Chief Technology Officer, Lockheed Martin Corporation
- James B. Milliken, President, University of Nebraska
- James Pessoa, CEO, Vale Soluções em Energia (VSE)
- Alan Shaw, President and CEO, Codexis, Inc.

10:30 am - Panel: Hunger and Health: How Do We Feed the World and Innovate at the Frontier of Biosciences?

- Lou Anna K. Simon, President, Michigan State University (Moderator)
- Samuel R. Allen, Chairman and CEO, Deere & Company; and Chairman of the Council on Competitiveness (CoC)
- Uma Chowdhry, Chief Science and Technology Officer, Emeritus, DuPont
- Kepler Euclides Filho, Executive Director, Embrapa
- Harold Schmitz, Chief Science Officer, Mars, Inc.
- Telma Sinicio, Vice President Global Innovation, Natura Cosméticos
- William R. "Randy" Woodson, Chancellor, North Carolina State University

Moderator

- Tiago Maranhão Alves, CEO, Csem Brasil
- Francelino José Lamy de Miranda Grando, Secretary of Innovation, Ministry of Development, Industry and Foreign Trade (MDIC)

12:00 pm - Leadership Dialogue:

- Reginaldo Braga Arcuri, President, Brazilian Agency for Industrial Development (ABDI)
- Mauro Vieira, Ambassador of Brazil to the United States

Luncheon Keynote

- James B. Steinberg, Deputy Secretary of State, U.S. Department of State

1:45 pm - Panel: Smart Places: How Do We Foster Creativity and Innovation in a World of Rapid Urbanization?

- Eduardo da Costa, Director of Innovation, Finep – Funding Body for Studies and Projects (Moderator)
- James K. Clifton, CEO, Gallup Inc.
- Michael M. Crow, President, Arizona State University
- Meyer S. "Sandy" Frucher, Vice Chairman, The Nasdaq OMX Group, Inc.
- Paul Mascarenas, Vice President, Engineering – Global Product Development, Ford Motor Company
- Lee McIntire, Chairman and Chief Executive Officer, CH2M HILL
- Hermann Ponte e Silva, Vice President for Organization and Human Resources, Embraer
- Frank Trocki, Chancellor, Montana State University-Northern

Moderator

- Flávia Grosso, Superintendent, Free Zone of Manaus
- Vinicius Nobre Lages, International Affairs Manager, Sebrae Nacional

2:45 pm - Leadership Dialogue: The New, Innovation-Based US-Brazil Commercial Dialogue

- Deborah L. Wince-Smith, President and CEO, Council on Competitiveness (CoC)
- Francisco Sánchez, Under Secretary of Commerce for International Trade, U.S. Department of Commerce, International Trade Administration
- Welber Barral, Foreign Trade Secretary, Ministry of Development, Industry and Foreign Trade (MDIC)
- Antônio Henrique Silveira, Secretary of Economic Monitoring, SEAE, Ministry of Finance

3:15 pm – Break

3:30 pm - Afternoon Perspective: Financing Innovation in Brazil

- Erik Camarano, President, Brazilian Competitiveness Movement (MBC)
- Rogério Studart, Executive Director – Brazil, The World Bank Group
- Luis Fernandes, President, Funding Body for Studies and Projects (Finep)

3:45 pm - Panel: Smart Infrastructure for Innovation: What Is in the 21st Century Toolbox?

- Chad Evans, Senior Vice President, Council on Competitiveness, (CoC) (Moderator)
- Cristiano Amon, Senior Vice President of Product Management, Qualcomm CDMA Technologies, QUALCOMM, Inc.
- Mariano de Beer, Director General, Telefônica do Brasil
- Mindel De La Torre, Chief, International Bureau, Federal Communications Commission (FCC)
- Patrick D. Gallagher, Director, National Institute of Standards and Technology, U.S. Department of Commerce
- João Alziro Herz da Jornada, President, Brazilian Institute of Metrology, Normalization and Industrial Quality (Inmetro)
- Carlos Seara da Costa Pinto, CEO, Bematech S/A
- Kyle Ryland, Managing Director, Silver Lake Sumeru
- David L. Shuler, Managing Director, Alliance and Venture Management, CME Group Inc.

4:45 pm - Panel: Making Things: What Does Manufacturing Look Like in the 21st Century – and How Can the United States and Brazil Lead?

- João Carlos Ferraz, Director, Brazilian Bank for Economic and Social Development (BNDES) (Moderator)
- David Arkless, President, Global Corporate & Government Affairs, Manpower, Inc.
- Thomas R. Baruch, Founder and Managing Director, CMEA Capital
- Ricardo Felizzola, Founder and Associate of ALTUS, Teikon and HT Micron; Coordinator, CITEC (Fiergs)
- Mark Little, Senior VP and Director of GE Global Research, General Electric Company
- James Phillips, Chairman, NanoMech
- Jan F. Simek, Interim President, The University of Tennessee
- Carlos Américo Pacheco, Professor, University of Campinas (Unicamp)

5:45 pm - The Next Chapter in the US-Brazil Innovation Journey: 2011 and Beyond

- Samuel R. Allen, Chairman and CEO, Deere & Company; and Chairman of the Council on Competitiveness (CoC)
- Thomas A. Shannon Jr., U.S. Ambassador to Brazil
- Erik Camarano, President, Brazilian Competitiveness Movement (MBC)
- Reginaldo Braga Arcuri, President, Brazilian Agency for Industrial Development (ABDI)
- Deborah L. Wince-Smith, President and CEO, Council on Competitiveness (CoC)
- John "Jack" DeGioia, President, Georgetown University

2ND US-BRAZIL INNOVATION SUMMIT

Day 1 – September 20, 2010

The first day of the 2nd US-Brazil Innovation Summit was devoted to a series of four Mini-Innovation Learning Laboratories that covered subjects including technology transfer, energy efficiency, investment and areas for potential partnerships - all with the common goal of identifying common strategies to foster innovation and economic growth.

An Innovation, Law and Development Symposium also occurred on day one of the Summit. Led by Minister Ellen Gracie Northfleet of Brazil's Federal Supreme Court (STF) and U.S. Judge Peter Messitte, the event examined the role of the regulatory environment in supporting an innovation ecosystem.

Building Bridges Between Research and Industry

Accelerating Innovation: Technology Transfer and Commercialization

Research institutions at Brazilian and U.S. universities are hotbeds of innovation. Converting these discoveries to commercialized goods and services requires enabling systems and procedures.

The Mini-Innovation Learning Laboratory on Technology Transfer and Commercialization facilitated a discussion of best practices, areas for bilateral partnership, intellectual property rights and a better understanding for the current landscape in the United States and Brazil.

Importantly, the discussions reinforced that the benefits of a robust technology transfer and commercialization system extend beyond the borders of the host country. This encourages not only US-Brazil partnership in this area but also continued dialogue and information sharing.

In Brazil, legislation passed in 2004 allows the transfer of technology from universities and research entities to public enterprises. It also permits public funds for use in technological development and, in generating intellectual property (IP), and for use by private organizations.

Brazil's Innovation Law is similar to the U.S. 1980 Bayh-Dole Act, which laid the groundwork for exponential growth of the annual number of patents recognized by the United States Patent and Trademark Office (USPTO) from U.S. universities.

As a result, the United States currently has the most developed network of technology transfer offices in the world, serves as a benchmark in the area, and produces a remarkable amount of the world's intellectual property that originates in universities.

Co-chaired by Julia Rosen (1), Rubén Dario Sinisterra (2) and Claudia Stewart (3), the main focus of the discussion was the role of universities and the need to improve the connectivity of their laboratories with the private sector in Brazil.

> ***In the past a majority of entrepreneurs encountered difficulties when working on innovation and technology, because most of their effort went into maintaining companies' routines because of the economic scenario of the time.***
>
> *Carlos Roberto Rocha Cavalcante*
> *Superintendent CNI/IEL*

Brazil has registered a growing number of technology transfer offices since 2004, from just over ten to nearly two hundred. These offices have overseen the development of intellectual property now in comercial use in Brazil and throughout the world.

The University of Campinas (Unicamp), Federal University of Minas Gerais (UFMG), University of Sao Paulo (USP) and the Pontifical Catholic University of Rio Grande do Sul (PUC-RS) are a few of the leaders in the field in Brazil.

At the beginning of the session, one of the co-chairs, Julia Rosen, Associate Vice President for Innovation and Entrepreneurship at Arizona State University, gave a presentation on the current state of technological transfer and commercialization in the United States.

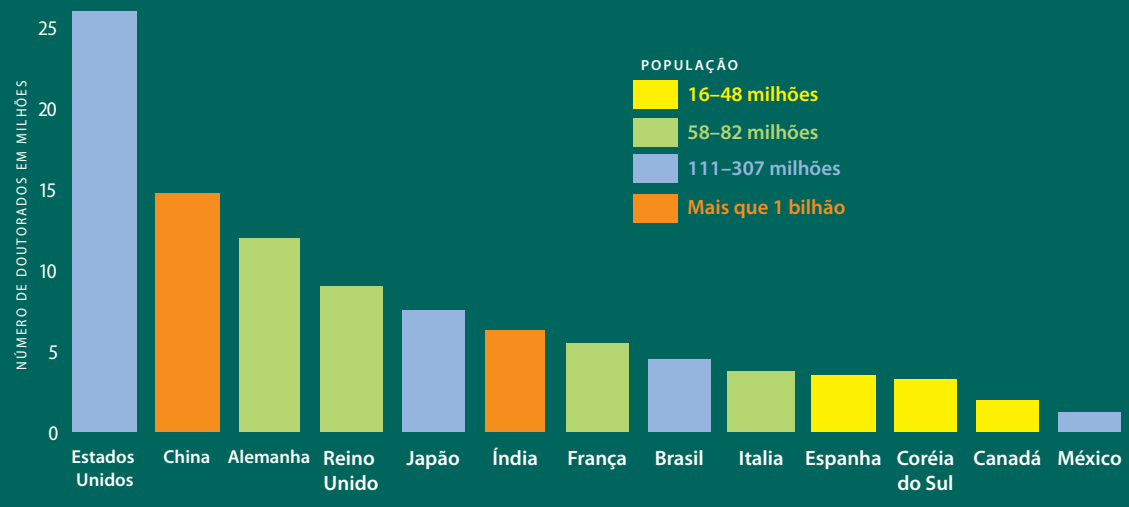
UFMG Director of Technological and Intellectual Property Transfer and president of the National Forum of Innovation Managers, Rubén Dario Sinisterra, presented an overview the current landscape in Brazil, including, the intellectual property network and UFMG's role in coordinating activities related to technology and innovation transfers in Brazil.

Sinisterra also emphasized the importance of Fortec, created in 2006 to bring people together from universities and research entities responsible for innovation policy and to produce other activities related to intellectual property and technology transfers.

The Mini-Laboratory also reviewed the growth of Technological Innovation Nucleuses (NIT) in Brazil. The number of NITs in Brazil reached 101 in 2008 from 43 in 2006,

Brazilian R&D is still hampered by a talent shortage

Increasing the researche base in the private sector is vital for advances in R&D



Fonte: NSF, Science and Engineering Indicators, 2008

In 2007 Brazil had 124.9 thousand researchers, of whom only 38.1% were in the private sector. The great majority, 56.8%, are in higher education facilities. This contrasts sharply with that of OECD (Organization for Economic Cooperation and Development) member-countries and its partners in the BRIC group (Brazil, Russia, India and China). South Korea, for

an increase of 57%. It is estimated that the number of NITs reached 161 in 2010. The volume of royalties collected from the successful commercialization of technology in Brazil grew substantially, arriving at nearly US $7 million in 2008 from only $500 thousand two years earlier.

The dialogue of the mini-laboratory was constructed around two primary issues of technology transfer and commercialization - the leading barriers and facilitators to identifying and protecting intellectual property and of success stories related to technological transfer as experienced by the group.

Using this foundation, participants debated the role of Brazilian universities in the process of transferring technology, as well as the scarcity of professionals able to construct a bridge between academic research and the market - technological business managers.

Another issue discussed was the promotion of R&D in Brazil, which is carried out mostly by federal and state government bodies that act to promote the creation and consolidation of industry in their respective regions.

In the opinion of the participants, companies with business models focusing on technological development and in possession of technology and research labs, may have the potential to serve as bridges between universities and research institutes and industry, particularly in respect to the improvement of production processes and the scaling of products and services.

Dialogue around IP and the expansion of NITs in Brazil was the starting point for wider discussions. One of the tasks

> ***"It is important for us to work on a possible review of the focus of Brazilian universities to create a new interface to properly play the role of agent promoting the process of transfer and commercialization of technology."***
>
> *Lucia Carvalho Pinto de Melo*
> *President, CGEE*

instance, has 222 thousand researchers, with 76% in the private sector. In China, 66.4% of 1.423 million researchers are in the private sector.

Brazil presently seeks to seeks to change the profile of its university graduates. In China, 39% of graduates are in the areas of engineering and science, in Germany 31%, in Japan 24%. In Brazil only 15%, equivalent to 121 thousand graduates.

However, Brazil is evolving fast. From 2001 to 2007, annual growth of the number of researchers was 8.18%, nearly the level as South Korea. The number of scholarships and grants awarded by federal bodies supporting research such of the Coordination for the Improvement of Higher Education Personnel (Capes) and the Brazilian Council for Scientific and Technological Development (CNPq) reached record figures. From 2003 to 2009 the number of scholarships and grants awarded for scientific initiation and postgraduate (Master's, PhD, Post-PhD) programs increased 7.8% p.a. In 2003 slightly more than 74 thousand scholarships and grants were awarded, as compared to over 116 thousand in 2009.

The acquisition of qualified labor for R&D and its integration into the Brazilian private sector are issues to which the country is beginning to address. At the same time,investments in education and R&D and the increasing tendency for research lead by the private sector are indications that Brazil is beginning to address essential challenges to connect innovation with its economic growth in the coming decades.

The country currently has 18 million students in higher education and 121 thousand professionals in the fields of engineering, computer science, telecommunications, industrial design, physics, chemistry, health and agricultural science and systems analysis that graduate annually.

Another valuable asset is Brazilians returning from abroad, particularly following the completion of MBA programs.

Recent research by Gnext Talent Research shows that 82% of Brazilians earning some of the best MBAs in the world subsequently return. In the opinion of 75%, of those that return, the pricing driver was better opportunities in Brazil than abroad.

Expanded crude oil production, especially offshore, has boosted research and the generation of intellectual property. Petrobras and Unicamp are Brazil's principal patentees

> ***"Paradigms have been changing over the years in Brazil. It is important to remember that a few years ago most of the country's pharmaceutical industry was merely packaging drugs. Today it develops new medicines and therefore requires constant technological evolution."***
>
> *Rubén Dario Sinisterra*
> *President, Fortec*

deemed most important for the transfer of technology and commercialization in the country is the development of new mechanisms to connect university research to the country's budding community of entrepreneurs.

Another conclusion that emerged from the discussion was the significance of developing patents for the work of Brazilian universities and research entities and the establishment of robust procedures to facilitate this process.

A possible way to improve the process of generating patents in Brazil is by promoting specialist training for professionals responsible for the transfer and commercialization of technology, with emphasis on business development management. One of the suggestions presented was to better utilize NITs by assigning business managers to oversee the commercialization of each possible patent NITs.

In addition, expertise in negotiating royalties from a patent is a potential indicator of performance for NITs in Brazil. Building off of experiences in the United States, it was agreed that the proper metric for success in this area is by the financial output of commercialized patents rather than quantity of patents registered.

Experiences in the U.S. were also used to discuss the necessary relationship between universities and research centers and the recipients of transferred technology in Brazil. Identified as mostly small and medium sized enterprises, it was deemed necessary to improve the Brazilian system for aligning the interests of these parties and facilitating a greater exchange of communication.

Participants concluded that the leading question in Brazil is whether companies really possess the necessary maturity and comprehension of patent culture (payment of royalties), to enable commercialization of innovations produced by Brazilian entities.

What is clear is that a maturation of the Brazilian system is needed from both the perspective of the purchaser and producer of a patent. Brazilian entrepreneurs and SMEs must be better aware of the merits that emerge through a stronger patent system and the extensive ideas developing in university labs.

> ***We lack technological business managers in Brazil, to assist in the process of transferring technology. These professionals are able to understand the complex process of transforming research into technological products.***

Antonio Valerio Netto
CEO, Cientistas Associados

Best practices

A large number of Brazilian firms across a variety of industries are unaware of best practices in licensing technology. Without reform in the Brazilian system, efficiency in the commercialization of patents will not occur.

Without a strategy that is based upon medium and long-term solutions, Brazilian firms will lack the tools necessary to be globally competitive.

In Brazil, incentives for research have been traditionally overseen by federal bodies such as the Funding Body for Studies and Projects (Finep) and the Brazilian Council for Scientific and Technological Development (CNPq), and state bodies such as the Foundations for Research Support (FAPs).

Even though investment in research in Brazil by the private sector is still limited, there are signs of encouragement on the horizon. Maturation of IP laws must ensue to perpetuate this process. Should the Brazilian system continue to take important steps in the protection of intellectual property, it is logical to forecast that the private sector will assume a greater role in the funding of research.

Formal Innovation law in Brazil dates to 2004 and is indicative of the only recent dialogue of intellectual property protection and patents in the country. The nascent nature of this institution in Brazil has allowed for little time to study its effect on the country's innovation processes. What has been identified as most important is the change in mentality that accompanies the new laws and the rise in consciousness of the issue.

The participants in the mini-learning laboratory pointed out that the Brazilian government has proved itself capable of leading change in industrial policy in the past. The country's shipbuilding industry was indentified as such an example - the government provided orders for ships and technological products that is associated with building a local industry that thrives today.

The renaissance of this industry is credited more to purchase guarantees than the stimulus of research. Participants recognized the occurance of this phenomenom in the United States, where government contracts have aided advanced technology products to emerge.

Conclusions

In Brazil, it is necessary to strengthen mechanisms to accelerate the process of technology transfer and commercialization to cultivate an industry of research, development and innovation. These efforts will aid the formation of a robust culture of entrepreneurship in the country.

These efforts improve the channels of communication between the research and business communities and enable a greater amount of basic research to move from the laboratory to the commercial market.

Bell Labs was mentioned by participants as an example of successfully integrating the research and commercialization components of its business. Other examples included Google, IBM, Microsoft, Accenture, Mitsubishi, AT&T, DuPont and Lockheed Martin.

Brazilian examples were also presented, highlighting the efforts of the State of Rio Grande do Sul and PUC (Pontifical Catholic University) Minas Gerais State, with UFMG (Federal University of Minas Gerais). These success stories made effective use of Technological Innovation Nucleuses (NITs). located within the universities.

Brazilian NITs are an important tool to align the research and technology industries of the United States and Brazil and to offer increased opportunities for the commercialization of patented research.

> ***It is necessary to promote research and development enterprises in Brazil, so they become an integral part of the process of transferring and commercializing technology.***

João Alziro Herz da Jornada
President, Inmetro

This system is also very benefical to startups in the technology industry that so often license the discoveries of university research labs.

A solution that can be implemented immediately is the creation of education programs for Brazilian professionals to provide a greater understanding of how to best utilize the country's technology transfer system, including knowledge of the process currently in place in the United States.

Further, the patent banks of Brazil's NITs should be consolidated online and organized into a manner that is easily accessed by U.S. companies.

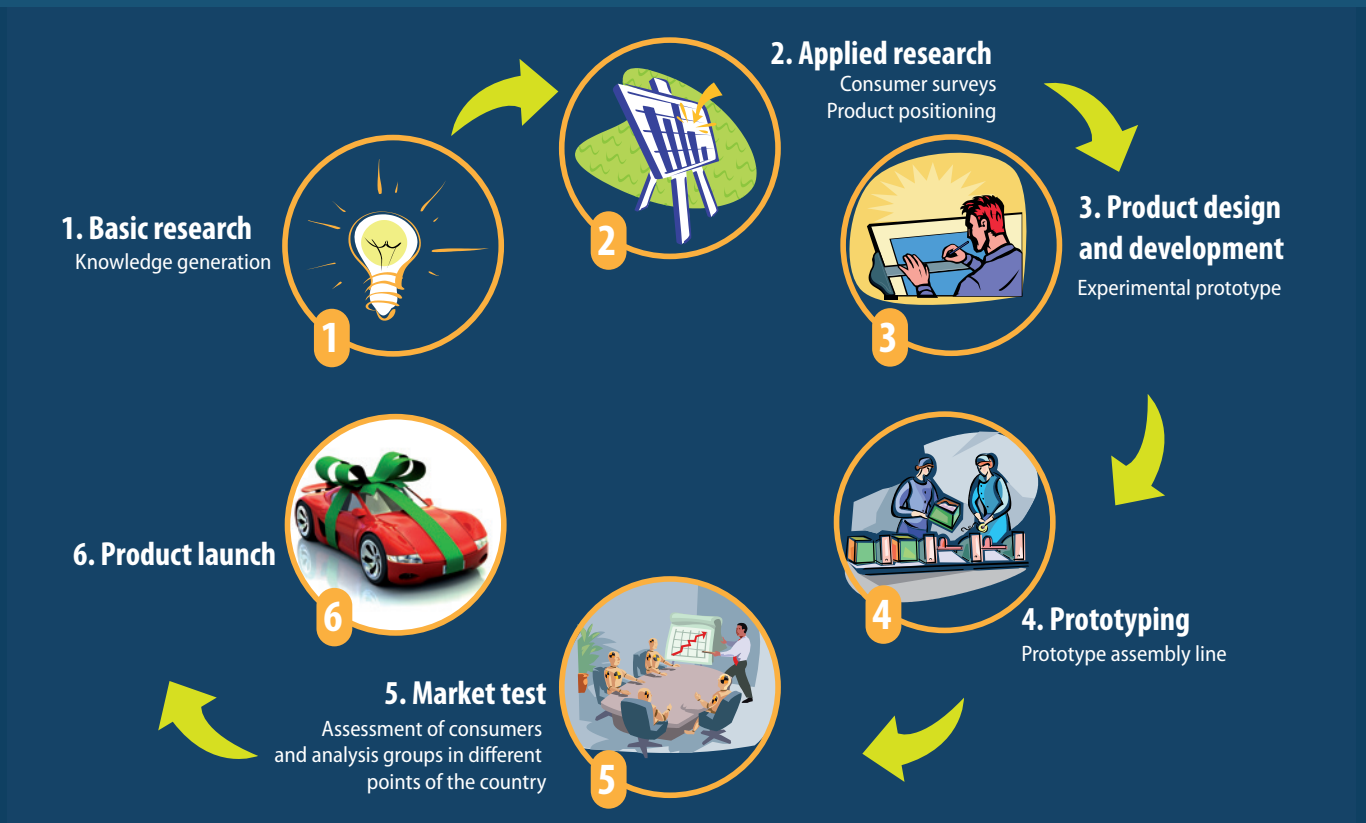
Another recommendation that emerged is the formation of agreements between U.S. and Brazilian universities so that U.S. universities represent Brazilian patents in the U.S. market in exchange for a fee or percentage of royalties.

The participants concluded that to overcome the challenges involved in technological transfer it is vital for universities to be more dynamic in regards to cultural differences that exist between the institutions and organizations of nations.

Geographic regions housing university research should also be a hotbed of startup activity. Efforts to promote this culture should be paired with the establishment of accurate metrics that measure the degree of technology transfer and commercialization occurring between these entities.

Most agreed upon by the participants is the presence of synergies between the two countries and the substantial interest in creating joint activities between the United States and Brazil. These partnerships will be increasingly possible through education of professionals to these opportunities and increased numbers of entrepreneurial businesses to license research.

Life Cycle for the development of technological providers



Accelerating Technology Transfer and Commercialization

Co-Chairpersons

Julia Rosen – Associate Vice President for Innovation and Entrepreurship, Arizona State University | Rubén Dario Sinisterra – President, National Forum of Innovation and Transfer Technology Managers (Fortec)| Claudia Stewart – Vice President for Technology Commercialization, Georgetown University

Participants

Elizabeth Ritter – Coordinator, Technology Transfer Office (PUCRS) | Paulo Ignácio Fonseca de Almeida – Director, Innovation Agency, UFSCar | Lucia Melo – President, Centro de Gestão e Estudos Estratégicos (CGEE) | Antônio Valério Netto – CEO, Cientistas Associados | Augustine Cheng – Managing Director and Chief Legal Officer, Arizona Technology Enterprises | David Lerner – Tech Investor, Totius Group, LLC | John Swartley – Deputy Executive Director, Center for Technology Transfer, University of Pennsylvania | João Alziro Herz da Jornada – President, Instituto Nacional de Metrologia, Normalização e Qualidade Industrial (Inmetro) | Carlos Cavalcante – Superintendent, Instituto Euvaldo Lodi (IEL)

Technology and Energy Efficiency

Business/Technology: Energy and Smart Grid

Effective use of smart grid networks has the potential to impact numerous sectors of the economies of both Brazil and the United States. In addition to bringing greater efficiency, smart grids enable loss reductions in the electric system - especially relevant to Brazil.

At the Mini Laboratory on Energy Efficiency and Smart Grids, professionals from leading enterprises in their respective sectors in Brazil and the U.S. discussed opportunities for collaboration in the area of energy efficiency and smart grids in the two countries.

The dialogue also encouraged information sharing around the most prominent opportunities and challenges in both nations in the implementation of smart grid projects.

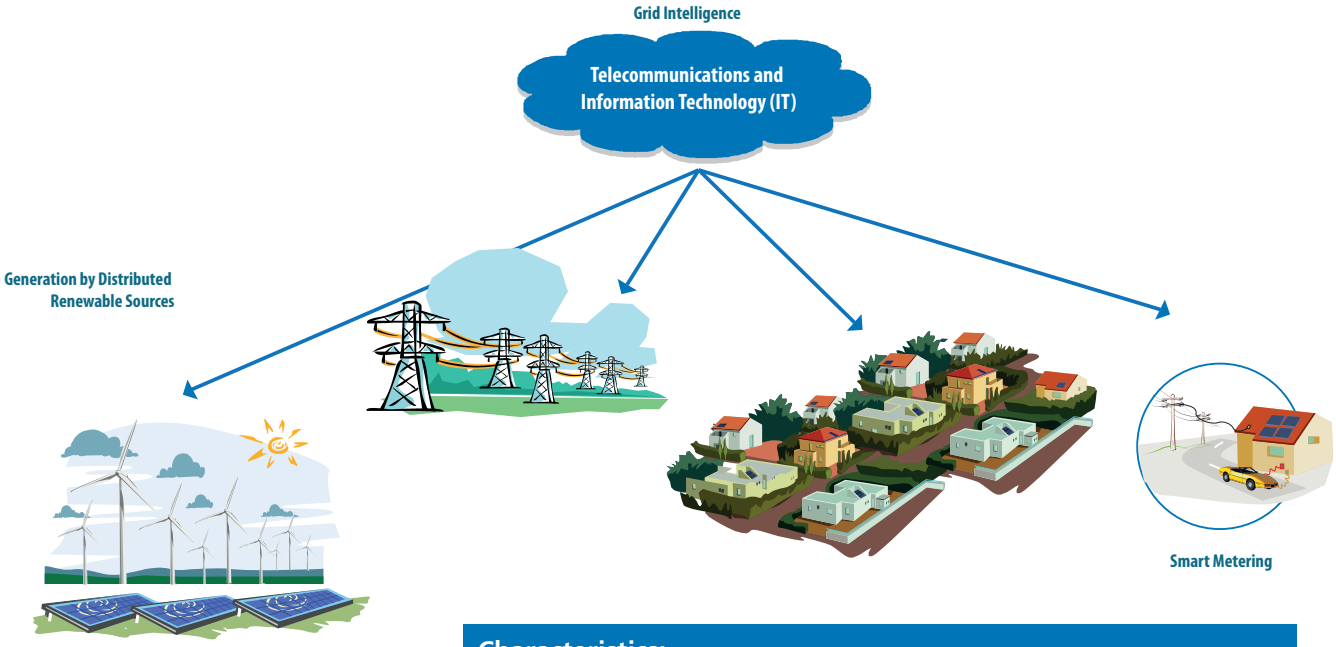
The session opened with a historical overview of the issue provided by the co-chairs, of smart grid projects in Brazil and the United States. Also referenced was the work of the May 12, 2009 Innovation Learning Laboratory in facilitating a bilateral dialogue on the topic and creating a tangible partnership between utility companies in Minas Gerais and Richland, Washington to create a shared smart grid demonstration project. This project brings together Brazilian expertise in the interconnected operation of the transmission real-time systems and developments and investments in distribution in the United States.

The co-chairs of the discussion, Dr. Ray O. Johnson, Senior Vice President and Chief Technology Officer, Lockheed Martin Corporation and Mr. Marco Antonio Rodrigues da Cunha, Chief Corporate Management Officer, CEMIG introduced the idea that the adoption of systems based on automation, controls and telecommunications to manage and operate energy distribution networks (known as smart grids) have different drivers in Brazil and the U.S.

In the United States, the leading driver is the rationalization of energy use based on visibility and consumption management by end users. While in Brazil the primary driver is the elimination of losses in distribution grids by operator management.

An exchange of experiences in the area of energetic efficiency was moderated by Roberto dos Reis Alvarez (1), from ABDI, and co-chaired by Ray Johnson (2), from Lockheed Martin Corporation and Marco Antonio Rodrigues da Cunha (3), from CEMIG. Abinee Director Nelson Freire (4) was also present. The debates were guided by the concern of also involving consumers in smart grid implementation

Energy Smart grids solutions have applications for different components of the electric system, from generation to consumption



Characteristics:

- Proposed topics: distributed generation, grid intelligence, smart metering, telecommunications and information technology
- Electric region with about 95,000 end users

Source: CEMIG

CEMIG
A Melhor Energia do Brasil.

New experiences in the distribution field

In Brazil, Minas Gerais State Energy Company (Cemig) is developing a smart grid pilot project for 95 thousand consumers in Minas Gerais State. Consumers involved are representative of Cemig's general market, falling into the categories of commercial, residential or rural clients. The project's main aim is to establish whether smart grids are a self-sustaining business within the scope of energy distribution.

A number of institutes, universities, government bodies and companies are discussing smart grids. A work group linked to the Brazilian Ministry of Mines and Energy is studying public policies, regulations and possible sources of funding. In this picture, as Cemig's Superintendent Denys Cláudio Cruz de Souza emphasizes, the lack of financial incentives is a fact, and it is hampering the advance of smart grid projects.

The next stages of Cemig's project call for validation by Aneel (the Brazilian National Electric Energy Agency), identification of synergy with similar projects in course and identification of opportunities stemming from the addition of new services.

Comprehensive energy efficiency was stressed by Lockheed Martin Corporation Senior Vice-President Ray O. Johnson. Efficiencies measures must include not only the electric system but also all human activity using energy, particularly production and transport. Lockheed Martin is currently developing methods for reducing the energy consumption and emissions of aircraft, including the use of biofuels, a field where Brazil is a leader. Johnson emphasized that adopting technologies to increase energy efficiency is not only a matter of sustainability, it makes economic sense.

Johnson reminded the participants that smart grids only make sense if they contribute to efficiencies in the use of natural resources, energy and assets for generation, transmission and distribution. The contributions of smart grids must be more tangible than fashionable, capable of generating economic results and contributing to reductions in energy consumption, GHG emissions and global warming.

Marco Antonio da Cunha, Cemig's Managing Director, provided an overview of his energy company, detailing the firm's strong base in hydropower and investments in other renewable sources, such as wind and solar. The company has a smart grid project for energy distribution in the city of Sete Lagoas, that has provided the firm a rich background and technological prowess in the field.

The success at Sete Lagoas can be be measured by a nearly 2% reduction in energy loss - well below the Brazilian average. However, as noted by da Cunha, energy consumption in Brazilian homes is approximately 10% of that of American homes. This illustrates a fundamental difference and challenge in discussing the replication of Cemig smart grids in the United States.

For Cemig, a robust smart grid reaches all areas of household consumption - telecommunications, gas, water and cable television. Laying out the course for mass adoption of smart grids, the Managing Director called for advancements in technology, improved business models and a better regulatory environment.

The notion that the term smart grid is still imprecise came up recurrently during the discussion. It emerged that several technologies and solutions under development use or are associated with the term. Participants agreed that smart grid technology can be best defined as the use of automation, control and telecommunications to manage and operate energy grids, whether it be transmission (high grid) or distribution (low grid). This definition will continue to be refined as smart grid technology matures and is better understood.

As it is an area in which technical and business models are in the process of construction, the economic rationale of smart grid projects is still questionable. This was an important connection between Marco Antonio da Cunha's statements and those of Garry Brown, Chairman of New York State Public Service Commission (NYSPSC).

Marco Antonio believes that rules for funding development of the technology and products necessary to put smart grids in place must be clear. Regulatory agents will play a major role in this process. "Only now are regulatory agencies beginning to correctly assess huge opportunities afforded by smart energy grids," states Cemig's Managing Director.

Garry Brown is of the opinion that regulatory action should be in line with consumers' requirements. However, there are still more questions than answers. He believes they must be answered before spending billions of dollars on replacing the existing electric grid.

> *How fast must I move? If I spend a lot of money quickly and make mistakes, it isn't ideal. But neither is it ideal if I go too slowly and get unsatisfactory results.*
>
> *Garry Brown*
> *Chairman, New York State Public Service Commission (NYSPSC)*

Brown argued that in New York City alone 7.8 thousand miles of cabling needs to be replaced because it is over 70 years old. "The last thing we want is to invest in something that doesn't last, that doesn't have a long enough useful life." Additionally, interconnectivity between grids is also important, and he stressed the need for a system that can integrate old and new grids. "We don't have to reinvent the wheel," he added.

Brown also raised important points concerning consumer involvement in smart grid development. Presently, Brown noted consumer concern is limited to the light going on when the switch is hit. Using the smartphone revolution as an example, he urged for "an educational process like the telecommunications sector." As with telephones before it, intelligent household appliances working more economically must become a part of people's daily lives when consumers are trained to understand new services.

NYSPSC's Chairman also introduced cyber-security into the conversation, making the connection between the elevated flow of sensitive data and the need for matching mechanisms to protect critical information. Garry Brown also emphasized that implementation strategies must be

Aneel specialist Márcio Alcântara described work in progress in Brazil to prepare a suitable regulatory framework for energy network projects to Mini-Laboratory participants.

carefully thought out. "How fast must I move? If I spend a lot of money quickly and make mistakes, it isn't ideal. But neither is it ideal if I go too slowly and get unsatisfactory results."

Another unanswered question concerns funding for smart grid implementation. Who is going to settle the bill – government, business or consumers? Brown sees no signs that the government will invest resources in a new system without passing the cost off to consumers. His belief is that the U.S. government should continue spending more on transmission than on smart grids.

Brown suggested private investment and partnerships with telecommunications companies as an alternative. He pointed to the change in telecommunications that occurred after the government had withdrawn from the market.

On being consulted about the possibility of several public utilities concessionaires, such as gas, water and telecommunications, sharing existing infrastructure as a way of reducing expenses and funding investment and research, Brown stated that the idea is viable and would create a number of opportunities.

He offered an idea of the same person reading water, light and gas meters instead of employees of different companies. "It's possible to use a single network, with a communications protocol from each house to a center," Brown explained. However, he warned that this consolidation would also increase the system's security risks.

The importance of considering cyber-safety while implementing a smart grid system was echoed by several participants.

The creation of solutions to facilitate the sharing of infrastructure among telecommunications and additional utilities, originally raised by Marco Antonio and Garry Brown, was discussed by several other participants. Consensus was reached that regulatory doubts will be the greatest barrier to achieving the idea.

In the United States, regulatory policy exists at both the federal level, through the Federal Energy Regulatory Commission (FERC) and the Federal Communication Commission (FCC) and through, state energy regulators. Whereas the FERC handles energy transmission between states, each state has its own regulatory commission. With regulatory decisions concerning smart grid maintained at the state level, a natural complication occurs in harmonizing standards across states. An important role is also played by the National Institute of Standards and Technology (NIST), which is responsible for developing technical standards for devices for smart grids.

Participants agreed that for adoption of smart grids will allow business, consumers and government to gain. Senior Vice-President of Lockheed Martin Corporation Ray O. Johnson added the importance of considering all "evolutionary and revolutionary" technologies that are essential to support the numerous unknowns surrounding the future of smart grids.

Brazil – National Interconnected System

With its unique and size design, Brazil's large hydrothermal system for the production and transmission of electric energy contains a high predominance of hydroelectric plants and multiple proprietors. The National Interconnected System (Sistema Interligado Nacional - SIN) comprises enterprises in the South, Southeast, Center-West and Northeast Regions as well as part of the North Region. Only 3.4 percent of the country's electricity producing capability lies outside the SIN, in small isolated systems mostly located in the Amazon region.

Source: ONS (National Operator of the Electric System).

U.S. participants stressed the role of NIST in defining technical standards for the U.S. is key, as the Brazilian delegation agreed for InMetro in Brazil. IBM executives present offered that defining technical standards is important to the extent that they do or do not allow application of hardware and software solutions in different markets. On the other hand, the participants acknowledged that different markets with their own individualities in respect to grids and consumption characteristics will require specific solutions and not mere transposition of solutions from one country to another. The moderator proposed that the participants discuss whether differences between countries might be good for companies that manage to develop solutions adapted to different markets, thus increasing the scope for use and the potential market worldwide.

Nelson Freire, Director of the Brazilian Electrical and Electronics Industry Association (Abinee) remarked that Brazil has extensive experience in developing hardware and software for energy transmission and distribution systems, most notably in the implementation of SIN with Brazilian technology. However, there are still no Brazilian suppliers with integrated complete smart grid solutions for energy distribution, largely because the market has still not developed and the regulatory framework has not been established. Concert Technologies' Vice-President Angelo Menhem saw this as an opportunity for partnership with American companies to develop smart grid solutions for markets and energy networks with similar characteristics to Brazil's.

In Brazil, the Federal Government has established a working group comprising of the Ministry of Mines and Energy (MME) and the Brazilian National Electric Energy Agency (Aneel) to determine the best practices for introducing smart grids in the country. According to Márcio Alcántara, Aneel's regulation specialist and a member of the work group, smart grids bring efficiency, but they are also subject to the cost of tariffs because of Brazil's current import policies. To address this, one of the working group's tasks is to study what can be changed in Brazilian legislation to address these challenges.

Alcantara suggested one possibility of allowing companies in different sectors – energy and telephones for example – to share existing infrastructure to reduce costs. However, current law in Brazil does not allow energy companies to offer other services, which, he feels, have the potential to generate additional income, reduce the burden on consumers and make smart grid projects viable. Alcântara asserted that the Brazilian government is aware of the necessity of federal support, to implement major smart grid projects in the country. This underscores Aneel's activitities to seek regulatory alternatives that protect consumers while creating a suitable and attractive framework for investment in smart grids.

Aneel's specialist also stressed that smart grids will create business opportunities between Brazil and the U.S. "Technology to be adopted in Brazil cannot be a mere import. It will have to be developed and/or adjusted to local specifications, and there will therefore be huge opportunities for partnerships between Brazilian and U.S. companies." Complementarity in the development and implementation of smart grids was also supported in a proceeding presentation by Denys Claudio de Souza, Cemig's Superintendent of Development and Distribution Engineering.

Claudio de Souza presented Cemig's plan for a sister-city smart grid demonstation project. The project occurs through a partnership of two cities – one in Brazil and the other in the United States - with the participation of energy, hardware and software companies in both countries. This initiative stems from an idea that arose during the series of Innovation Learning Laboratories in 2009, organized by ABDI, CoC and MBC.

The cooperation project involving energy concessionaires in Brazil and the United States calls for forming a group of enterprises and universities to take part in the implementation process in both locations. In Brazil this will take place in the city of Sete Lagoas (Minas Gerais State), where Cemig already has a project in the area, and in Richland, Washington in the United States. Cemig is currently seeking partners for this project that can help faciliatate the implementation in both Brazil and the U.S. Prior to the 2nd US-Brazil Innovation Summit, a group of Cemig executives visited the city of Richland, where they engaged in a new series of meetings to advance the project. Partners in the U.S., particularly in the areas of hardware and software are also being sought to contribute to this effort.

The sister-city demonstration project is expected to develop markets in each country for new products and services. Particularly as telecommunications and security systems and additional utilities are incorporated into the grid.

Business/Technology Roundtable: Energy/Smart Grid - Findings and Conclusions

Efforts to define smart grid are is still imprecise. Several solutions and technologies are competing and being developed. In general, smart grid refers to the application of technology and telecommunications to operate and manage the automation and control of electrical systems.

Brazil and the U.S. both have experience and competencies in the adoption of solutions for automation and control and telecommunications to operate and manage electric systems. Brazilian expertise in interconnected operation of transmission grids and American development of distribution grids were identified.

There are different drivers for the application of smart grid solutions in Brazil and the U.S.

Energy efficiency and the distribution of energy from renewable energy sources are key for the implementation of all smart grid solutions.

Proliferation of smart grids gives rise to new challenges such as cyber-security - one that is exacerbated as smart grids consolidate additional utilities like gas and water.

Viable smart grid business models are still in the development stage.

The economic feasibilty of smart grid projects can be elevated by building shared-use grids that service both public and private utility companies.

A lack of adequate regulation is slowing the development of smart grid projects in both Brazil and the U.S.

While smart grid standards have not been established between Brazil and the U.S., an advantage can be found for enterprises that create solutions that can be adapted for differing markets.

Cemig's bilateral project with Richland, WA exemplifies how US-Brazil partnerships can be effectively employed to pool core competencies and overcome challenges present in launching smart grid projects.

INTERVIEW

NELSON FREIRE

Abinee (Brazilian Electrical and Electronics Industry Association)

Abinee Director Nelson Freire is a leader in the field of smart grids and has worked closely with Brazilian entities to best understand the most prominent challenges facing the creation of active smart grids. Improving efficiency sits at the top of his list of priorities. In the following interview, Freire gives details of the viewpoints he presented at the round table.

> **"Smart grids will also improve quality of energy. At present quality is strongly impacted by the condition of our grid, which is really old"**

What's the greatest challenge for smart grid implementation in Brazil?

Nelson Freire – The first is to define functionality concepts to rule smart grids in Brazil. These functionalities are highly dependent on the country, and we must thus create the model. This is what Aneel is doing; it is the first step. Until it's done, manufacturers' hands are tied. Government has opened up to private initiative's participation in discussions about how we feel about smart grids. There are two agents: manufacturers and users. In the case of the former, we're organized in Abinee. In the case of the consumers, we are associated in the Brazilian Association of Digital Agencies (Abradi). Both these entities work with the government.

Once the model has been adopted, what will industry's role in the process be?

Nelson Freire – Industry will have to invest, mainly in R&D to create these national solutions and adhere to standards yet to be established. I see a huge effort in how the grid works. Communications standards haven't been defined yet, whether the electric cable itself will be used, or radio. I believe they will coexist. But experiences to date haven't been so good, because they show that communications security of both technologies must be improved. There are pros and cons in a number of situations.

We know of experiences in the past that were unsuccessful because of Brazil's specificities. Our main challenge is to make communications reliable.

How do smart grids help fight energy and wire theft?

Nelson Freire – Smart grids will help detect such action immediately, which is not easily done today. The sophistication index of fraud in Brazil is far higher than in the U.S. Smart grids will also improve quality of energy. At present quality is strongly impacted by the condition of our grid, which is really old. We can't ensure quality energy supply to consumers. We can't even gauge it. Another point is that we'll be able to better control grid operation. We'll gain efficiency, which translates into money for the concessionaires.

How can Brazilian and U.S. enterprises work in partnership?

Nelson Freire – The Americans have very interesting technology in the area of security. They also have very high level technology in the communications area and technical knowledge about software. This must be added to the technical capability of Brazilian companies to develop low cost solutions.

Business/Technology Roundtable: Energy & Smart Grid

Co- Chairpersons

Ray O. Johnson - Senior Vice President and Chief Technology Officer, Lockheed Martin Corporation and Chairman of the Council on Competitiveness, CoC | Marco Antonio Rodrigues da Cunha - Director, Corporate Management, Companhia Energética de Minas Gerais, Cemig

Moderator

Roberto dos Reis Alvarez - International Affairs Manager, Brazilian Agency for Industrial Development, ABDI

Speakers

Garry Brown - Chairman, New York State Public Service Commission | Denys Souza – Superintendent, Engineering, Department of Development and Distribution, Cemig | Nelson Freire - Director, Abinee

Commentators

Chad Evans | Senior Vice President, Council on Competitiveness, CoC

Participants

Antonio Busalacchi - Chairman, Scientific Committee, World Climate Research Program - University of Maryland | Frederick F. Butler - Executive Vice-President - Salmon Ventures Ltd | Craig O'Connor - Director, Office of Renewable Energy and Environmental Exports, The Export-Import Bank of the United States | David Dastvar - Partner, InnoVest Group | Edward Ferris - Partner, Charlesmore Partners International | Bob Gilligan - Vice-President, General Electric | Ron Hamaoui - Director of Product Management, Smart Grids, Petra Solar, Inc. | Mike Hill - President and CEO, On Trac, Inc | Monte Hill - COO, On Trac, Inc | Matthew Loab - Staff Executive, Corporate Strategy IEEE | Mark Madden - Regional Vice-President, Energy Markets, AlcatelLucent | Joseph Marsilii - Managing Partner, SGN3 | Robert Mayer - Vice-President, Industry and State Affairs with the United States | Mike Sample - Vice-President, Indiana University | Don Cortez - IBM Brasil | Joisa Campanher Dutra - Professor and Consultant, FGV | Carlos Eugênio Lion - Director, Anacom | Angelo Fares Menhem - Director, Concert Technologies | Luiz Jose Hernandes Junior - Project Coordinator, Smart Grids, CPqD, R&D Telecommunications Center | Hélio Marcos Machado Graciosa - President - CPqD, R&D Telecommunications Center | Helder Pires Bufarah - Manager, R&D Programs, CPFL, Paulista Power and Light | Marcos Rizzo - Vice-President, ELO Sistemas Eletrônicos | Gilberto Teixeira - President, ELO Sistemas Eletrônicos | Ricardo G. Trentin - Manager, Engineering and Telecommunications, Celesc Distribuição S/A | Aluísio Veloso - Manager, Business Development, Water and Special Projects, ELO Sistemas Eletrônicos | Luiz Fernando Rust da Costa Carmo - Inmetro | Ricardo Vinhas Correa da Silva - President, Sinaees | Paulo Pereira - Director, Energy and Automation Business Development, National Instruments | Márcio Venício Pilar Alcântara - Regulation Expert, Aneel | Gadner Vieira - Executive Officer, Utilities and Energy Solutions, IBM Brasil | Gustavo Rabelo - IBM Brasil

Amplifying Bilateral Investment for Innovation

Business/Technology: Investment and Venture Capital for Innovation

The internationalization of Brazilian companies in recent years has created new investment opportunities and the expansion into leading developed markets like the United States.

Brazil's increasingly robust economic ecosystem is attracting an increased number of U.S. companies and investors. However, those making investments in Brazil still wrestle with a variety of uncertainties including the sectors most adept for investment and how to operate most effectively within Brazil's financial system. Similarly, strategies to promote efficiencies in capital flows between Brazil and the U.S. are being created and redrawn.

The Mini-Learning Laboratory on Investment and Risk Climate for Innovation brought together executives from the two countries to answer these questions and discuss solutions to these challenges.

Participants quickly pointed to important trends in the Brazilian market - the diversification of risk capital from the U.S. to new industries and sectors and the emergence of a stronger domestic venture capital industry.

A survey by Fundação Getulio Vargas (FGV), revealed that venture capital funds grew more than 50% over the last six years. This new reality has attracted the attention of investors from the United States and throughout the world.

Another goal of the dialogue was to identify and discuss the opportunities and challenges faced by entrepreneurs and investors in both countries, particularly in respect to conducting business in the other country. The meeting also aimed to catalyze business connections, present projects and to discuss specfic investment policies in both nations.

Ronald Dauscha (1) co-chaired the debate, which covered not only the greater intensity of the flow of investments between the two countries, but also the diversification of sectors that have become targets for investors. Michael Nicklas (2), Director of Associal Smart Ventures and Eduardo da Costa (3), Director of Finep, took part in the workshop

Participants in the mini Learning Laboratory were also invited to present proposals and strategies to specifically raise early stage investment and funding to enable M&A activity in the technology sector in Brazil.

Additionally explored were potential initiatives, projects and business best pursued in partnership between Brazilian and American investors. Within this topic, the round table analyzed the current climate for investment, promotion of entrepreneurship and creation of new companies through the lens of: cross-border agreements and stimulating innovation.

Early in the discussion participants recognized the prevalence of mergers and acquisitions to facilitate expansion into global markets.

However, they concluded that to a great degree the success of cross-border agreements depends on the quality of the processes adopted. They also noted that cultural aspects of the two countries must be considered in when entering into these negotiations.

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In the environment forged by globalization, mergers and acquisitions are one of the most important mechanisms for companies' growth. But cultural aspects must not be ignored in processes involving different countries, as the discussants highlighted

Representation of Brazilian companies throughout the world

A challenge that must be overcome for Brazil to become a major international player is to increase the international presence of Brazilian products and services, especially from high value added manufacturing.

Between 2002 and 2008, Brazil's share of the foreign market increased greatly. From U.S.$ 60 billion in 2002 to U.S.$ 198 billion in 2008, Brazil's share of world exports increased from 0.68 percent to 1.26 percent.

In addition to this, Brazil is the main destination of Foreign Direct Investment (FDI) in Latin America and currently fourth in the world. Total FDI in 2009 reached U.S.$ 400 billion, a figure approaching China's, U.S.$ 473 billion.

The shipbuilding industry, practically extinct at the beginning of the century, exported U.S.$ 9 million in 2002. By 2008 the figure had grown to U.S.$ 1.5 billion. During the same time period, pharmaceutical industry exports increased 22.4 percent per year, electric equipment industry exports grew 26.2 percent and exports of medical, optical and precision instruments grew 16.3 percent.

In 2008, 43 percent of Brazilian exports of manufactured goods went to Latin America, while 17 percent went to the United States and 19 percent to the European Union.

The Brazilian government, through its export agency Apex-Brazil, is helping Brazilian multinationals to expand their operations into different markets around the world, focusing on South-South trade with other developing countries.

Brazilian enterprises are increasingly active abroad. The chart below illustrates leading firms from a variety of industries and demonstrates the reach of today's Brazilian multinationals. Not included below are, a number of other, smaller scale companies also that operate overseas successfully.

In 2009, there were almost 22 thousand Brazilian companies that export. Significant is the percentage of exporters that can be classified as a small-to-medium sized enterprise (SME). At 75.8 percent, they comprise of only 6.5 percent of total export value and possess substantial room for growth.

Brazil is Latin America's largest international investor. In the 1990s Brazilian FDI was U.S.$ 1 billion per annum, on average. Between 2003 and 2008 this average increased to U.S. 11 billion a year. Brazilian outward FDI stock recently reached the U.S. 158 billion mark.

This advance is mostly due to acquisitions of companies abroad. In the first half of 2010 alone, 59 mergers and/or acquisitions were announced, and transactions actually put in place added up to R$ 39.5 billion in the purchase of assets abroad. Gerdau, Mafrig and JBS Friboi are examples of Brazilian groups participating in such transactions.

Global presence

RANDON
1st manufacturer of trailers and semi-trailers in Latin America

AMBEV/INBEV
The world's largest brewery

VALE
Largest Brazilian multinational company and 2nd largest mining company in the world

GERDAU
8th largest steel producer in the world

MARCOPOLO
A share of 7% in the global production of bus bodywork and components

EMBRAER
3rd largest aircraft manufacturer in the world

PETROBRÁS
8th largest company in the world in market value

NATURA
A 13.8% share in the global HP&C market, growing at 2.3x the market average

TOTVS
8th largest software company in the world

JBS - FRIBOI
1st company in animal protein production

Findings and Conclusions

Elevated levels of M&A and investment activity between entities of Brazil and the United States will depend largely on the development of coordenated strategies between the public and private sectors of both nations. In the view of the participants, this cannot exist without better integration of Brazilian and U.S. taxation policies. Also recommended were investments in advertising and events that bring together investors and entrepreneurs.

An easily executed recommendation was the translation of the website www.venturecapital.gov.br into English and the consolidation of relevant information about investments in Brazil into a multilingual portal instead of distributing information in different websites.

The acquistion of talent does not guarantee the output of innovative ideas nor subsequent products and services. An ecosystem supportive of innovation must coincide with a developed culture of risk taking and entrepreneurship.

To be a leader in this area, Brazil must overcome existing challenges and make improvements to its current system. The participants in the Mini-Laboratory stressed the need to shorten the time required to open and close companies in the country, a matter worrying entrepreneurs and making possible failure even more traumatic. Additionally, labor and tax laws work against entrepreneurship and innovation.

While increased angel investment was noted as necessary in Brazil, participants in the Mini Laboratory called for increased managerial involvement from these investors in Brazil. A zero interest rate policy that is currently offered by the Brazilian Innovation Agency to attract angel investment was identified as a good practice that should be effective in raising early stage development.

These recommendations are applicable to growing investment opportunities in the energy, health, smart agriculture, education and e-commerce sectors, as well as possibilities stemming from events such as the upcoming World Cup and Olympic Games.

International sports mega-events, such as the 2014 World Cup and the 2016 Olympic Games, are investment opportunities for Brazil and the United States.

FACTSHEET

Co-Chairpersons

Ronald Dauscha - CEO, International Innovation Center (C2i) | Michael Nicklas - Founder and Managing Director, Social Smart Ventures

Participants

Michael Ford - Chief Operations Officer - 2ergo | Fariba Nazemi - Senior Vice President – InnoVest Group | Ted Rogers - Partner, PPI Ventures | Miguel Abuhab - CEO, Neogrid | Alan Canzano - Administrative Director, Cronus Partner | Claudio Furtado - Director, Gvcepe (Getulio Vargas Foundation Research Center on Venture Capital and Private Equity) | Lucas Geiger - Partner, ElArea | Wilkins Marcelo Machado, C2i - International Innovation Center | Carlos Pinto - CEO, Bematech | Wellington Machado - CEO, Neogrid | Fariba Nazemi – Senior Vice President, InnoVest Group

Expats deepen Brazil's connection with the United States

Brazil Diaspora

Senior Brazilian professionals living and working in the United States were invited to join the "Brazil Diaspora" roundtable discussion.

These Brazilian professionals, scientists, researchers and executives that reside in the United States are now connected to a virtual network to exchange information and contribute to the processes of technological development, innovation and entrepreneurship in Brazil.

Participants discussed best practices for creating the Diaspora's Virtual Network. Managed by ABDI and developed by the Center for Management and Strategic Studies (CGEE), the network will become part of the Ministry of Science and Technology's Innovation Portal. The Diaspora meeting was essential in assisting with ABDI's primary challenge of identifying all leading senior Brazilian professionals in the United States.

The Diaspora, ABDI and representatives of Itamaraty, Ministry of Science and Technology, Brazilian Agency for Industrial Development (ABDI), Council on Competitiveness (CoC), Brazilian Competitiveness Movement (MBC) and nearly 40 other members of this Brazilian community abroad addressed this challenge.

Brazilian professionals present at the meeting were based mostly on the east coast and work primarily for universities and R&D centers in the United States.

Many are researchers with at least a PhD degree, executive officers in companies with a high technology base (biotechnology, material, space, marine science, IT, communications and semiconductor sectors) or U.S. government employees.

ABDI Director Clayton Campanhola (1) moderated the debate seeking ways to utilize the skills and experience of Brazilians living in the United States to stimulate entrepreneurship and innovation in Brazil. Ambassador André Amado (2), acted as Chairperson

The Diaspora aims to promote innnovation in Brazil through two primary activities - support for technology training and assistance with business plans developed by Brazilian entrepreneurs.

Ambassador André Amado, Undersecretary-General for Energy Affairs and High Technology of the Ministry of External Relations, acted as moderator of the round table. He shared Itamaraty's aim to better inform the Brazilian scientific community abroad of what the national productive sector needs and how they could work in partnership.

"Itamaraty has no lab and no land to sow, but we know how to coordinate, add efforts and bring together creative and ambitious people like you in projects of national interest. We want to use your work to reinforce and rejuvenate the national productive process and increase Brazil's prestige abroad," he stated.

Prior to the dialogue, the participants in the Brazil Diaspora were presented the following ideas for discussion during the conversation:

- Creation of a virtual community, based in the Portal da Inovação (Innovation Portal) to connect Brazilian scientists, researchers, entrepreneurs and executives living abroad, especially in the United States.
- Future actions for the Diaspora to support Brazilian national development objectives.
- Identification and promotion of concrete innovation projects among the academic and entrepreneurial expat communities.
- Leveraging the experiences of the Diaspora to promote innovation in Brazil
- Challenges and barriers that stand in the way of meaningful engagement between the Diaspora and the public and private sectors of Brazil.
- Expected support from the Brazilian government and its agencies to the efforts of the Diaspora.
- The role of United States intellectual property law in inhibiting the actions of the Diaspora.
- Opportunities and challenges for Brazilian technology firms seeking to make investments in the U.S. and obtain public listings on U.S. stock markets.
- Promoting joint ventures and angel investment by U.S. firms in Brazil
- Incorporating the findings of the Diaspora into Brazilian government's policies to promote an ecosystem in Brazil that attracts investment, new businesses and R&D.

The aim of the Diaspora Virtual Network housed within the Portal da Inovação is to identify opportunities for partnership

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Next steps

After a two-hour discussion, participants of the round table approved the creation of a Diaspora Network Community in *Portal da Inovação*. This community will be used to identify and promote partnerships between members of the Diaspora and Brazilian entrepreneurs.

Participants also recommended the inclusion of existing related Brazilian expat networks into the Diaspora Network Community.

The Diaspora recognized the utility of the Innovation Learning Laboratory model and its ability to link members of the U.S. and Brazil business communities.

The Diaspora will communicate to the Brazilian government the need to make available on the internet clear outlines of Brazilian policy to support investment and innovation.

Representatives of the Brazilian government expressed their commitment to implementing the recommendations of the Diaspora and invited the group to submit further ideas that foster better relations between the Diaspora and private sector.

Participants were also invited to take part in programs already in place by the Diaspora, including the provision of advice to Brazilian companies interested in starting businesses in the U.S., and the integration of Diaspora members into the official development agenda of Brazil.

ABDI made a commitment to the Brazilian Diaspora project to coordinate the virtual community and to serve as a conduit to the various members of the Diaspora.

FACTSHEET

Co-Chairpersons

Ambassador André Amado - Undersecretary-General for Energy Affairs and High Technology of the Ministry of External Relations, MRE | Flávio Grynszpan – COO, Brazil Diaspora Network, LLC

Moderator

Clayton Campanhola | Director, Brazilian Agency for Industrial Development, ABDI

Participants

Counselor Ademar Seabra - Head of the Science and Technology Division, Ministry of External Relations, MRE | Counselor Everton Lucero - Head of the Science and Technology Sector, Brazilian Embassy in Washington | Larissa Querino - Leader of the US-Brazil Innovation Project, Brazilian Agency for Industrial Development, ABDI | Marcio Miranda - Executive Director, Center for Management and Strategic Studies – CGEE | Maria Eliane Silva - Science and Technology Specialist, Brazilian Embassy in Washington | Alcione A. Sturmer - Director, IT, Verizon | Andrea Marques - NIH | Bernardo Scheinkman - TIBRAX | Carolina Marangon Jardim - UGA/CNPq | Claudio Joppert - Stefanini | Daniel Mucida - NYU/La Jolla Inst. Allergy & Immunology | Duília F. de Melo - Goddard Space Center/Cathol. University | Eliseu de Oliveira - Lombardi Comprehensive Cancer CT | Fabio Tucci | Flavia Alves - Legal Advisor, Telecommunications MNGT Group | Juliana M. Ruzante - University of Maryland | Ladislau Martin Neto - Labex/Embrapa/ARS/USDA | Letícia Philips - Government and Institutional Relations, UNICA | Leila Zurba Ribeiro - MITRE Corporation, Center for Advanced Aviation System Development | Luigi Antonio Zappa - Washington Hospital Center | Marcio A. Oliveira - University of Maryland | Mauro Moraes - US Department of Agriculture / Plum Island | Pedro A. L. Costa - Seattle-NY-Sao Paulo | Ramon P. de Paula - NASA HQ | Rania Sabbagh - Executive Officer, Business, Stefanini | Sonia Bloomfield - Montgomery College | Vivaldo Andrade dos Santos - Smithsonian | Wagner A. Vendrame - University of Florida/IFAS | Wilson Fonseca - Labex/Embrapa/ARS/USDA

Legal environment advances and facilitates entrepreneurship

Innovation, Law and Development Symposium

The Innovation, Law and Development Symposium examined the role of the legal environment in Brazil and the U.S. in advancing and facilitating of innovation. Participants discussed subjects such as expansion and improvement of public-private partnerships, controversy-solving mechanisms, regulation of financial entities and international treaties. In driving this dialogue, the symposium aimed to identify and explore a legal framework that stimulates innovation, entrepreneurship and the commercialization of ideas in both Brazil and the U.S.

Kicking off the symposium, Minister Ellen Gracie Northfleet of Brazil's Federal Supreme Court (STF), the keynote speaker, detailed advances in the Brazilian legal environment regarding business and investment.

On the U.S. side, Judge Peter J. Messitte, outlined a number of key issues currently facing the U.S. judiciary, while also highlighting the importance of strengthening relations between the two countries. During the second part of the symposium, participants expanded upon the opening remarks to create a broader debate.

It was noted that Brazil has taken deep strides in the last 20 years to develop a more robust legal system. Constitutional Amendment 45/2004, which created the General Effect and Binding Precedent, has significantly reduced the number of cases taken to court.

These improvements have led to greater efficiencies across a number of areas - fostering innovation, developing patents, recognizing and protecting intellectual property and creating helpful regulation.

A ministra do STF Ellen Gracie (1), ao lado de Deborah L. Wince-Smith (2), foi uma das palestrantes do simpósio. Participaram da discussão o juiz federal norte-americano Peter Messite, o ministro Carlos Henrique de Abreu Silva(5), do Itamaraty, o presidente do Inpi, Jorge Ávila, Paulo Sotero (3), do Wilson Center.

In her opening remarks, Minister Northfleet provided an overview of the contemporary legal framework in Brazil as well as recent advances that have created a more friendly business climate.

In her view, this new scenario has created opportunities for Brazil and the United States to work closer together to develop a cross-border system that elevates innovation and entrepreneurship in both countries.

Gracie stressed that the adoption and implementation of changes introduced by Constitutional Amendment 45/2004, especially those that improved the processes of the legal system, and increased the efficiency of the STF.

General Effect is a example of these changes - a procedural instrument that enabled the Supreme Court to limit and screen the number of cases heard. This was essential for Supreme Court ministers, who were overwhelmed by the huge number of lawsuits received.

Prior to the implementation of General Effect, it was not uncommon for a Supreme Court minister to have over 10 thousand cases a year to examine, restricting proper application of the law. Since 2007, the flow of lawsuits has been diminishing significantly, now 62% less than before the measure was adopted.

Ellen Gracie recalled that the United States Supreme Court once faced similar conditions in the past but adopted ammending measures. The Judiciary Act of 1789 introduced the Writ of Certiorari as a measure to stem the flow of appeals to the Court while the Judges' Bill of 1925 increased the discretionary power of the United States Supreme Court, establishing that only appeals of significant importance for the country would be accepted.

In Brazil, the minister explained, it was imperative to implement such discretionary power. General Effect served to accomplish this and provided a filter for the STF to determine the relevance of every case, thereby ensuring the court only see cases that truly require the attention of a supreme legal body. This process represents the introduction of the doctrine of Stare Decisis in the Brazilian system.

Minister Gracie also stressed the adoption of Binding Precedent in Brazil - the application of decision reached by the Supreme Court to all lower courts.

Binding Precedent has accelerated the pace of the Brazilian system. To date, the STF has issued 30 Binding Precedents. E-filing is another initiative that has led to significant gains in efficiencies. Computerized procedures now allow legislators to monitor the evolution of cases, issue subpoenas and transmit documents.

Federal Law 12019/2009 authorizes STF and STJ (Superior Court of Justice) ministers to delegate certain powers to other judges, known as "instructors". Minister Gracie emphasized that all these initiatives have improved the efficiency of the Brazilian judicial system.

The adoption of Binding Precedent was highlighted by Minister Ellen Gracie. ABDI President Reginaldo Braga Arcuri and United States Federal Judge Peter Messitte co-chaired the meeting

The Strength of Brazilian Democracy

Brazil is the world's fourth-largest democracy, behind only India, the United States and Indonesia, with 190 million inhabitants and 127 million voters. With a totally electronic electoral process that is, considered to be the most modern in the world and modernized e-government services, Brazil has over the last 20 years undergone enormous institutional advances that prepare it for the challenges of the 21st Century.

In the public sector, advances in e-government have been comprehensive. Nearly 99% of Income Tax returns are filed through the internet, and social benefits granted by Social Security can be applied for and monitored online.

The Brazilian judicial system has also moved online, making available electronic filing and processing. Today, nearly 90% of companies with more than 10 employees make use of at least one e-government service.

The creation of a number of regulatory bodies has helped secured democratic institutions and practices, such as the Brazilian National Electric Energy Agency (Aneel), the National Telecommunications Agency (Anatel), the National Petroleum Agency (ANP) in the crude oil and gas sector, as well as the modernization of entities such as the Brazilian Institute of Metrology, Normalization and Industrial Quality (Inmetro), the Funding Body for Studies and Projects (Finep) and the National Bank for Economic and Social Development (BNDES).

With such initiatives the country seeks to strengthen its institutional structure to support continued economic growth in the coming years.

The Brazilian election process is fully electronic and considered the most modern in the world

Building Innovation Potential

Inmetro had six PhDs in its workforce in 2001 - a figure that reached 300 in 2011. Inmetro is now present in all Brazilian states through its network of laboratories.

In order to ensure improvements in certification and metrology processes, the Institute develops technology, new measuring methods and lab equipment to attend to the county's industrial needs.

Finep, the body responsible for supporting innovation and R&D in the country had a budget of just over R$ 250 million in 2002. In 2009 reached R$ 3.8 billion. BNDES now has annual dispursements that are greater then the World Bank.

BNDES's disbursements in 2009 totalled R$ 137.3 billion, a substantial increase from the organization's 2001 total of R$ 25.7 billion. Inter-American Development Bank outlay in 2009 of US$ 15.9 billion the World of US$ 58.8 billion.

Brazil is also building a increasingly more robust ecosystem for innovation. There are 400 incubators and roughly six thousand companies engaged with innovation projects now in the country. With the country's focus on the issue of innovation and promising economic growth, Brazil is creating new R&D centers.

GE recently announced that it will set up its fifth R&D center in Brazil, bringing to the country part of the US$ 6 billion it invests annually in R&D. Google, GM, Nokia and Fiat have also announced new investments in R&D in the country. Motorola has invested in developing Brazilian talent by working in partnership with 15 universities.

IBM also has plans to establish a R&D center in the country, which will employ 100 researchers in the next five years, in addition to support staff.

The expansion of the Brazilian market and and development of innovative infrastructure, supporting private equity and venture capital industries have concurrently matured. In 2008, PE and VC firms committed over US$ 27 billion, in over 470 companies in sectors vital to innovation: biotechnology, energy, agribusiness and IT. Nearly 58% of these investments are sourced from foreign funds while 24% belong to Brazilian pension funds.

Trends indicate that Brazilian investment firms will comprise an increasing percentage of these investments in the years to come. National pension funds are now contribute 50% of new investment. Today the private equity market is growing 50% p.a. and is equivalent to 1.7% of GDP.

Next steps

Recommendations that emerged from the Symposium concentrated upon broad initiatives to create a legal climate in Brazil and the United States that contributes to innovation and increased commerce between the two nations. Participants suggested setting up a task force to coordinate involvement of government bodies in the two countries in connection with the following points:

- Commerce and intellectual property.
- Coordination of infrastructure of environmental laws and licensing for the biotechnology sector.
- Exchange of professionals for technological and academic cooperation
- Development of a common agenda to investment in two countries.
- Expansion of educational opportunities.
- Creation of a course to study the regulatory framework for industrial matters.
- Agreements governing tariffs, bilateral investment, co-production of movies and cooperation in the area of tourism to third countries.
- Stimulus for cooperation on biofuel technology and regulatory environment in the two countries.

FACTSHEET

PART I – EXPOSITIVE

Co-Chairpersons

Reginaldo Braga Arcuri - President, Brazilian Agency for Industrial Development (ABDI) | Deborah L. Wince-Smith, President and CEO, Council on Competitiveness (CoC) | Ira Shapiro - Partner, Greenberg Traurig LLP

Speakers

Minister Ellen Gracie Northfleet - Federal Supreme Court of Brazil (STF) | Peter J. Messitte - U.S. Federal Judge | Minister Carlos Henrique Moojen de Abreu e Silva - Director, Department of US and Canada and Inter-American Studies, Ministry of External Relations (MRE)

Commentator

Gary Horlick - Lawyer

PART II - INTERACTIVE

Chairperson

Welber Barral - Foreign Trade Secretary, Ministry of Development, Industry and Foreign Trade (MDIC)

Commentator

Gary N. Horlick - Partner Law Offices of Gary N.Horlick

Moderator

Paulo Sotero - Director Brazil Institute Wilson Center

Participants

Ashley Brown - Harvard Electricity Policy Group, Harvard University | Robert Cottrol - Harold Paul Green, Research Professor of Law, The George Washington University | William P. Kelly – Vice-President, National Foreign Trade Council | Abbott "Tad" Lipsky Jr. - Partner, Latham & Watkins | Leticia Lewis - Director, US Chamber of Commerce | Bruce Zagaris - Berliner, Cocoran & Rowe LLP | José Augusto Fernandes - Executive Director, National Confederation of Industry (CNI) | Adolfo Jimenez - Partner, Holland and Knight | Antenor Madruga - Partner, Barbosa, Mussnich & Aragão Advogados, BM&A | Jorge de Paula Costa Ávila - President, Brazilian Institute of Industrial Property (INPI) | Minister Walton Alencar Rodrigues - Brazil' Federal Court of Accounts (TCU) | Sergio Suchodolski - Consultant, Continental Grain Company

2ND U.S.- BRAZIL INNOVATION SUMMIT

DAY 2 – SEPTEMBER 21, 2010

The second day of the U.S. - Brazil Innovation Summit was divided into a series of five panels. Each of these dialogues was designed to identify areas for bilateral cooperation in addressing five global grand challenges that will greatly effect both nations and the world in the 21st century.

Through involvement of leading companies and leaders from both nations that are actively involved in these areas, opportunities for bilateral strategic partnerships emerged. The over 400 leaders from the private and public sectors of Brazil and the United States were brought together to identify the policies and practices that promote innovation based growth in both nations.

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Innovation is driven by human capital: qualified and creative people who are capable of developing new ideas and deploying them in the marketplace

Brazil and the United States: engaged in an agenda for prosperity

The 2nd U.S.- Brazil Innovation Summit was another successful experience in the effort to bring together the two countries to raise innovation based growth in both nations.

The 2nd US-Brazil Innovation Summit - Partnerships for Prosperity in the 21st Century - Brought together nearly 400 representatives of companies, governments and academic and scientific communities in Brazil and the United States. Two days of targeted dialogue and exchanges of information and experiences supported the objective of strengthening strategies that support innovation, spur economic activity, foster technological cooperation and increase the visibility of initiatives in the two countries.

The Summit, hosted by Georgetown University at its campus in Washington DC on September 20 and 21, 2010, was jointly presented by ABDI, CoC and MBC. The Summit marked a milestone in the three organization's long standing initiative to align the innovation ecosystems of the two largest economies of the western hemisphere.

The Summit was also part of a larger initiative to place Brazil and the United States in a position of leadership and prosperity in the 21st Century, specifically in critical areas that will appear prominently in the 21st century. The aim is to create a concrete map of policies and actions to redefine the manner in which nations stimulate innovation, conduct research, do business and create jobs.

According to ABDI President Reginaldo Braga Arcuri, one of the Summit's primary objectives was to help construct innovative and more competitive economies for a more sustainable and fairer world. To do so, a new infrastructure needs to be created that supports these activities and stimulates new businesses and jobs.

"Besides talented and well-qualified people, countries need infrastructure, legal framework, telecommunications, research funding, and industrial production. We have not only brought the right people, we have brought the people who will continue efforts for the initiatives to advance," Arcuri stressed.

In her opening address, CoC President and CEO Deborah L. Wince-Smith recalled early conversations to encourage governments and the private sector to place innovation at the center of discussions. "Two years ago, when we met to discuss what action to take, we decided to be innovative, accept the risk and do something that had never been done before. The outcome was the creation of the Innovation Learning Laboratories."

Ms. Wince-Smith stressed that the second summit ushers in a new phase: "Observing the five global issues that challenge and transform us and create strong prospects of prosperity."

Georgetown University President John J. DeGioia continued this sentiment, adding that the Summit was an opportunity to create innovative solutions and models that enable growth, in addition to molding the conditions that will offer prosperity to all.

Samuel R. Allen, Chairman and CEO of Deere & Co., Chairman CoC, called the event a milestone in the partnership between CoC, ABDI and MBC, because it involved hundreds of leaders from the two countries in search of a common objective.

Brazil's Minister of Development, Industry and Foreign Trade, Miguel Jorge, stressed that the Summit contributed significantly to establishing promising partnerships and constructing an agenda promoting and strengthening innovative activities to be shared by Brazil and the U.S.

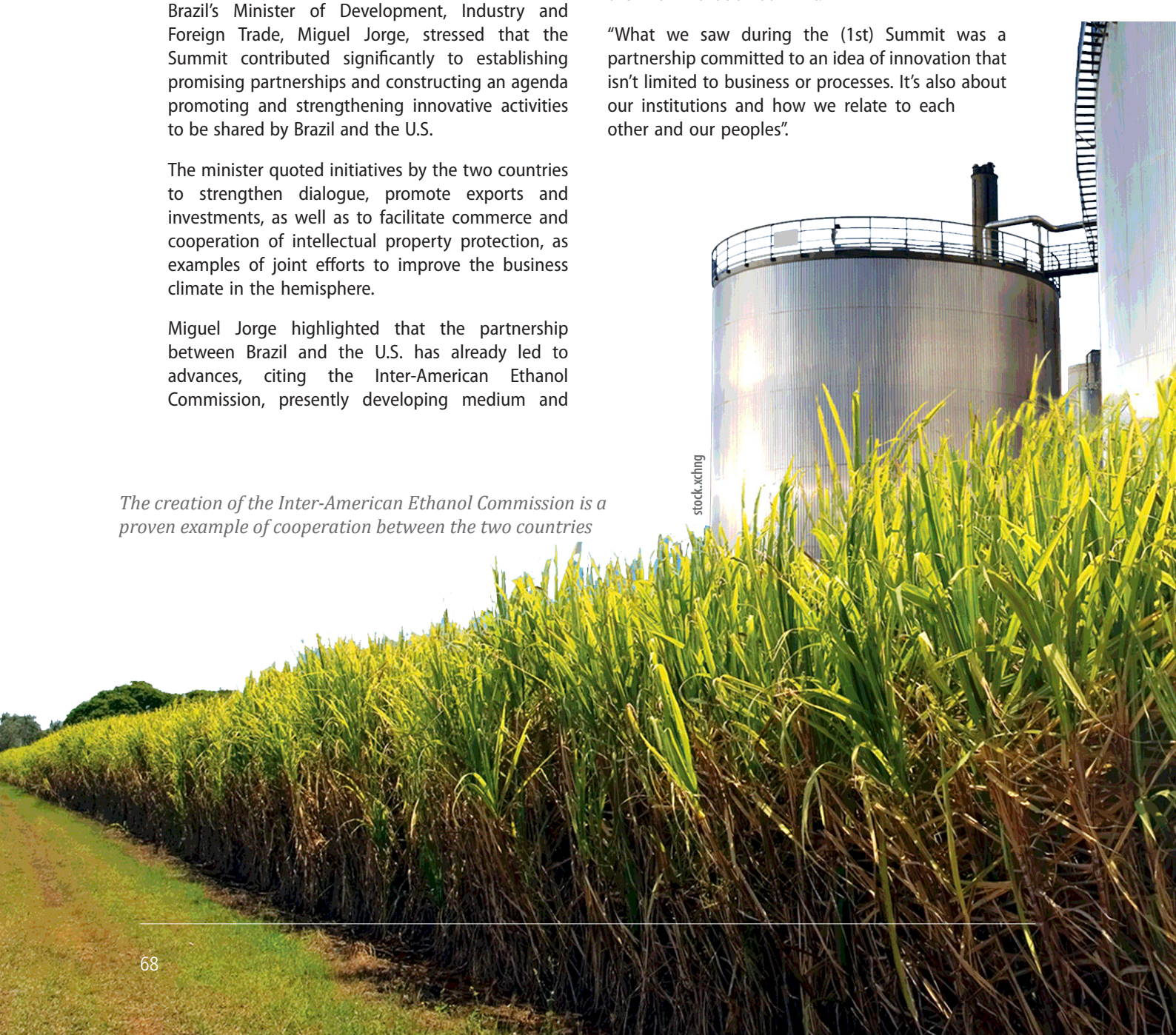
The minister quoted initiatives by the two countries to strengthen dialogue, promote exports and investments, as well as to facilitate commerce and cooperation of intellectual property protection, as examples of joint efforts to improve the business climate in the hemisphere.

Miguel Jorge highlighted that the partnership between Brazil and the U.S. has already led to advances, citing the Inter-American Ethanol Commission, presently developing medium and long term strategies to increase production and consumption of biofuels.

"This initiative has already promoted partnerships for technological R&D involving practically all the countries in the American continent. Inmetro and NIST have advanced in examining the characteristics of biofuels to set internationally compatible standards of biodiesel and ethanol. We want to make these fuels marketable as global commodities," said the minister.

U.S. Ambassador to Brazil Thomas Shannon emphasized that the relationship between Brazil and the U.S. is increasingly less about governments and more about the two societies, which in his view exemplifies the importance of a gathering such as the 2nd Innovation Summit.

"What we saw during the (1st) Summit was a partnership committed to an idea of innovation that isn't limited to business or processes. It's also about our institutions and how we relate to each other and our peoples".



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The creation of the Inter-American Ethanol Commission is a proven example of cooperation between the two countries

MBC President Erik Camarano noted that Brazil and the United States possess the ideal elements to stimulate strong cooperation between the two societies and cultures, primarily because Brazil is currently undergoing a revolution in terms of public administration and private sector competitiveness.

Camarano considers public-private partnership vital, explaining, "We need these partnerships so we can help each other and benefit from the best practices in the private sector and the expertise of academia in both countries."

Deputy U.S. Trade Representative Ambassador Miriam Sapiro, added that "initiatives to bring together and strengthen economic development by means of innovation will always have the support of the United States government".

Sapiro highlighted that the U.S. has always considered Brazil a valuable partner and that the two governments share the same objectives, including a wish to expand economic growth and opportunities existing in the two countries by promoting democracy, trade and regional stability.

Sapiro also stressed that the U.S. seeks to take advantage of Brazilian leadership in the developing world to establish a partnership that promotes the openness of markets to trade and investment.

José Augusto Fernández, Executive Director of the National Confederation of Industry (CNI), emphasized the proritization of innovation for Brazil's manufacturing industry. "Our successes, from the aeronautical industry to agriculture, are the result of education and innovation. For this reason, I wish to emphasize the importance of awakening interest in innovation."

Brazil's Minister of Development, Industry and Foreign Trade, Miguel Jorge, United States Ambassador to Brazil Thomas Shannon, Deputy United States Trade Representative Ambassador Miriam Sapiro and Georgetown University President John J. DeGioia gave remarks during the opening session of the 2nd US-Brazil Innovation Summit

Energy and Water Are Everything. How do we meet global demand and manage critical resources?

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Energy and Water Are Everything. How do we meet global demand and manage critical resources?

More than 1 billion people around the globe do not have access to drinking water. A further 2.5 billion do not have regular access to water. Within 40 years the world's population will increase by over 3 billion and the need for water and energy will be even greater.

These data framed the Innovation Summit's first panel discussion that examined the necessity to provide increasing amounts of energy and water while preserving the earth's critical resources. The panel brought together executives from the oil, energy, technology and aerospace industries, as well as academics and experts of both nations, to discuss the innovative ideas their organizations are developing to overcome this challenge and to identify new ways for Brazil and the United States to partner and lead on the issue.

These initiatives range from efforts to power airplanes using biofuels and standardizing "drop in" aeronautic alternative fuels to reducing dependence on water in agriculture and the development of technology to increase yield in producing ethanol from sugarcane.

"The Summit has brought together people whose hands are on the levers of technological change, who can make the difference for society," stated Executive Chairman, Manifest Energy, Alexander "Andy" Karsner, the panel moderator, at the start of the session.

Mr. Karsner also highlighted the key role already assumed by Brazil and the United States in the field. "There are no two countries more important than the United States and Brazil regarding water and energy. Together, the two countries constitute 90% of the global supply of alternative liquid fuels to substitute petroleum."

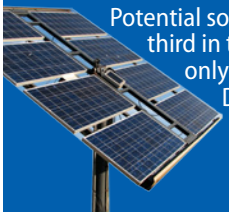
Panelist Ray O. Johnson, Senior Vice President and Chief Technology Officer, Lockheed Martin Corporation, warned about the impacts of rapid urbanization and climate change on the planet's supply of water, and advanced an idea that became a consensus among the participants of the panel: governments and private initiative will have to form partnerships to solve issues regarding policy and regulatory matters that are currently hampering trade and exchanges of information between countries.

General Director of Petrobras' R&D Center, Carlos Tadeu da Costa Fraga, discussed the shortage of water affecting that one third of the world's population, underlining the urgency for natural resources to be used more efficiently.

Putting into context the scope of increased demand for energy, Fraga cited estimates of usage increases of 10 million barrels a day within a decade for countries such as China, India and Brazil. For this reason, Fraga stressed the necessity for Petrobras to increase production in line with the rises in demand.

Vale Soluções em Energia is working to make ethanol usuable as a direct source for generating energy

Wind and solar potential makes for huge investment opportunities



Potential solar power in Brazil is third in the world, second to only California's Mojave Desert and Spain

Imagens: stock.xchng

For this reason Petrobras is expanding it's sourcing of oil and gas, building upon the company's years of experience in deep-water exploration.

"We know we have to go further and that the huge discoveries in Brazil will help sustain the demand for petroleum, both in Brazil and in other countries," he stated.

Fraga argues that although there are still undiscovered oil and gas reserves, it is necessary to change the world's energy supply mix, which Brazil has accomplished successfully by intensifying its ethanol program.

Petrobras' enagagement in this effort, he says, is demonstrated by the recent creation of Petrobras Biocombustíveis - a unit concentrated on developing new energy solutions. specifically for this segment.

Priorities

However, until mass production and adoption of alternative fuels occurs, the world still needs fossil fuels.

As new energy sources contradiction in continuing to exploit fossil fuels while investing in alternative energy sources. "We need fossil fuels to keep the lights on during the period of transition to a new energy supply mix."

Establishing priorities for investment in the energy field cannot be left to the market alone. Boeing's Managing Director, Environmental Strategy, Billy Glover, noted that governments must often work in tandem with challenges of this magnitude and supercede the natural direction of localized markets.

"It would be chaotic if we introduced new technologies and options for fuels without governments having defined priorities," he warned. In his view, investments should be steered toward established priorities, so as to ensure an environment where there is both cooperation and competition between companies. "It's a combination of both evolution and revolution," he stressed.

James Pessoa, CEO, Vale Soluções em Energia (VSE), seconded the concept of evolution and revolution mentioned by the Boeing executive. The company, which started operations in late 2007, is the result of a partnership between Vale, the second-largest mining concern in the world and National Bank for Economic and Social Development (BNDES).

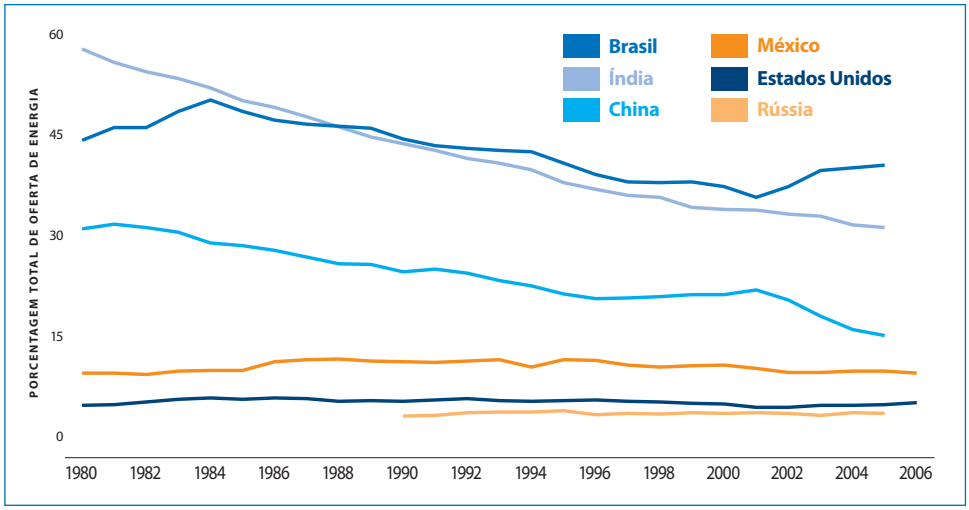
Pessoa highlighted the organization's objectives to develop solutions using biofuels and other kinds of alternative fuel. The firm is experimenting with clean energy production equipment that simultaneously produces desalinated water.

Another project currently in development by its technicians enables the use of ethanol for heavy cargo vehicles, which are extensively used in Brazil. "We have some 12 to 13 million cars running on ethanol in Brazil, but we have no heavy vehicles using this fuel," he explained.

In another example of VSE innovation, Pessoa outlines the firm's endeavors to demonstrate that ethanol can be used as a direct source for generating energy, not only for transport. The company installed a lighting system running on ethanol in one of the booths at Brazil's 2010 Automobile Show to exemplify the potential.

Another experiment consists of developing jet engines capable of running on ethanol without additives. "We've been successful; we managed to make the first unit run on ethanol," he exclaimed. In the Pessoa's view, the nature of Vale Soluções em Energia's new and independent structure

Contribution of renewable sources to energy supply 1980-2006



Source: Council on Competitiveness, based on OECD data

> ***"No two countries are more important than Brazil and the U.S. regarding the water and energy."***
>
> *Alexander "Andy" Karsner, Executive Chairman, Manifest Energy*

frees the company from pressure stemming from old failures, providing more freedom to take risks on innovative ideas.

Boeing's Billy Glover added that his firm has also developed biofuel projects for jets, and is working with Brazil to advance in this field.

According to Glover, the only requirement for jet fuel based on biofuel is that it must not freeze at high altitude. He stressed the "enormous progress" made in this field and the superior quality of new biofuels as compared to petroleum.

Glover also mentioned that Boeing has worked in partnership with Brazilian air companies such as Gol, Tam and Embraer, as part of the international group of "Sustainable Aviation Users."

The group's objective is to ensure that harmonized policies are developed for biofuel use in commercial aviation. "To the contrary we'll see biofuels being used for other ends, and we'll have no clean energy solution for aviation. We want to make sure this won't happen," he stated.

The Boeing executive also emphasized that the company does not intend to be active in the biofuels sector or compete in the segment. The group's actions are intended to accelerate the proliferation of biofuel for aviation worldwide.

In Glover's opinion there is no better place than Brazil to carry out this work. "If we're going to keep on building vehicles for air transport, they're going to need fuel, clean fuel, with low carbon emissions, complying with all the requirements to remain viable in the long term," he concluded.

James Pessoa, Billy Glover, Djamil Barbosa, Alexander "Andy" Kasner, Carlos Tadeu da Costa Fraga, Ray O. Johnson, James Milliken e Alan Shaw (from left to right)

Estimates indicate that the number of vehicles worldwide is going to double by 2030. According to Codexis CEO Alan Shaw, as long as electric vehicle technology remains expensive and unaffordable for most of the population, particularly in emerging countries, biofuels will be the best option to meet growing demand.

Shaw warned of the possible arrival of an energy crisis in the transport sector and urged the production of biofuels on a massive scale. "Nuclear, wind, solar energy are not going to help the transport sector. There's a real need for biofuels and Brazil is in the center of this industry."

From Shaw's perspective, sugar is the new "light sweet crude" and the partnership between Codexis and its Brazilian partner Cosan is exemplary of the Summit's ideals - pairing Brazilian expertise in sugarcane and ethanol production with Codexis' enzyme technology developed in the United States. The elevated production level achieved from this partnership will enable Brazil to export increased amount of ethanol, particularly to Europe.

Shaw steadfast belief in the Brazilian ethanol industry is supported by his view that Brazil remains largely ahead of the remainder of the world in terms of experience, expertise and natural conditions. He estimates production costs in Brazil to be one-half of those of anywhere else in the world and declared, "the fact that Brazil enjoys the best sunlight means maximum conversion of carbon dioxide into sugar" and continued "at this time production is still insufficient to meet Brazilian demand, but there are companies committed to increasing production, and this benefit will reach the United States American taxpayers deserve fuels at low cost."

The Future of Agriculture

Worldwide, 75% of available water is used for agriculture. Estimated growth of world population – another 3 billion people in the coming 40 years, urbanization and entry into the middle class by millions in emerging economies – will continually increase demand for water resources. These trends are making immediate the need to discover ways to produce more food in smaller areas and with less water.

The University of Nebraska is a leading institution examining the effective use of water. Panelist James B. Milliken, President, reminded participants that Nebraska is the state with the greatest access to fresh water in the United States.

Nebraska resides on top of two thirds of the largest aquifer in North America, is the third largest corn producer and second largest producer of ethanol made from corn in the U.S.

The Brazilian Context

Economic growth in the 21st century will be hinged upon a nation's ability to manage water supply and produce clean and sustainable energy. Brazil's access to immense water supplies and current employment of hydroelectric plants offer numerous opportunities for the country.

Today, with its modern regulatory system coordinated by the National Water Agency (ANA) and the National Electric Energy Agency (Aneel), the country is able to manage water and energy resources throughout its territory efficiently.

The Brazilian energy supply mix is one of the world's most advanced, efficient and intelligent. As the only self-reliant energy provider among the world's leading economies with alternative fuel production reaching scale, Brazil is a leader in terms of sources and use of advanced and diverse energy use.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Since 1981 Brazil has avoided emissions of 800 million tons of CO_2 by using ethanol, and studies indicate that the 10% addition of alcohol to gasoline reduces CO_2 emissions by up to 8%. The country is currently the second largest producer of ethanol in the world, behind the U.S., and the world's largest exporter, in addition to being the third largest market for biodiesel.

With the National Bank for Economic and Social Development (BNDES) as the world's largest investor in renewable energy, the country is still advancing in the use of clean energy. In 2008, outlay for clean energy projects totaled to US$ 3.8 billion.

Ethanol serves as complementary energy to water sources, due to its low cost, positive environmental balance and because it is near produced consumption centers. Additionally, ethanol reinforces the safety of the electric system. For every 1,000 MW of energy produced with ethanol, the country saves 4% of the water in reservoirs.

Installed generation capacity is 110 million kw, 69% stems from hydroelectric sources, 25% from thermoelectric sources and the remainder from solar, wind and nuclear sources. From 2002 to 2008, BNDES provided R$ 32.2 billion for 210 projects with an estimated cost of R$ 54 billion.

These investments were for generation, transmission, distribution and rationalization. Estimates indicate additional investments of R$ 98 billion by 2013.

Another significant strength of Brazil's hydroelectric system is an interconnected network that enables connectivity between regional reservoirs that are subject to fluctuations in rainfall.

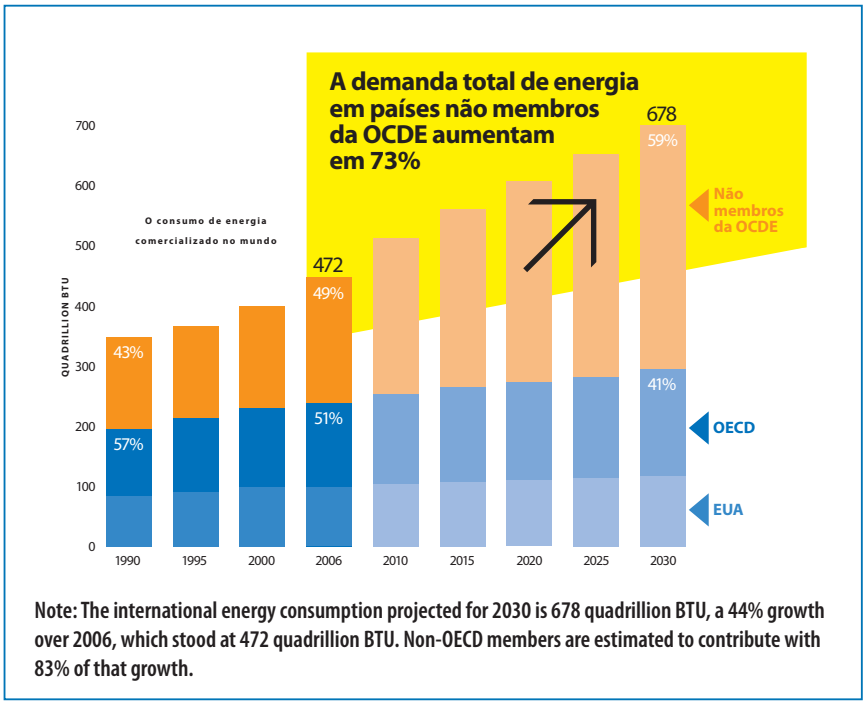
Milliken explained these regional characteristics to illustrate the natural connection between his institution and water use research.

The Water and Food Institute was recently created by the university with the aim of tackling the issue of the use of water for agriculture, especially in developing countries. The Institute was created with a US$ 20 million donation that was matched by the university.

"If we're going to have a satisfactory green revolution, we need better management, better policy and better technology, which will only be possible through public-private partnership," he attested.

This defines the Water and Food Institute's focus: how to foster cooperation between countries and sectors to tackle different issues related to water use, food and safety and energy needs.

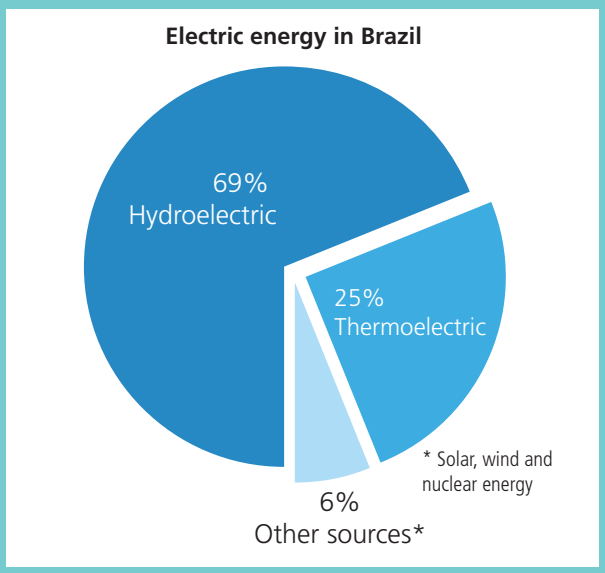
Global Energy Demand - projected increases to 2030



Note: The international energy consumption projected for 2030 is 678 quadrillion BTU, a 44% growth over 2006, which stood at 472 quadrillion BTU. Non-OECD members are estimated to contribute with 83% of that growth.

Source: Council of Competitiveness , based on US Department of Energy data

Brazil's interconnected hydroelectric operation is centrally planned and regulated, allowing the country to make modifications that ensure supply in regions with low generation potential.



In other words, it is a way of transporting water by means of electric transmission wires. This National Interconnected System (SIN) is regulated by Aneel, Chamber of Electric Energy Commercialization (CCEE) and National Operator of the Electric System (ONS).

In its role as a regulator, Aneel's is tasked with boosting competition in the sector and ensuring quality and universal service. Another important entity is CCEE, whose function it is to perform accounting of quantities of electric energy traded and auctions for the purchase and sale of energy (delegated by Aneel).

The mission of ONS is to assess production conditions and demand for electric energy in the country, provide guidance for all energy companies linked to SIN and to increase or reduce production and transmission of energy throughout the day.

In order to improve this system, Brazil is starting to research and invest in smart grids for the distribution network. By allowing greater interaction between energy concessionaires and end users, economy and efficiency in the use of electricity can be increased. Cemig, the leading energy utility of Minas Gerais State has already done research on the subject and Eletrobras is planning future investments in correspondence with sector regulations now being prepared by Aneel.

Given the characteristics of the SIN system in Brazil, the price of water is critical to all energy planning and energy generation decision making. Electricity provision in Brazil is always closely associated with water management.

The President of the University of Nebraska's view is that the initiative will bring Brazil and the U.S. business opportunities. Vale Soluções em Energia is also directing efforts to develop technology that produces biofuels while simultaneously generating clean drinking water based on green energy.

Within this new model, VSE is developing the concept of poly-generation, capable of producing large amounts of energy and water.

"We want to advance a little further with the concept of capture and conservation of carbon for the next five or ten years to generate energy, produce drinking water and a chemical combination of hydrogen and nitrogen to manufacture ammonia. On the basis of this combination with CO2, we'll produce urea," James Pessoa informed the participants.

If the project is successful, it will be possible to produce plants able to tackle the problem of energy, water and fertilizer for food without CO2 emissions into the air. "It's a kind of Holy Grail, but so far nobody has said we can't do it. It's ambitious, but I'm sure that if we have this kind of system we can improve people's living conditions. Wherever there's natural gas but no drinking water the problem can be gotten around, whether in Africa or the U.S."

Pessoa also announced that the enterprise intends to develop a strong partnership with Petrobras to produce water and energy.

Petrobras, in turn, is also committed to reducing water consumption, largely because of the industry's mass usage and the corporation's commitment to enhance its sustainability. "We must produce enough energy to meet society's needs, but we have to do it in an acceptable manner. We must recognize environmental issues and the risks associated with our operations."

Oasis of energy

With 12 watersheds equivalent to about 13% of the planet's surface water reserves, the Amazon basin contains 73% of all Brazil's surface water resources. Unlike most countries, 82% of electric energy generated in Brazil stems from hydroelectric plants. "It's a challenge to maintain this balance," states Eletrobras Technology Advisor Djamil de Holanda Barbosa.

Barbosa recalled that Brazil's GDP was expected to grow about 7% in 2010 and demand for energy between 9 and 10%. "It's a challenge. Today, energy in Brazil isn't a government problem but a market problem. To supply this energy to the country we must have competitive prices."

Barbosa quoted some of Brazil's specific conditions as examples of challenges related to generating and supplying energy in the country, and reminded the participants that the Brazilian system is both large and interconnected. The Amazon region remains disconnected but plans to integrate the region are expected to be completed within two years.

As noted by the Eletrobras adviser, Brazil's great hydraulic potential is in the Amazon region, while the greatest demand is in the South and Southeast. "We have generation at the top of the map and consumption at the bottom, which is a problem."

Water management

Today there are two outstanding programs in Brazil to manage water resources. Pró-Agua, which enjoys the assistance of the World Bank, seeks to strengthen management structure, make infrastructure viable and attract the private sector to public-private partnerships. The other important program is Produtor de Água, whose objective is to reduce erosion and silting of water sources in rural areas, increasing average flow and the quality of water in rivers that are strategic for the country.

Institutional changes to Brazilian water management reflect a change in the government's perception of the country's supply. Until 2001, water was treated as an item for free use and access. However, with growing awareness of issues such as scarcity and quality, the country began to treat water as an economic resource and assigned ANA to begin charging a use-based tariff whose proceeds would control consumption and provide resources for investment in the recovery and preservation of watershed basins.

To assist effective implementation of these programs and help plan use of water resources, Brazil makes use of nationally integrated technology and systems. With 1,075 gauging stations and 981 rainfall stations in the 12 basins and 285 transmission stations, the Hydrological Data in Real Time system collects hydrological information in real time.

Another tool, Sistema de Informações Hidrológicas (Water Information System), uses 4,534 monitoring stations spread out throughout the country to collect information on dimensions, flow, rainfall, evaporation, river profile, water quality and

"It's a distance of over 2 thousand kilometers. We also have growth in the Northeast and the Center-West. We have existence of a rainy season between November to April that must serve the country throughout the year.

In Barbosa's view, the flat rivers (without waterfalls) in the Amazon region create the necessity to implement generation with turbine flow (small reservoirs) instead of conventional methods that use pressure (large reservoirs). He cited this example as opportunities for technological innovation and improvements in the performance of turbine/generator units.

Energy transmission over long distances also offers opportunities for technological innovation, with a reduction of technical losses by using HVDC (high voltage direct current) and HVAC (high voltage alternating current).

Wind energy is another opportunity for technological innovation in the country. As wind intensity in the Northeast of Brazil is greatest from July to December, wind energy can be used to complement hydroelectricity and optimize turbine performance.

Solar energy, says Barbosa, should also be exploited, given that Brazil possesses the third highest solar potential in the world, behind only the Mojave Desert in the U.S., and Spain. "There are opportunities for technological innovation. The field is wide open for partnerships."

Funding New Technologies

James Pessoa of Vale Soluções em Energia, detailed his firm's funding mix - coming from private funds and public entities such as BNDES, Finep and private companies.

"To be honest, so far we have had no trouble convincing people to put up money to support our ideas. We have invested over U.S.$ 360 million in three years and by 2014 we will have invested nearly U.S.$ 1 billion," Pessoa said.

Carlos Fraga, General Director of Petrobras R&D Center, recalled that Brazilian regulations require members of the petroleum industry to invest a portion of their profits into research and development.

Brazilian potential in solar energy can be better exploited

sediment. All these data are used to draft public policy, produce studies, forecast floods and droughts and identify potential for use (energy, navigation, irrigation and sanitation).

Sistema Nacional de Informações sobre Recursos Hídricos (SNIRH – National Information System on Water Resources), with subsystems for planning and management, qualitative and quantitative data, regulation of use, water intelligence, documentary intelligence and geographical intelligence, makes use of the entire array of hydrological data produced in the country to monitor the country's water resources and promote regulation of use in watersheds.

However, not only the public sector is involved in water management in Brazil. Coca-Cola, which is highly dependent on water, has its Clean Water Program. By recycling water, minimizing waste and replacing it by compensatory means (rainwater collection, for instance), the company works toward the goal of becomming neutral in terms of water consumption. With the program underway, Coca-Cola has already saved 960 million liters of water.

AmBev and Unilever are another two companies engaged in water management. With targets for reduction of water use per liter of beverage produced, AmBev increased its water saving index in its industrial plants by 22% over, and over the last five years while Unilever has managed to reduce its water consumption by 32%, even with a 27% increase in production.

Petrobras has invested nearly U.S.$ 300 million p.a. in R&D, mainly to develop technology for crude oil and gas exploitation in deep water and biofuel development.

"We believe we shall not only meet short-term needs, but also be able to provide first rate environmental solutions for long term requirements. We must allow everyone ready access to the most modern forms of energy," concluded Fraga.

Fraga linked Petrobras' R&D investments and employee training with providing the country higher calibre professionals with the propensity to innovate. "We have been able to develop some of the most advanced laboratories in the world, even in comparison to the U.S. I'm not saying we won't use laboratories here any longer, but it's fair to say we want better cooperation between university labs in Brazil and the United States."

In his opinion the strategy has worked because Brazil has been able to attract technology centers of multinationals such as GE and Halliburton. "These companies are building technology centers in Brazil to interact with us and with Brazilian universities. This was only possible because we set up intelligent regulations requiring investments in Brazil."

> ***"We believe it isn't a matter of one or the other, but one and the other. We need fossil fuels to keep the lights on during the period of transition to a new energy supply mix."***
>
> *Carlos Tadeu da Costa Fraga*
> *General Director, Petrobras R&D Center*

ENERGY SUMMARY - BRAZIL AND THE UNITED STATES

	United States	Brazil
Main source of electric energy	Coal - 49%	Hydroelectric - 75%
Current proportion of renewable energies in electricity	9%	10%
Total investment in clean energy in 2009	US$ 18.6 billion	US$ 7.4 billion
Percentage of transport fleet running on renewable energy	3%	50%
Current proportion of nuclear energy in electricity	20%	3%
Number of nuclear reactors in operation	104	2
Uranium reserves (in tons) and world ranking	342,000 / 6th	278,000 / 7th
Main source of renewable energy	Biomass / Wind	Ethanol / Biomass
Proportional targets for green energy (strategic objectives, non-binding)	15% by 2020	43% by 2030, 25.4% (excluding hydroelectric)

Source: Council on Competitiveness, based on data from Pew Charitable Trusts, EIA World Nuclear Association

Conclusions

- Water and energy are matters of global security and will require the increasing attention of governments and the private sector. To face the growth of world population and increased demand for food and fuel, it will be necessary to speed up development of alternative energy sources.
- Research centers and universities must concentrate efforts to develop technologies that raise crop productivity while using less water – the only way to meet growing world demand for food. This will require the employment of new energy sources created by large investments in R&D.
- 82% of Brazil's generation of electric energy is produced by hydroelectric plants. The country's challenge is to meet growing demand that is derived from a fixed supply resource. Opportunities for entities of both nations exist in innovations that improve efficiency and distribution and provide alternative fuels to help meet demand. Wind energy collected from the country's northwest coast was specifically cited as an untapped resource.
- As smart-grids become more commonplace, cyber-attacks on utilities become a greater threat. Security will become increasingly important to energy providers.
- Governments, especially in the area of aeronautic biofuels, play an important role in establishing investment priorities and creating a necessary harmonization of these fuels.
- Brazilian regulations that mandate energy companies to allocate funds to R&D is attributed to many advances in the industry including the production of talent and expertise.

FACTSHEET

Moderator

Alexander "Andy" Karsner - Executive Chairman, Manifest Energy

Participants:

Carlos Tadeu da Costa Fraga - Research & Development Center General Director, Petrobras | Billy M. Glover - Managing Director, Environmental Strategy Boeing Commercial Airplanes, The Boeing Company | Ray O. Johnson - Senior Vice President and Chief Technology Officer, Lockheed Martin Corporation | Djamil Barbosa - Technology Advisor, Eletrobras | James B. Milliken - President, University of Nebraska | James Pessoa - CEO, Vale Soluções em Energia (VSE) | Alan Shaw - President and CEO, Codexis, Inc.

Hunger and Health
How do we feed the world and innovate at the frontier of biosciences?

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Hunger and Health
How do we feed the world and innovate at the frontier of biosciences?

World population is expected to reach 9 billion by 2050. According to many estimates, meeting this demand will require a corresponding increase in global food production of 70%.

This challenge is accentuated by constraints of limited critical resources like land and water. As punctuated by the Hunger and Health panel, innovative technological advancements must emerge as the solution to this challenge.

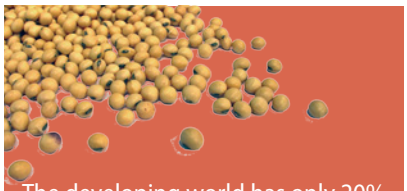
Brazil and the United States must be active participants in this process. The two nations are agricultural leaders in the world in terms of production and technology.

Current output, abundance of farmland, historical experience and a commitment to R&D illustrate the importance of the involvement of the two nations. In the face of massive increases in demand, the two countries have strong incentive to work together to develop the technologies that will advance the agriculture industries of both nations.

During his remarks at the beginning of the discussion, Chairman and CEO of Deere & Company, and Chairman of the Council on Competitiveness, Samuel Allen, argued that the solution for doubling food production by the middle of the century will come from improving technologies and processes already in place, such as coordinated farms - using technology to raise efficiencies and output on farmland already in use.

Mr. Allen elaborated on this concept, one that enables a communication network between farm equipment in real time. "Equipment with intelligent technology tells the tractor how fast to go, the quantity of fertilizer and the depth at which each seed should enter the soil."

Allen also noted that the benefits of this technology extend from large producers and family farmers. "It can be used in Africa, for example, where a family may have a small tractor and a few pieces of equipment that will quadruple yield just by doing the planting at the right time."



The developing world has only 20% of the production capacity of the developed countries

1,800

communities in the Amazon region working in partnership with Natura, learning to coexist with nature and receiving technical training

DNA analysis of a seed makes it possible to trace a possible source of contamination

A partnership between Mars Inc universities and government ensured agility in sequencing the cacao gene and makes it possible to fight a fungus that attacks tillage

For this reason, these technologies are applicable to increasing output in both the developed and developing world. "I'm optimistic about the chances of doubling food production by means of the technological revolution."

DuPont's Chief Science and Technology Officer, Uma Chowdhry added to Allen's points, arguing that technological solutions must, above all, consider all the aspects that impact the lives of small producers. "The developing world only has the capacity to produce 20% of what the developed world produces."

"To double production by 2050 we'll need the right product for every piece of land, especially in developing countries. We need to work to ensure efficient use of water and maximize productivity per hectare, whether in very hot conditions or heavy rain," she continued. Partnerships between companies, universities and governments are thus essential to meet objectives faster. In Chowdhry's words, "it's a matter of connecting progress now to help fight hunger in the world."

Thirty or forty years ago there was little technology available that could substantially increase food production. Today, new technologies have the potential to make a large impact on the agricultural industry if employed correctly.

In the view of Embrapa's Executive Director, Kepler Euclides Filho, the world needs to increase efficiency as agriculture is not responsible for food alone, but also for supplies of fuel and energy, environmental services, medicines and cosmetics.

To do this in a timely manner, the Director expressed the necessity of increasing both research in the field and partnerships between institutions.

"It's necessary to change mentality and invest in partnerships to meet demand and overcome challenges," Kepler emphasized. "It's easy to sign a piece of paper, but it isn't easy to work together and get what we need for a new world, for our children and grandchildren," he added.

> ***"It is my wish that agricultural research attract the attention of global leaders in the manner it deserves."***
>
> *William "Randy" Woodson*
> *University of North Carolina*

As one of the world's largest food companies, Mars Inc is also a consumer of massive amounts of raw materials and resources. Achieving, in a sustainable manner, the consistent sourcing of materials is essential for the company's success into the future. "A key principle is to maximize gains in productivity while minimizing the use of land, so as to be environmentally and socially sustainable," panelist and Chief Science Officer of Mars, Harold Schmitz expressed.

At Mars, Schmitz and his team are attempting to better understand the crops that provide their sourcing materials and the land upon which it grows.

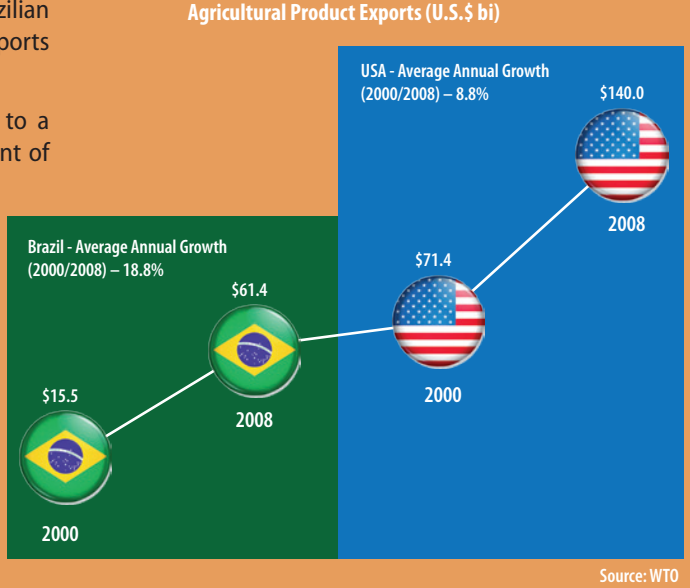
Agricultural leadership binds Brazil and the United States

Brazil is currently the third largest food exporter in the world, behind only the European Union and the United States. In 2008, Brazilian exports totaled US$ 54.3 billion, equivalent to 4.9% of world exports for the segment.

Brazil's rise from a food importer during the military regime to a net exporter today can be largely attributed to the development of technology and strong research capability of Embrapa.

Embrapa's (Brazilian Enterprise of Agricultural Research) activities range from improving agricultural processes in biotechnology, nanotechnology, agro-industry and food technology. A recent report in The Economist (August 28, 2010) described the role of Embrapa in transforming the Brazilian Cerrado into available farmland.

With new techniques for preparing soil, the discovery of new planting methods and application of genetics, Embrapa enabled soybean cultivation in a tropical region. From 1990 to today, annual soybean production production has skyrocketed from 15 million to 60 million tons.



Partnerships

Working jointly with small farming communities has helped promote significant social changes, generating jobs and income in different parts of Brazil. This is the mission that has interwoven itself into Natura's business model, a leading cosmetics company in Brazil.

Natura's Vice President, Global Innovation, Telma Sinício explained how, last year the company worked with 1800 families in communities in the Amazon region to collect leaves and seeds used in the company's products. "By doing this, we not only help get the products, we also teach people how to coexist with the forest. The families also produce food and receive the remuneration necessary to survive. We have created awareness of the environment," she explained.

Sinício also announced that the company is organizing global knowledge centers. "The centers will foster partnerships and great opportunities for universities, companies and individuals who'd like to unite and promote a significant change in the world and in how we act."

North Carolina State University Chancellor William "Randy" Woodson offered a different perspective into the effort to raise global production. He noted the need to reduce losses in the cultivation and transportation of foods and explained the gains that can be realized in reducing waste.

North Carolina State University is well known in the United States for the number of agricultural scientists it has brought together and numerous successful pieces of research that have helped curb losses in the production process.

Woodson cited a case involving the Brazilian orange juice industry, which developed the capability to process, store and ship juice worldwide in drums like those used by the petroleum industry. As a result, the industry reduced spoilage and waste.

Recent innovations have also enabled bean producers in Africa to protect harvests from attack by insects, preserving for over a year. "They are technologies that protect farmers' resources and lend value to products," he summarized.

> ***"In terms of nutrients, we have technology and tools that allow us to extract oil from plants with no trans-fat, a low percentage of saturated fat and enriched with vitamins. It's incredible what we can do today, understanding a plant's genome."***
>
> *Uma Chowdhry*
> *Chief Science and Technology Officer Emeritus, DuPont*

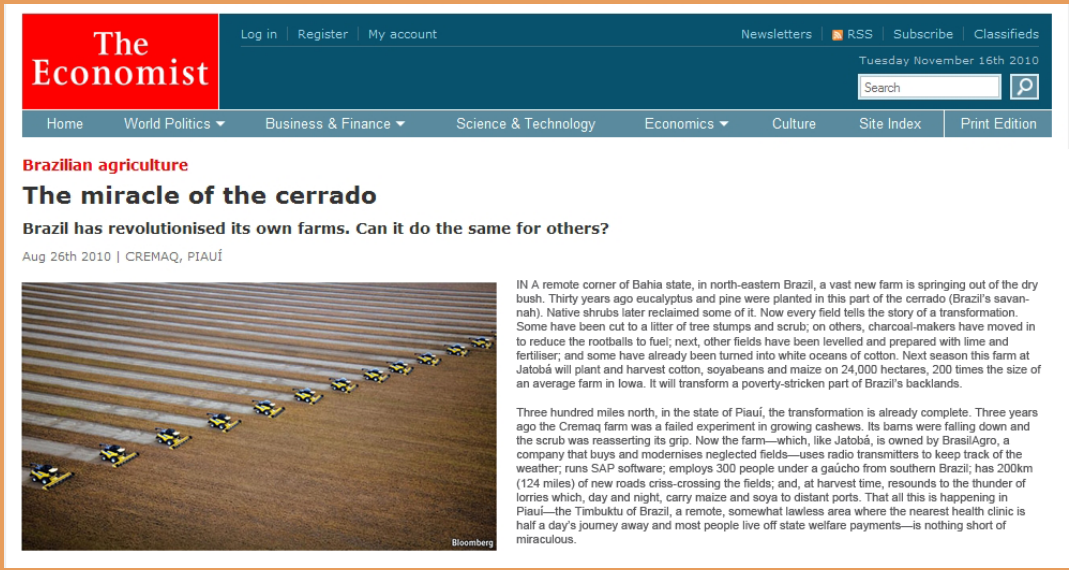
William "Randy" Woodson, Telma Sinício, Harold Schmitz, Lou Anna Simon, Kepler Euclides Filho, Uma Chowdhry and Samuel Allen (left to right) participated in the panel. In the opinion of the discussants, in addition to increasing productivity, companies want to improve the safety and nutritional value of foods

Vast areas still unfarmed

Prospects for the production of food in Brazil are promising. The Food and Agriculture Organization of the United Nations (FAO), estimates that the country has currently 400 million hectares of farmland, and a further 350 million that are still unexploited. This is more than double the entire quantity in Russia and the United States together.

Today only 5.7% of the farms needs subsidizing because of rapid advances in Brazilian productivity. In the United States, this figure is 12%, and in the European Union, 20%. With vast unexploited areas, abundant water, technological expertise and a productive agricultural labor force, the output of food in Brazil is expected to grow even further.

Large Brazilian companies have also played an important role in these developments. JBS Friboi, for example has expanded its reach to all corners of the globe. Through acquisitions of large companies throughout the world, such as the American group Swift Foods, Friboi now approximately 45% of the world's meats. The group is currently investing in sustainable livestock-raising and traceability of food.



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Brazilian agriculture

The miracle of the cerrado

Brazil has revolutionised its own farms. Can it do the same for others?

Aug 26th 2010 | CREMAQ, PIAUÍ

IN A remote corner of Bahia state, in north-eastern Brazil, a vast new farm is springing out of the dry bush. Thirty years ago eucalyptus and pine were planted in this part of the cerrado (Brazil's savannah). Native shrubs later reclaimed some of it. Now every field tells the story of a transformation. Some have been cut to a litter of tree stumps and scrub; on others, charcoal-makers have moved in to reduce the rootballs to fuel; next, other fields have been levelled and prepared with lime and fertiliser; and some have already been turned into white oceans of cotton. Next season this farm at Jatobá will plant and harvest cotton, soyabeans and maize on 24,000 hectares, 200 times the size of an average farm in Iowa. It will transform a poverty-stricken part of Brazil's backlands.

Three hundred miles north, in the state of Piauí, the transformation is already complete. Three years ago the Cremaq farm was a failed experiment in growing cashews. Its barns were falling down and the scrub was reasserting its grip. Now the farm—which, like Jatobá, is owned by BrasilAgro, a company that buys and modernises neglected fields—uses radio transmitters to keep track of the weather; runs SAP software; employs 300 people under a gaúcho from southern Brazil; has 200km (124 miles) of new roads criss-crossing the fields; and, at harvest time, resounds to the thunder of lorries which, day and night, carry maize and soya to distant ports. That all this is happening in Piauí—the Timbuktu of Brazil, a remote, somewhat lawless area where the nearest health clinic is half a day's journey away and most people live off state welfare payments—is nothing short of miraculous.

Bloomberg

The Economist, highlighted Brazilian vigor in the agricultural area. The report titled "The miracle of the cerrado", published in August 2010, tells the story of the region's transformation.

Expansion of Brazil's Health Care Industry

With one of the largest and most daring health programs in the world, Brazil is pushing forward a policy of marrying agriculture to the needs of its national health policy.

SUS (Brazil's public health care system) serves 130 million people. With a network of almost 6 thousand hospitals and 64 thousand health centers, the Ministry of Health's federal budget is US$ 34.5 billion and covers 12 million hospitalizations and 2.3 billion ambulatory consultations a year.

SUS also performs a number of exams and enables 9 million radiotherapy procedures, 300 million lab tests, 6.5 million ultrasounds, 8 million hemodialysis and 160 thousand magnetic resonance per year.

Over 43 million beneficiaries utilize private health plans, a figure that is increasing about 4.9% a year. In 2009, the revenue of Brazilian health plans was over US$ 35 billion.

Brazil's trade deficit in the health sector equaled US$ 7.2 billion in the first half of 2010. At approximately 70% of medicines distributed by SUS are purchased in Brazil, greatly contributing to the Brazilian pharmaceutical industry's annual revenues of US$ 18 billion.

In addition to increasing output, Brazil's agriculture industry is using technological advancements to increase the safety and nutritional qualities of food. "In terms of nutrients, we have technologies and tools that allow us to obtain oil from plants with zero trans-fat and a low percentage of saturated fat, and enrich it with vitamin. It's incredible what we can do nowadays, understanding plants' genomes," explained DuPont's Uma Chowdhry.

According to Chowdhry, technology currently available makes it possible, through DNA analysis, to trace possible sources of contamination. Embrapa's Kepler Euclides Filho expanded the concept of healthy food to those that, adopt more sustainable practices in agriculture, such as reducing fertilizers and pesticides and making better use of water.

Harold Schmitz, in turn, stated that in order to advance further in this field, fusion in the world of food science is necessary. "Brazil and the U.S. are on an equal footing to perform this role," he added.

For Natura's Telma Sinício, the challenge for the cosmetics and food industries is preservation. "I invite everyone who wants to develop technology and research centers to do so, because this is the challenge affecting the entire industry, and it's related to extracting raw materials from forests," she concluded.

Sinício continued by stressing the mutual responsibility to not only improve processes, but also to take advantage of the potential of local communities in the Amazon region. "They're only producing a little, which goes to the cosmetics industry. But there's considerable potential to be exploited if we think of all the oils that can be extracted from Amazon's biodiversity. This is why preservation is a key challenge for industry at large and we need to find partners to develop solutions."

The role of the public sector

Harold Schmitz of Mars Inc, cited an example of a partnership initiated by his company that brought improvement to the production of cacao in Brazil - a key ingredient in the manufacturing of chocolate. In the 1980s, production had fallen because of a fungus that was attacking the crop. In response, Mars forged partnerships with the government, universities and industry to sequence the gene of cacao and better understand the nature of how the crop is affected by disease.

"We decided to put research in the public domain and work with these three sectors. To our surprise, the result of this cooperation was high quality research with much faster results than in the past when we were worrying about ownership. This taught us the potential of collaboration. "William "Randy" Woodson of the University of North Carolina believes that the success of Brazilian and U.S. agricultural history is associated with agricultural research.

He expressed his view that it is necessary to continue supporting and encouraging public investment in agricultural science and the challenges that tropical and developing countries face. "The private sector acknowledges and talks about this need just as much as the public sector does. I hope agricultural research catches the attention of global leaders as much as it deserves to."

AGRICULTURE IN THE USA AND BRAZIL

UNITED STATES

- FAO-OECD study forecasts15-20% increase in agricultural production in 2010-2018. This growth is less than that forecast for BRIC, Ukraine and Australia, but greater than figure forecast for the EU (>4%).
- Less than 2% of workforce employed in agricultural sector.
- Currently close to 41% of total area is used for agriculture (USDA).
- 2009 farm subsidies over US$ 15 billion. Corn is the most subsidized crop.
- USDA lists 4 main challenges faced by US agriculture: global competitiveness, public demand for safety; nutritious foods produced in sustainable manner; how to respond to increasing industrialization of US agriculture.

BRAZIL

- FAO-OECD study forecasts 40% increase in agricultural production in 2010-2019 – the fastest growth rate in the world.
- About 17.5% of workforce employed in agricultural sector.
- Currently uses only one third of its arable land (USDA).
- Three main sources of funding for agricultural projects: governmental agricultural credit; commercial banks or other governmental agencies and agricultural processors.
- Facing logistics challenges – USDA calculates that logistics cost of Brazilian soybean exports is 83% higher than that of U.S. and 94% higher than Argentina's.

Source: Council on Competitiveness, based on data from the United States Department of Agriculture

Initiatives to stimulate partnerships between governments and the private sector are addressing the challenges introduced by the panel. Deere & Company's Samuel Allen pointed out, for example, the huge potential of his firm's Global Harvest Initiative program in bringing together governments, NGOs and companies in the quest for results.

Discussing the pairing of Brazil and the United States, Uma Chowdhry presented that the challenge, is to discover how to combine the two systems into a cooperative model that can be replicated around the world. She questioned how other tropical developing nations can take advantage of the benefits of a partnership between Brazil and the United States and also contribute to collaborative work being done.

The reply was provided by Chowdhry herself. "I believe it's possible and there are no restrictions. It's a matter of connectivity, which we know how to speed up. Knowledge exists in the world, and we need collaborative forms of partnership."

In spite of public support, agriculture research is not always practiced in many countries. Embrapa's Kepler Euclides Filho stressed the need for governments to take a leadership role in agricultural research. "Together, we must change the way governments view agriculture, and more specifically, how they go about agricultural research."

According to the Kepler FIlho, Brazil and the United States should work together to try and influence a global movement towards placing agriculture at the center of government policy. "If we don't do this, it doesn't matter whether we're going to develop technology or not, because there will be no opportunities to use it," he warned.

Kepler Filho also highlighted the need for technology transfers. "We're placing more emphasis on new technology and knowledge, but without transfers, we'll see no innovation."

A third point raised by the Director was the importance of training professionals that will be working hands-on with new technology. "The further we advance in new technologies, the more important it is for people to be qualified to deal with new knowledge."

Tiago Alves, CEO, CSEM Brasil, and Francelino Grando, MDIC's Secretary for Innovation, remarked on the discussions, highlighting Brazilian capability and experience in developing technological solutions for agriculture and the accumulation of resources and institutional advances in Brazilian science and technology, especially since 2003.

Samuel Allen, Chairman and CEO of Deere & Company, and Chairman of the Council on Competitiveness, *stressed that the solution for doubling food production by the middle of the century lies in improving processes, such as coordinated farms. He foresees solutions based on high technology that offer great opportunities to both large producers and family farms*

Conclusions

- Effective use of R&D, talent and technology transfers are critical to increasing agriculture production and meeting the growing needs of the 21st century.
- Technology is enabling the development of intelligent equipment which maximizes the use of land and helps farmers and producers increase productivity.
- Partnerships between the private sector, government and universities in the area of research will not only create efficiencies for increased agricultural output but will also manage agricultural use for biofuels, pharmaceuticals and consumer products.
- Tapping the knowledge base of local communities is critical as these individuals have knowledge of regional best practices and agriculture specific to a geography.
- Partnership between Brazil and the United States should attempt to create a model that can be scaled to other areas of the world.

FACTSHEET

Moderator

Lou Anna K. Simon - President, Michigan State University

Panelists

Samuel R. Allen - Chairman and Chief Executive Officer of Deere & Company, and Chairman of the Council on Competitiveness (CoC) Uma Chowdhry - Chief Science and Technology Officer, Emeritus, DuPont | Kepler Euclides Filho - Executive Director, Embrapa | Harold Schmitz, Chief Science Officer, Mars, Inc. | Telma Sinício - Vice-President, Global Innovation, Natura Cosméticos | William "Randy" Woodson - Chancellor, University of North Carolina

Discussants

Tiago Maranhão Alves - CEO, Csem Brasil | Francelino José Lamy de Miranda Grando - Secretary of Innovation, Ministry of Development, Industry and Foreign Trade (MDIC)

Leadership Dialogues

Opportunities for joint action

Mauro Vieira | Ambassador of Brazil to the United States

Abstract

Ambassador of Brazil to the United States Mauro Vieira presented remarks during the first Leadership Dialogue of the 2nd US-Brazil Innovation Summit.

The Leadership Dialogues were interspersed between the panels and offered addtional perspectives on key subjects of the Summit.

Mauro Vieira represents a new generation of Brazilian diplomats in charge of Brazil's foreign affairs as the country expands its influence on the international stage.

After serving as Ambassador to Argentina from 2004 to 2009 – a strategically important position for Brazil – he was appointed Ambassador to the United States.

In his speech, Vieira drew attention to new partnerships being forged between the two countries in key areas such as energy, biofuels and entrepreneurship.

Innovation and Development

The dynamic nature of the bilateral relationship, according to the ambassador, is rooted in the efforts of the governments, entrepreneurial class, academia and civil society of the two countries. It is also a reflection, he attests, of Brazil's capability of constructing, being present and acting in different domains with new ideas and approaches.

Brazilian economic growth has been considered to a great extent the result of the country's capacity for innovation in sustainable development, energy and the environment, electronic government, social policy, corporate governance and administrative strategy.

The very occurance of the 2nd Innovation Summit, he said, shows that Brazil is increasingly regarded as a valuable partner for dialogue and joint action, a key partner in different strategic fields.

To effectively promote innovation, countries must fine-tune public policy and private sector strategies. The private sector's involvement with this endeavor is critical.

However, to encourage this investment, the private sector needs the right public environment – requiring coordinated involvement from government, business and academia.

Vieira also expressed another important aspect of innovation - the manner in which the degree of innovation is gauged in the world market, i.e. how competitive and strategic the country is in comparison with leading countries throughout the world.

Although he recognizes the quality of innovation policy in Brazil, Vieira noted that the level of investment in R&D in the country as relatively low and the necessity to increase in order to reach the levels of OECD countries.

Estimates for 2010 indicated that the investment level for OECD countries will total approximately 1.5% of GDP. "It's clear that we still have a long way to go and initiatives like this are very important to stimulate this movement," the ambassador said.

Opportunities for partnership with the United States facilitated by events such as the Innovation Summit, can help improve levels of investment and increase the resources available for research, development and innovation as a whole.

Vieira also stressed that the Summit made it possible to organize the first gathering of representatives of the Brazilian scientific diaspora in the United States, an ongoing process that "will bear fruit benefiting both countries."

In addition to this, he stated, Brazil and the United States can also cooperate in joint initiatives with third countries, especially in Africa and the Americas, in the areas of science, technology and innovation.

"Partnership" was considered the key word by the ambassador, who indicated the need for this process to take place at different levels – between the public and private sectors, between different levels of government and between the private sector and academia.

Leadership Dialogues

Commitment to innovation to overcome obstacles

James B. Steinberg | U.S. Deputy Secretary of State

Abstract

United States Deputy Secretary of State James B. Steinberg addressed participants at the 2nd U.S.- Brazil Innovation Summit during a luncheon keynote on the second day of the event.

Steinberg delivered a message of support from the administration for hemispheric relations and detailed the policy and developments of the United States in the region.

As examples, he cited Obama's meeting with Mexican President Felipe Calderón, one of the first in his agenda after taking office, and his participation in the Summit of the Americas, which reflected the United States' firm commitment to regional cooperation.

Innovation as a solution

The Deputy Secretary of State stressed that innovation is the key to economic growth and makes economies grow faster in the long term.

For this reason, he asserted, it is hard to imagine a path for Brazilian and U.S. society that does not call for a commitment to innovation to overcome common challenges, such as climate change, energy security, pandemics, hunger, violent extremism or fighting the proliferation of weapons of mass destruction.

Steinberg emphasized admiration for Brazil's economic trajectory and the potential that exists for partnership between the two countries. Latin America, he asserted, embraced democracy and has been a model of democratic development, building economic growth while pursuing a broad societal commitment to expanding opportunity for all its citizens.

Following its early recovery and exit from the global financial crisis, Brazil played an important role in the restoration of regional and global growth, while at the same time aiding millions to advance out of poverty. However, despite the advances, the hemisphere still must take measures to set the stage for long-term development.

Productivity growth remains low in a number of countries, the educational system is weak and investment in science and technology is lacking. The region must find ways to make gains, diversifying away from a dependence on natural resources and commodities.

The crucial task for governments is to create an environment favoring and stimulating innovation by adopting the correct policies in the areas of education, R&D funding, governance, transparent regulatory policies , IP protection and competitive markets.

Innovative agricultural research in Brazil, involving both the public and private sectors, has made the country a world leader in food production and a model for other developing nations. The Deputy Secretary expressed optimism of the benefits of the partnership in this sector for the United States.

The two countries already account for almost three quarters of global biofuel production, and together they can develop new technologies.

In Steinberg's view, collaboration between Brazil and the United States in areas ranging from civil aviation and telecommunications to agriculture and health is essential to sustain prosperity in the 21st century.

It must be recognized, said the United States Deputy Secretary of State, that social inclusion must be a fundamental part of any agenda for innovation. An economy cannot continually advance if some of its members are left behind.

Citizens cannot become innovative and contribute productively to society without access to good education, the financial system and mechanisms that foster growth.

Steinberg cited Secretary of State Hillary Clinton when emphasizing the importance of women in the role of transforming society and highlighted finally, that the American government has used Brazil's Family Grant Program model to create a network of social protection in the Americas.

The examples mentioned show the potential of partnerships, not only between Brazil and the United States, but by the entire hemisphere.

Smart Places: How do we foster creativity and innovation in a world of rapid urbanization?

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Smart Places: How do we foster creativity and innovation in a world of rapid urbanization?

What makes a city or a company a smart place, able to attract talent and encourage innovation? The smart places panel explored the emergence of the smart city and its role in global competitiveness. Participants worked jointly to define what makes a city "smart" as well as how geographies can become and remain locations that attract leading talent from around the globe.

Panel moderator, Eduardo Costa, Director of Innovation, Funding Body for Studies and Projects (Finep) invited the participants to express their ideas about the factors that are definitive of the world's smartest cities and what characteristics of these places are most attractive to today's most sought after leaders.

Access to and quality of technology, including its employment to create liveable and efficient metropolitan areas was featured prominently in the discussion. The role of university systems in the creation of smart places was also highlighted.

From the discussions a key question emerged - What drives a person or company with creative and innovative potential to settle in a given place? Classical economic drivers like access to raw materials and other production factors are not applicable to the model of the 21st century. Attracting and retaining talent is now a leading strategic activity for modern enterprises and is critical to firms selecting geographic locations for their operations.

Arizona State University President Michael Crow discussed the role of the university in a smart place, expressing that traditional academic models have become old-fashioned and mal aligned with creating smart places. "The idea is to redesign universities, rethink institutions so they have a local focus and reevaluate their proposals for the community and company."

"It's best to advance when everyone is committed. Training in entrepreneurship is also a necessary initiative for any entity designed to act in smart places," he stated.

When remarking about the possibilities of cooperation between Brazil and the United States, Crow said that the two countries must identify common problems and set up entities on both sides to solve them. The President of the University of Arizona mentioned the climate phenomenon El Niño as an example.

"El Niño is shifting the distribution of rain and heat in the two countries, with profound effects on agriculture and water supplies. If we set up a number of entities to tackle this problem, we'll see mutual benefits and innovations, and entrepreneurship. Don't attack the market. Attack the problems. The markets will be derivatives of how these problems are handled."

Worldwide, there are 40 mega-regions that constitute one third of the global economy and account for one-fifth of the world population

In Brazil, São Paulo, Rio de Janeiro, Brasilia, Belo Horizonte and Curitiba account for 23% of national GDP

233 Brazilian cities with populations of between 100 thousand and 500 thousand produce 35.4% of GDP

Growing Brazilian cities are increasingly balancing of economic development and quality of life. One example is Uberlândia (Minas Gerais State), where 99% of the urban population has access to the sewer system and 100% of the waste is treated. Running water and electric light services are now universally available

Brazil has 25 technological parks near prestigious university centers. These zones are giving rise to new smart cities.

Investment in education is essential to raise Brazil's competitiveness and enable it to attract capital and intelligent people

The State of Montana is the fourth largest in the United States in terms of territory, but possesses the third lowest population density in the nation. Most cities have less than one thousand inhabitants and the economy is based on agriculture, with significant wheat crops. The prominence of the state's agriculture industry has dictated the cirriculum and research efforts of Montana State University-Northern.

Panelist Frank Trocki, the University's Chancellor, discussed the institution's focus on alternative energies, especially biofuels used in machinery, agricultural equipment and transportation.

The university also cooperating with other institutions to learn and develop new techniques related to the use of sugar cane as a source of energy, opening the door to the possibility of partnerships with Brazil.

Located in São José dos Campos, São Paulo State, Embraer is headquartered in a mid-sized city considered one of the smartest in Brazil. Commercial exchange with the United States stands at about US$ 3 billion p.a. and the company invests about 1% of this value in R&D.

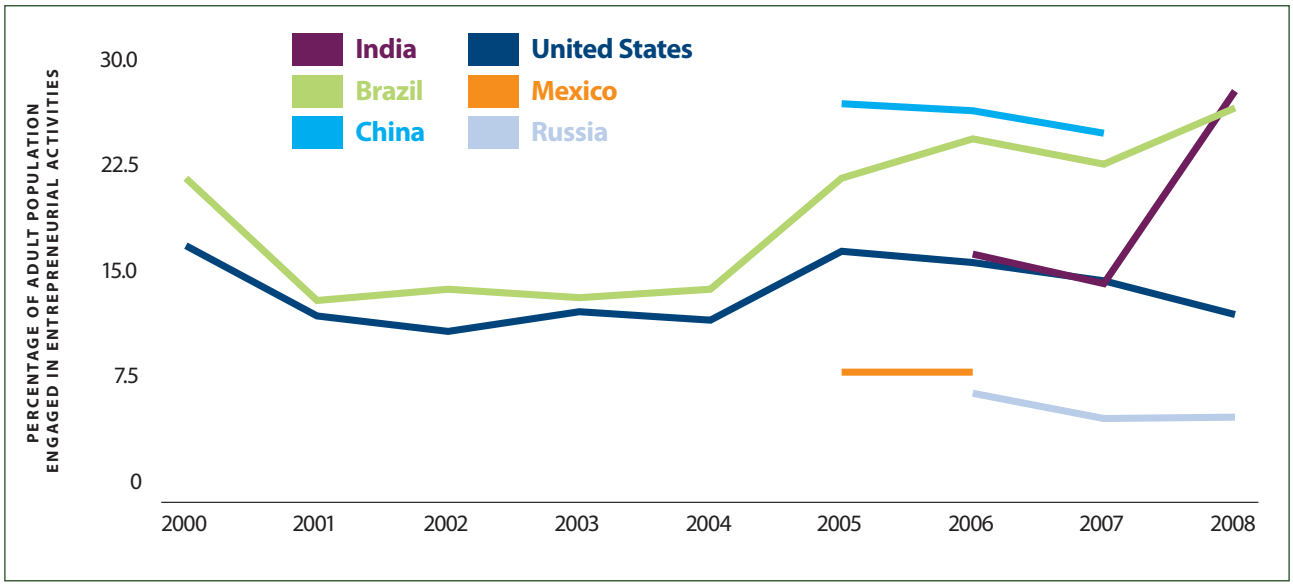
Embraer's Vice President for Organization and Human Resources, Hermann Ponte e Silva, detailed the complicated process of developing and building aircrafts. A small plane requires approximately 8 million hours of work, involves hundreds of suppliers and thousands of engineers who must interact, cooperate and be interconnected.

Ponte e Silva referenced a McKinsey study that concluded that workers spend approximately half their time on the job interacting with one another. For this reason, he explained, a major challenge is to improve the channels of internal communication to better collaborative efforts.

"Along the process, links are established, and so are the necessary conditions for opportunities to arise. I believe we could do more than research alone, but also discuss how to collaborate and develop technology with the United States, especially with our suppliers based here," he explained.

> ***"El Niño is shifting the distribution of rainfall and heat in the two countries, with profound effects on agriculture and water supplies. If we set a number of entities to tackling this problem we'll see mutual benefits and innovations, and entrepreneurship. Don't attack the market. Attack the problems. The markets will be derivatives of how these problems are handled."***
>
> *Michael Crow*
> *President, Arizona State University*

Entrepreneurial activity in countries with accelerated development



Source: Council on Competitiveness based on data from the Global Entrepreneurship Monitor Reports, 2000-2008

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Attracting Talent and Investment to Brazilian Smart Places

Technology will continue to distinguish the most competitive nations of the world. Established in Brazil more than 90 years ago, and with over ten thousand employees in the country, Ford Motor Company is betting on Brazilian innovation to develop new products and services. But while Brazil has received increased investment in this area in recent years, it is evident that the country must do more to improve education levels and infrastructure.

This was echoed by panelist Paul Mascarenas, Vice President, Engineering – Global Product Development, Ford Motor Company who highlighted, education and infrastructure as the main factors for the emergence and expansion of smart places. He highlights the need for more engineers in Brazil.

Statistics indicate that Brazilian engineering students are under-represented in university populations. Only 15% of all university students are currently registered in engineering courses.

"We must encourage more investment in this area. Brazilian engineers are well qualified, but few in number and limited in experience. I'd recommend more investment in engineering courses because the knowledge is there," he stated.

Mascarenas suggested a policy of investment in infrastructure, especially transport and communications. In the Ford executive's opinion, the two sectors are rich opportunities for cooperation between Brazil and the United States.

Investment in better living conditions is essential for cities to attract people and become places for creating innovation.

Lee McIntire, Chairman and CEO of CH2M Hill, highlighted the phenomenon of megacities and how society will deal with urban growth in coming decades as essential factors for the emergence of smart places.

In 1800, McIntire said, only 3% of the world's population lived in cities. In 1950, there were 150 million city dwellers. Today, there are 3 billion. In the U.S., 75% of the population lives in urban areas. It is estimated that two thirds of a world population of 8 or 9 billion will live in cities in 2050. "We'll be forced to deal with this, and when we think of smart places, we can't ignore the need to improve urbanization."

McIntire was in Brazil recently, and on visiting Rio de Janeiro and Sao Paulo he saw the need to improve sanitation, water and transport infrastructure in the two metropolises. "For us engineers they'll be interesting problems to solve, but we must keep megacities in the equation because we'll all live in cities in the future," he noted.

> ***"The challenge is to get the professionals involved in a project to interact with one another and take advantage of opportunities for collaboration."***
>
> *Hermann Ponte e Silva*
> *Vice President for Organization and Human Resources, Embraer*

Creating the conditions

NASDAQ Vice Chairman Meyer "Sandy" Frucher discussed the decision making process of talented workers when choosing where to reside. "People go to places where they like to be. This means places with quality of life, employment opportunities, education, environment."

According to Frucher, cities large and small must all provide access to technology, for example, to broadband internet to communicate and be a part of the market. "People talk a lot about initiatives between Brazil and the U.S. I agree that very positive things are happening, but when you have innovation and creativity, a third element becomes necessary: markets."

To get to market, noted Frucher, you need the capital necessary to help companies develop their concepts. "And that's what capital markets do," he reminded. Discussing his own firm, he noted that five years ago NASDAQ was solely a domestic exchange focused upon the United States. Its presence in Brazil, for instance, was restricted and very exclusive.

Today NASDAQ offers its services to 74 markets in 52 countries. "We're innovators; we act in a market of innovations with people from every corner of the world." Frucher asserted that creativity alone is not enough. Capital is necessary to invest and put ideas into practice. "That's why I ask all creative people to come to NASDAQ, where we'll help obtain the resources necessary to grow."

Talent attracts talent

> ***"An educated population is what really counts, and that's where we have to go. The U.S. has the same problem as Brazil: we don't produce enough engineers or people with technological capability."***
>
> *Meyer "Sandy" Frucher*
> *Vice Chairman, The NASDAQ OMX Group, Inc.*

Urban Hot Spots in Brazil

Smart cities are emerging in new areas in Brazil, as businesses move from traditional metropolises to new and developing locations. Hortolândia, in northern São Paulo State, is such a example.

With 22.6% annual growth, GDP of R$ 4 billion and a population of 205 thousand, the city is being designed as national technology center.

Hortolândia has attracted computer giant Dell, as well as companies such as home appliance manufacturer Mabe and railway wagon builder CAF.

In only a few years, unemployment has plunged from 17% to 4%, and growing municipal revenue has been used to expand services and to improve infrastructure. As a result, crime rates have fallen and an increased amount of commerce and investment has been recorded.

Similar stories are emerging all over the country: 118 in the Southeast, 43 in the South, 10 in the Center-West, 44 in the Northeast and 18 in the North region. Additionally, these municipalities are bringing a new emphasis on urban planning.

As many mid-size Brazilian cities become metropolises a new focus on balancing economic growth and quality of life is providing models and live experiments for application in locations throughout the country.

Londrina, in Paraná State, is an example of successful urban planning in Brazil. Almost 30 years ago, it was predicted that Londrina would have over 700 thousand inhabitants.

The municipality's different administrations over the years have focused on the city's growth and future living standards, avoiding the emergence of shantytowns common in Rio de Janeiro and São Paulo, and putting together a network of public and private services available to 1.2 million inhabitants in 92 neighboring municipalities.

The challenge facing Brazil's large metropolises today is to deconstruct many of the urban challenges that now exist. This requires solutions to violence, poor transportation, pollution, the provision of technology and application of technological solutions to overcome existing challenges.

During the 2007 Pan-American Games in Rio de Janeiro, innovative solutions for security were developed. Radiological and nuclear protection technology were developed specifically for use during the event.

The creation of technology parks has been an effective tool in building new smart places. With a history in the field of IT, Porto Digital, based in Recife (Pernambuco State), has two incubators and 130 institutions (research companies and centers), generating four thousand jobs and accounting for 3.5% of Pernambuco State's GDP.

What stimulates people's desire to live in a given place in such a way that the location begins to be considered "smart"? Gallup Inc.'s CEO James Clifton this as a leading question that contemporary leaders ask themselves to determine where the next economic empire will emerge.

Clifton noted the famous case of San Francisco's Silicon Valley to explain part of America's economic growth and how the region became attractive for talent.

Thirty years ago, he said, the United States was placed third in projections for the listing of largest economies of the future. Today, Japan should be in first place with GDP amounting to U.S.$ 5 trillion, followed by Germany, U.S.$ 3.5 trillion, and the United States, about U.S.$ 1 trillion.

Gallup's CEO has no doubt that the emergence of a large economic center near San Francisco changed everything. In an attempt to better understand the specific role of individuals in creating the economic boom, he and Gallup engaged in a comprehensive study to measure the number of people directly responsible for the emerge of Silicon Valley and its economic engine. His results were striking: "If we were to count the people who created it, it would be hard to say more than one thousand. And because of them we have a GDP of U.S.$ 14 trillion."

U.S. economic growth over recent years is directly related to the emergence of the internet and, according to Clifton, it is illustrative of the importance of innovation and entrepreneurship. Clifton carefully separates the development of innovative centers around the world and the actual output of game changing ideas and technologies. He noted that entrepreneurs create the difference.

"Talent attracts talent. The world's unusual people will always be near other unusual people. There are a lot of talented people out there who found other talented people who helped them maximize their talents."

Noting the prevalence of immigrants from India in the list of 1000 individuals, he hypothesized that Silicon Valley could perhaps have emerged in India should the conditions there have encouraged these individuals to remain in their country of origin.

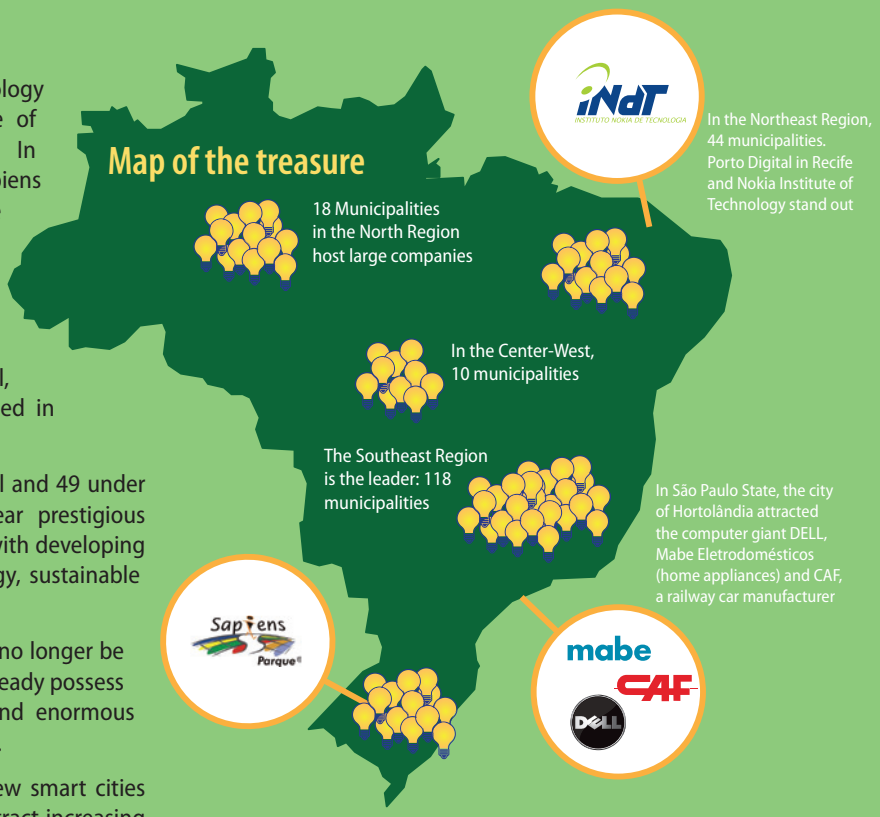
Groups such as Nokia Institute of Technology are present in the region to take advantage of an innovative culture and qualified talent. In Florianopolis (Santa Catarina State), Parque Sapiens is developing economic clusters built around the region's competitive strengths.

To produce talent for companies linked to culture, the arts, S&T activities and sustainability, investment funding have been for land infrastructure and projects in the social, environmental and technological areas allocated in the region of R$ 2.3 billion in the medium term.

In total, there are 25 parks in operation in Brazil and 49 under construction. They are commonly located near prestigious university centers, linking university programs with developing the talent for firms producing renewable energy, sustainable solutions and technological products.

The categorization of Smart Places in Brazil can no longer be associated only with cities like São Paulo, that already possess a mature network of sophisticated services and enormous attractions for innovative businesses and people.

These technology parks and the creation of new smart cities outside the traditional economic centers will attract increasing numbers of innovative businesses in the future.



Gallup surveys show that people recognize the places offer the greatest support for entrepreneurship, and congregate there. "They're people who want to get rich, famous, change the world and they don't apologize for it. I don't know how many people like this there are in the world, maybe somewhere between 100 thousand and 1 million, but not more. And if you really want the freaks, there are probably one thousand, and nobody knows where they are."

Another example of a smart place in the United States mentioned by Clifton was the Nashville, Tennessee region. Through a targeted clustering strategy and partnership between industry and local government, the region is now renown as a leading center of the health care industry.

Now that the cluster has been established, a self-reinforcing pattern has emerged as the region becomes even smarter - attracting hundreds of talented researchers and professionals annually.

Is your city smart?

Residing in different cities and countries, panelists shared the characteristics about their cities that make them smart places. Frank Trocki, of the University of Montana, said that people are attracted by the quality of life in the state, as well as above average employment opportunities.

In the opinion of Embraer's Hermann Ponte e Silva, São José dos Campos (São Paulo State) is increasingly becomming a smarter city because it is beginning to offer people more options for their leisure time.

From a college town that emptied on weekends when students travelled home to see their families, now São José has attractions like theaters, gyms and good restaurants. Not to mention the growing offer of jobs for university graduates.

Gallup's Clifton lives in Washington D.C. and says he sees a surge of entrepreneurship in the city. "The Department of Defense spends US$ 1 trillion a year. It's as much as the GDP of Brazil, or India, so it's the perfect place to develop all kinds of smart weapons and equipment."

A resident of New York City, Sandy Frucher brought laughs to the audience when he quoted a line from the song New York, New York to answer whether he lives in a smart place. "If I can make it there, I'll make it anywhere."

Frucher said that when speaking of smart cities, one is speaking of a broader concept that includes investments in education, infrastructure and broadband internet.

"An educated population is what really counts, and that's the way we have to go. The U.S. has the same problem as Brazil: we don't produce enough engineers or people with technological capability. So, "teach math to your kids," he joked.

Ford's Paul Mascarenas lives, 20 miles from Detroit, which has undergone a strong economic recession in recent years. He says that although it is a pleasant place with low crime rates, he would not classify it as smart.

Left to right: Frank Trocki, Herman Ponte e Silva, Lee McIntire, Eduardo da Costa, Paul Mascarenas, Sandy Frucher, Michael Crow and James Clifton. Panelists examined the numerous and divergent components of a 21st century smart city.

"But there are a lot of opportunities for working in a smart environment. My job is to manage the engineering team, and I've had the opportunity and privilege of working with very smart people from Brazil and other countries," he said.

Creation of smart cities in Brazil, especially outside of the South-Southeast states, will require the coordinated efforts of industry, government and universities. Flávia Grosso, Free Zone of Manaus Superintendent and a designated commentator for the panel, spoke from experience as leader of efforts to industralize one of Brazil's most remote regions.

Ms. Grosso detailed the benefits of industrialization for the region and her view that increased international partnerships will raise levels of investment, infrastructure, R&D and intellectual capital necessary to improve the quality of life.

She mentioned the experience of the Free Zone of Manaus as an example. "In the space of 40 years we've grown from 200 thousand to 1.7 million people, from no industry to over 600 million workers and large investments in universities and R&D.

Flávia Grosso invited the seminar members to visit Manaus and see the results first-hand, urging them to invest in the state, in the university – and help conserve the Amazon Rainforest.

Conclusions

- University models need to be realigned to support the building of smart places, identifying the local needs of a region and working in partnership with the local business community.
- Technology is critical to a smart city - contributing to transportation systems, provision of services, rapid communication and interconnectivity of businesses and workers.
- Brazil must increase investment in education and infrastructure, raise the number of engineering students and the quality of transport and communications.
- Smart places cannot emerge without ensuring a high quality of life. This includes the provision of services to all residents and adequate security, transportation and educational programs.
- While programs and institutions to spur innovation are important, entrepreneurs actually create value. Whereas as any location can build innovation centers, they cannot all attract the human capital that create game changing technologies and ideas.
- Locating US-Brazil partnerships can be as easy as identifying problems and challenges that are present in each country and establishing joint institutions to find solutions.

FACTSHEET

Moderator

Eduardo da Costa - Director of Innovation, Funding Body for Studies and Projects (Finep)

Panelists

James K. Clifton - CEO, Gallup Inc. | Michael M. Crow - President, Arizona State University | Meyer "Sandy" Frucher - Vice Chairman, NASDAQ OMX Group, Inc. | Paul Mascarenas - Vice President, Engineering – Global Product Development, Ford Motor Company | Lee McIntire - Chairman and CEO, CH2MHill | Hermann Ponte e Silva - Vice President for Organization and Human Resources, Embraer | Frank Trocki - Chancellor, Montana State University-Northern

Comentator

Flávia Grosso - Superintendent, Free Zone of Manaus | Vinicius Nobre Lages - International Affairs Manager, Sebrae Nacional

Antônio Henrique Silveira

Leadership Dialogues

The New Innovation-Based Trade Model

Background

United States Under Secretary of Commerce for International Trade Francisco Sánchez, Secretary for Economic Monitoring , Ministry of Finance Antônio Henrique Silveira and the Foreign Trade Secretary, Ministry of Development, Industry and Foreign Trade of Brazil, Welber Barral, participated as speakers in a round of leadership dialogue focusing on commerce.

The three leaders' speeches reflected their efforts, and those of their governments, to create policies and practices to stimulate trade and growth based on innovation in the United States and Brazil.

Sánchez summed up the purpose of the commercial dialogue: "It will be the private sector that will stimulate growth. Government can hamper or help."

He and Barral highlighted measures to be implemented in key areas, with the capability of improving the ecosystem of innovation in both nations, including easing the entry of products into each country, the establishment of standards and protection of intellectual property. Silveira then presented a view of Brazilian economic policy and advances since 2002.

Brazil and the United States are discussing ways to improve the regulation of international banking. Changes that took place in the United States after the international financial crisis, together with the lessons from Brazil's speedy recovery can serve as a model for the rest of the world, highlighted Antônio Henrique Silveira, Secretary of Economic Monitoring, Ministry of Finance.

Information sharing is an open road to progress

United States Under Secretary of Commerce for International Trade Francisco Sánchez highlighted the importance of innovation in commercial relations between Brazil and the United States and stressed that information sharing is essential for increases in trade.

"The world can advance for the benefit of all humankind if information is not held back. Information denied is progress deferred. And progress is absolutely vital for our future, for our hemisphere, for Brazil and the United States," he emphasized.

According to the Under Secretary, Brazil has proved it is the most innovative country in Latin America in several areas, such as agriculture, construction, IT services and aeronautics.

For this reason, he said, this conference is of huge importance for evaluating the technological progress the two countries can make individually, and together, if they continue sharing information that is basic for research, science and learning.

Sánchez cited studies carried out by scientists in São José dos Campos, New York and Texas that will enable the use of lasers as rocket fuel instead of traditional

fuel. "The implications of success here are enormous. Vehicles running on lasers can really revolutionize the universe," he attested.

So many changes have taken place in Brazil that the country is not the same as of old, or even a generation ago.

In Sánchez' view, Brazil is a global leader possessing one of the best research organizations in the world, Embrapa. He also reminded his audience that the country is engaged in innovative studies for the prevention of disease in corn, cotton, soybean and sugar cane as well as developing a new kind of wheat suitable for the tropics.

His confidence in Brazil's prospects was emphatically expressed. "We must expect no less of a country that has the word progress on its flag, and nothing is a better symbol of Brazil's image of progress than the transformation of the cerrado, which made Brazil a food superpower."

The Under Secretary of Commerce spoke of Brazilian farmers who use new land management techniques to increase production, while consuming fertilizer and less water. "These are the signs of a nation on the way to innovative thinking," he stressed.

The examples cited, in Sánchez' opinion, show that Brazil is fully positioned to be great and influential to the entire hemisphere.

The Under Secretary's vision for hemispheric competitiveness requires elevated innovation, open markets and information sharing. "We expect to build U.S. - Brazil trade relations by means of innovation."

The Foreign Trade Secretary of Brazil's Ministry of Development (MDIC), Welber Barral, in turn, described the 2nd U.S. - Brazil Innovation Summit as extremely important for the two countries' governments to learn about the private sector's difficulties and to identify new ideas into the agenda for bilateral negotiations.

According to Barral, Brazil and the United States are committed to trade dialogue not only to solve pending issues related to the sector, but also to coordinate Brazilian and U.S. government agencies and develop a positive agenda for trade between the two nations. "We've come a long way in recent years and we've chosen innovation as the core matter in our relations," Barral recalled.

The MDIC secretary said working groups established to examine technology, trade and intellectual property are helping to formulate solutions for inbalances between the two nations.

"We have a mature relationship with the U.S. We can't think of the commerce of products alone, we must also think of services, investment and regulatory matters," he stated.

Barral emphasized the importance of the bilateral working group on standards to eliminate a potentially damaging barrier to trade. Barral continued, stressing that Brazil and the United States share core values and the belief that democracy, individual initiative and economic development are means to mitigate social problems.

Barral also addressed the need to streamline processes for bilateral trade between the two nations. "When doing business becomes too expensive because of licenses, certificates, standards, visas and logistics costs not covered by agreements, it means a burden not only for traditional business but also for innovation."

For these reasons, he added, "We've worked hard on collecting the private sector's suggestions and using their ideas to change and improve the regulatory system between the two countries."

Barral also stressed that innovation creates the need to quickly establish standards, because every new product has its own. "If we don't agree on these standards. And they may become barriers to international trade."

The secretary declared himself "very interested" in the work being performed by Inmetro and NIST to align standards, not only for ethanol but also for smart grids, food and medical equipment. "These partnerships help facilitate trade between the two countries," he explained.

> ***"The free flow of information is key to the progress of any nation. The world can advance and benefit all humanity if information is not held back. Progress is absolutely vital for our future, our hemisphere, for Brazil and the United States."***
>
> *Francisco Sánchez*
> *United States Under Secretary of Commerce for International Trade*

In his view, one challenge facing Brazil and the U.S., is finding a way for standards adopted by the two countries to be used in third markets. "No country is working as hard on the subject as we are, or with such sturdy dialog," he assured the audience.

Barral urged the involvement of the private sector in this process and encouraged specific recommendations that will make the outcomes of this dialogue more robust.

Growth and stability

The institutional design of Brazil's 1990s macroeconomic policy remains the same today, with targets for inflation, fiscal responsibility and flexible exchange rates. The difference, according to the Ministry of Finance's Secretary of Economic Monitoring, Antônio Henrique Silveira, lies in how these policies are applied.

Whereas the primary concern of the 1990s was to control inflation and ensure fiscal stability, the objective of modern Brazilian policy has been to boost growth while maintaining stable prices and ensuring reductions in wealth disparities.

In his presentation, the secretary stated that inflation targets have been steered toward enabling a progressive reduction in interest rates without losing price stability. Annual inflation rates since 2005 have remained within targets.

> ***"We share core values with the United States – democracy, individual initiative, economic development as a means to mitigate social problems, and freedom of ideas. When we think about these shared values, we can see that this is the philosophical basis and foundation for innovation."***
>
> *Welber Barral*
> *Foreign Trade Secretary, Ministry of Development, Industry and Foreign Trade*

"Real interest, which was about 7% to 8% at the beginning of the Lula administration, is now 4% to 5%."

Silveira highlighted that Brazil and the United States are discussing ways to improve international banking regulations, and that changes taking place in the United States after the international financial crisis, along with Brazil's rapid exit from the downturn provide lessons for the rest of the world.

United States Under Secretary of Commerce for International Trade, Francisco Sánchez, and the Brazilian Ministry of Development, Industry and Foreign Trade's Secretary of Foreign Trade, Welber Barral, discussed methods to enhance the innovation ecosystems in both nations. CoC President and CEO Deborah L. Wince-Smith moderated the discussion.

The Ministry of Finance secretary explained that Brazilian fiscal policy was designed to enable reduction of indebtedness relative to GDP while improving distribution of income in the country.

A new target was added in 2007 to encourage public and private investment in infrastructure to meet the growing needs for updated physical and social infrastructure. He highlighted the decision, taken in 2009, to keep primary surplus at comfortable levels.

With regard to exchange rates, Silveira noted that the intention at the beginning of Luiz Inácio Lula da Silva's administration was to stabilize the real-dollar exchange rate. "At first there was an increase in exports due to the exchange rate and world growth. At the same time we began to create a comfortable position in terms of reserves, which was severely criticized for years."

In 2008, Silveira stressed, the accumulation of reserves proved its worthiness. The financial crisis effected Brazil severly but unlike in the past, the public sector held a positive balance relative to external debt and was in a position to respond to the demands of the crisis.

These accumulated international reserves enabled the government to provide the private sector special credit lines, avoiding a more serious impact on the economy.

In the years ahead, the Brazilian government will have to intensify action in some areas to improve competitiveness. The first is the tax system, which is inadequate and needs change.

It will also be necessary, according to the secretary, to create a coherent fiscal policy to keep control of the percentage of public debt with respect to GDP and steer public spending toward investment. Additionally, he warned, it will not be possible to continue indefinitely the country's programs for transferring income.

Another important economic matter for Brazil is elimination of the inheritance of price indexation in long term contracts, which continues to pressure inflation. This measure will enable a reduction of nominal and actual interest rates to levels more compatible with an investment-oriented society.

There also must be a commitment to encourage private banks and capital markets to participate in long term financing, relieving the pressure on the state development bank, BNDES.

Poverty Reduction is Dependent Upon Innovation

Background

World Bank Executive Director Rogério Studart and the President of the Funding Body for Studies and Projects (Finep), Luís Fernandes, offered remarks during the Summit's afternoon leadership dialogue on the subject of Financing Innovation in Brazil.

As World Bank's representative, Studart discussed the vital role of innovation in fighting poverty. Fernandes presented a general view of Brazil's current innovation policies and specifically those of his own organization, Finep.

Objectives and targets

As the main objective of the World Bank (IBRD) is to reduce poverty, the establishment of innovation in developing nations is both crucial and strategic, Executive Director, Rogério Studart, emphasized.

In his view, the challenge is even greater for developing countries because in addition to having to meet targets for reducing poverty, they also have to deal with the consequences of climate change.

"Even if everyone is affected, it's the poor countries who'll suffer even more due to the fact that they don't have enough resources to confront the consequences," he warned.

Innovation, said Studart, is likely the only solution to help developing countries to handle these challenges. "This is why innovation and knowledge have to be on the agenda everywhere, especially within multilateral entities."

Photo: Sadão Stefano/CDN

Studart highlighted that many developing countries do not have the same resources as Brazil to confront difficulties.

These realities illustrate the necessity for entities like the World Bank to incorporate an agenda of creating innovation ecosystems in the countries in which they operate.

However, limited finances present a major challenge to achieving this goal. "It's a worldwide problem. Few countries have put private mechanisms in place to finance innovation. And the situation is even more dire in developing countries," Studart recognized.

Finep President Luís Manuel Rebelo Fernandes highlighted key developments in the development of an innovation ecosystem in Brazil and expressed ideas about the possibility of partnerships between Brazil and the United States.

Fernandes noted that Latin America is the region in the world recording the greatest relative growth in scientific and technological production over the last three decades, despite having started behind Europe, the United States and Asia. According to Fernandes, Brazil is the driving force behind this performance.

As an example, he mentioned that the number of scientific articles by Brazilians in international publications is 2.7% of the world total, as compared to 0.8% in the early 1980s. This percentage is well above Brazil's approximately 2% share of world GDP.

According to Fernandes, this performance is the result of consistent long term public investment programs in science and technology.

He predicted that total Brazilian investment in science, technology and innovation would reach about 1.3% of GDP at the end of 2010. "This places us in an intermediate position in the world, alongside countries like Russia, Italy, India and Spain, but behind the United States, which invests 2.7% of its GDP in these areas.

The President of Finep stressed that Brazil is committed to reaching U.S. levels of R&D investment as measured by percentage of GDP within of one generation.

This commitment is a consequence of a decision to place innovation at the core of Brazilian industrial development and to use it to lead economic growth.

Taking into account total resources invested in science, technology and innovation, roughly 7.8% is government investment, which places Brazil at the same level as countries like the United States, that have have higher levels of R&D expenditures as percentage of GDP.

Public funding for science, technology and innovation in Brazil has increased and will continue to do so. As an example, Fernandes mentioned the tenfold growth in expenditures since 2002 that will reach the R$ 4.5 billion mark this year.

> ***"Developing countries are facing the challenge of having to become more competitive while climate change is draining their resources and poverty has not been overcome. Innovation may be the only solution to overcome these challenges. This is the reason why innovation and knowledge must be on agendas for development, especially those of multilateral entities."***
>
> *Rogério Studart*
> *Executive Director, World Bank*

Brazil, he believes, will encounter no obstacles to continued investment of public resources in these segments because, despite the world economic crisis, the country reduced public debt.

"Our main challenge is stimulating and promoting public support and coordination for the significant growth of the private sector's investment in research, development and innovation," he asserted.

Finep's president said there are great opportunities and potential for Brazil-U.S. partnership and there is interest in stimulating the installation of R&D centers of United States labs and companies in Brazil, United States investment of venture capital, association of networks of Brazilian and United States incubators, and partnerships between universities and technological institutes.

Fernandes also highlighted the existence of different mechanisms for funding research, development and innovation projects with public resources available in the country.

Specifically, he highlighted the avenues to obtain credit through Finep and BNDES with conditions favorable to those engaged in innovation-related activities.

These programs can also subsidize public and private sector innovations, and research at universities and technological institutes. Additionally they serve to provide exemptions for investments in R&D carried out in Brazil and subsidies for networks of technological incubators.

Smart infrastructure for innovation: What is in the 21st century toolbox?

Smart infrastructure for innovation: What is in the 21st century toolbox?

Smart infrastructure is vital for innovation. The economic growth of nations and the competitiveness of enterprises is increasingly linked to access to an innovative ecosystem and employment of leading technologies.

The smart infrastructure panel brought together executives and government to identify what is in the "21st century toolbox" for the stimulation of innovation.

Qualcomm CDMA Technologies Senior Vice President of Product Management, Cristiano Amon, reinforced the criticality of public and private collaboration to enable massive adoption of new technologies as well as the importance of such activities in the modern economy.

"The economy is going digital, governments are becoming e-governments and the population wants around-the-clock internet access everywhere," he noted.

Amon detailed his experience in the telecommunications industry to link success in an online economy with access to the most advanced technological infrastructure.

Amon views the emergence and expansion of 3G and 4G services as creating significant business opportunities within Brazil and the United States, but additional investments and infrastructure must be constant to enable access to increasingly larger and faster communications networks.

Infrastructure and Investment

The General Director of Telefônica do Brasil, Mariano de Beer, stressed that there can be no innovation without investment in infrastructure. For this reason, his company has invested, over US$ 7 billion in Brazil since it was privatized in 1998. "Last year we were the country's largest private investor in infrastructure."

These investments have facilitated what De Beer believes is the most innovative e-government initiative in Latin America.

Beginning in partnership with the state government, over 600 cities spread over the state now have access to e-gov, which functions in spaces known as Poupa Tempo (Time Saving), offering services ranging from the issue of passports to vehicle licensing.

Investments in optical fiber in Brazil will enable all homes serviced by the company to have broadband internet access at speeds in excess of 1G in five years' time. "It's our job to provide the infrastructure that gives people the capability to innovate and provide more services."

With an eye on opportunities provided by expansion of the internet and new technologies, Bematech offers services to consumers and small businesses.

Bematech's CEO Carlos Seara da Costa Pinto is leading the development of products that capitalize off of the increased networking of the world's computer systems, social networks and information exchanges.

In five years every home in São Paulo State serviced by Telefonica will have access to broadband internet at speeds in excess of 1GB

Since 1998, Telefônica do Brasil has invested over US$ 7 billion in technological infrastructure in Brazil

Wi-Fi service, once considered a useless spectrum, has become an industry with a US$ 4 billion turnover

Investment in technological infrastructure creates business opportunities

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Bematech's technology is changing the way both consumers and companies approach point of sale transactions. "We have no doubt that this exchange is going to happen more fluidly and make the difference for us and the customer," he stated.

The work of regulatory bodies such as the U.S. Federal Communications Commission (FCC) are another essential contributor in building smart infrastructure.

"We must be innovative and flexible," said FCC International Bureau Chief Mindel de la Torre. She added that her agency is increasingly being recognized as one that can help the growth of companies and aid the common goal of accessing greater amounts of bandwidth.

De La Torre summarized the challenges posed by the need for larger and larger amounts of bandwidth. "We see a growth of 30 or 40 times the breadth of the band of telephones and devices like iPads and we, the regulators, have to find a place for companies to use these spectra, which means basic infrastructure for cell phone services." Regulators like the FCC can locate bandwidth for these devices by effectively managing and allocating the existing infrastructure.

This management is an innovation in itself. The United States according to Mindel, was the first country to auction frequencies that were freed at the time of the transition from analog to digital TV.

"What happened with that band is interesting. There was neutral technology. Any company wanting to enter could do so. And then there came Qualcomm with a television application for cell phones".

"Other companies such as Verizon and AT&T arrived with 4G applications. We saw satellite operators buying these spectra, but we still don't know how they're going to use them. All these applications are new and should create a very interesting ecosystem."

> ***"The economy is becoming a digital economy, governments are becoming e-governments and the population wants access to the internet at all times and everywhere."***
>
> *Cristiano Amon*
> *Senior Vice President of Product Management,*
> *Qualcomm CDMA Technologies*

The FCC is now freeing up bandwidth by working with Congress to manage the "white spaces"associated with TV rights. The spaces, left over from TV operators not making use of their allocated bandwidth exemplify the FCC's efforts to maximize existing infrastructure.

Technology firms are now seeking to purchase white spaces for different applications such as Wi-Fi for university campuses. "If you're familiar with the subject, you'll know that Wi-Fi started as a kind of junky band that people used for different purposes. Now it's a US$ 4 billion industry. In other words, it has become an extremely valuable band."

As of the Summit, the FCC and Congress were negotiating authorization to resell spectra that have already been auctioned but are not used. "Companies would receive financial compensation and free up unused spectra to be auctioned again and better used," explained De La Torre.

Standardization

The establishment of common standards in Brazil and the United States help to facilitate both innovations, commercialization and trade. A key figure working with standardization in Brazil, Inmetro President João Alziro Herz da Jornada, stressed that government laboratories must maintain a close working relationship with industry to ensure its efforts are supporting innovation and the development of economic growth.

"We've invested in high standard, efficient labs with broad enough structure for science and innovation," he described. According to Jornada, one of Inmetro's priorities is attracting increasing numbers of high quality talent. A few years ago the institute had only four employees with a PhD. Today this number has risen to 180.

Jornada discussed his view of the benefits of intelligent infrastructure as possessing a capability of anticipating needs and enabling society to adapt to new demands. As an example he mentioned the production by Inmetro of

the first device to gauge biofuel quality to be recognized globally.

"It's an extremely important innovation, transforming biofuels into a commodity," he said. The development of this gauge, as he explained, reinforces the need to develop networks and greater interaction with industry and international measurement laboratories.

Patrick Gallagher, Director, National Institute of Standards and Technology, United States Department of Commerce, agreed with the need for cooperation between the two countries' agencies and institutes, particularly as the economy continues to assume a border-less and digital make up.

"In addition to this, technological infrastructures move between the public and private universes, and how they are worked will be a determining factor for the future," he added.

International concern over the future of fossil fuels has governments around the world seeking solutions such as clean energy and smart grids. Detailing the enormity of this endeavor and the incorporation of technology into the process, Gallagher expressed the necessity for a broader coalition to be involved in the development of these technologies than in the past - including enties such as InMetro and NIST.

Investment in technological infrastructure creates business opportunities, but also access to capital.

Kyle Ryland, Managing Director, Silver Lake, a company specializing in investments in technology with NASDAQ and Skype in its portfolio, considers smart infrastructure to be essential because it represents the intersection of everything considered key for innovation - people's talents, government policy, regulatory environment, entrepreneurship, market attitude and capital investment. In his view "Brazil brings together all these characteristics."

Ryland detailed his firm's current focus on companies in the area of smart networks for energy and IT in the medical field. He also seeks partnerships with Brazilian companies that are market leaders. Ryland mentioned one of Silver Lake's holdings, Locaweb, which specializes in web hosting and providing internet services in Brazil.

Ryland explained the validity of the investment, stressing that local networks bring together capabilities and competencies that lead to capital formation and the attraction of investors. "We saw an opportunity to expand a model of local networking, not only in Brazil but also in other parts of Latin America and, potentially, around the world.

Development of technological infrastructure to support financial markets is vital for the unification of global capital and enables investors access to offerings in markets around the world. In the view of David Schuler, Managing Director for Alliance and Venture Management, CME Group, Brazilian markets successfully adopted new technologies to open investment opportunities to global investors but must still enact measures to ensure they remain in line with the world's leading exchanges.

> ***"Brazil has all the ingredients to become a world financial center, but some key points still need improvement, such as are areas of regulation, tax policy and exchange rates."***
>
> *David Shuler*
> *Managing Director, Alliance and Venture Management, CME Group Inc.*

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“ One of the great advantages of technological infrastructure is that it levels out competitiveness conditions, so small and medium-sized companies enjoy access to world class technology, which is reliable and high performance, at a lower cost”, Kyle Ryland, Director, Silver Lake.

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"The outcome of this process is capital formation," he explained. Shuler believes that Brazilian banks may have come out of the financial crisis stronger than banks in the United States and elsewhere.

"Brazil has all the ingredients to become a world financial center, but some key points still need improvement, such as the areas of regulation, tax policy and exchange rates," he warned. The Alliance and Venture Management executive believes Brazil will play an increasingly important role in the global financial scenario that will enable it to create jobs in the sector.

Schuler cited a survey carried out in the New York City metropolitan area that measured 30% of the jobs in the area to be directly or indirectly linked to financial services.

As introduced by Kyle Ryland, one of the great advantages of technological infrastructure is that it levels out competitiveness conditions, so that small and medium-sized companies enjoy access to world class technology, which is reliable and high performance, at a lower cost.

According to Ryland, as companies such as Bematech offer solutions to small companies with fewer than 30 employees, they are assuring them access to cutting edge technology and aiding their ability to expand.

Telefônica's Mariano de Beer emphasized that Brazil and the United States can collaborate in the area of supplies. In similar fashion, the cell and broadband sector can cooperate. "This is what's going to boost development of small and medium-sized companies; it'll enable them to innovate and do their marketing on the web. This represents a challenge to make broadband available to all."

Qualcomm's Cristiano Amon agreed that access to broadband is urgent and needs to be solved quickly. "Everything is becoming mobile technology, which requires broadband."

The next step, he believes, "is to guarantee everyone access to broadband, because this is what enables business on the internet. The challenge in most countries, therefore, is to make broadband available to everyone at low cost."

Practical examples of business stemming from broadband access are applications for smart phones that enable direct payment at retail outlets.

Carlos Seara discussed how his firm's presence in point-of-sale payment technology from individual cell phones enhance the sales capacity of small business. He forecasts shorter queues and a quicker and more efficient purchasing process.

CME Group's David Shuler stressed the importance for Brazil to adopt best international standards. The "jabuticaba effect" (an expression coined after a fruit existing only in Brazil) must be avoided by discarding models that are only pertinent to the needs of the Brazilian market.

Shuler believes Brazil must advance to the next level of its development and globalize, offering relevant products of an international standard. "It's important to choose the best standards, implement them and avoid local ones that may have been adequate for Brazil but are now useless for the rest of the world."

Panel commentator Lúcia Melo, President, Center for Management and Strategic Studies (CGEE) of the Brazilian Ministry of Science and Technology, stressed two of the subjects discussed by the panel during her remarks. In her view, discussions dealing only with smart infrastructures will not advance beyond the technological dimension. "But if we talk of infrastructure for innovation, then we can take other dimensions into account," she attested.

> ***"We have invested in high level laboratories, efficient and with wide enough structure for science and innovation."***
>
> *João Alziro Herz da Jornada*
> *President, Inmetro*

The president of CGEE has no doubt that expansion and access to broadband are important for the economy, but they are not the only points to focus on. "We need to be aware of the scientific content of these new technologies. For this reason, a collaborative program in the area of technology, software based on science, would be of huge interest to Brazil. Especially so if there were cooperation between the government and the private sector."

A more favorable environment for business and innovation

Smart infrastructure is a facilitator for business and economic activity. In a globalized marketplace, the implementation of this infrastructure is essential to enable competitive business and institutions.

Outside of the commonly thought of components of this infrastructure such as broadband access and communication networks, smart infrastructure must include standardization, capital markets, elimination of bureaucracy and strong institutions.

Brazil is presently strengthening its own infrastructure for innovation and policies designed to raise national competitiveness.

Brazil has recognized the challenges to be confronted to ensure the institutional, financial and legal security necessary for investment in the country. Logistics, taxation, labor relations and reducing administrative barriers to investment are key areas where innovative policies can elevate entrepreneurship and the creation of new ideas.

Since 2004 (the year a specific regulatory framework was put in place), Brazil has introduced a series of measures to encourage an environment that supports innovation.

Recent advances in the legal system support Brazil's business environment. Some aspects of the system are further advanced than others, such as the new bankruptcy law by which concordats have been replaced by judicial reorganization - a more efficient mechanism to prevent a company from going bankrupt.

Another improvement was the adoption of International Financial Reporting Standards (IFRS), with the benefits of closer conformity to international standards, greater transparency, better management through balance by segment, greater ease of credit, and acquisitions and mergers.

The country has also made considerable progress in the issue of governance. Brazil's consolidation of capital markets, with CVM (Securities Commission) and BM&F/Bovespa (Stock Exchange) leading the process, has strengthened the perception of the country's capital markets as exchanges of credibility, stability and transparency.

In some areas, such as bank regulation, Brazil has become a model for the world. At the time of the international crisis, Brazilian bank regulation protected the financial system from exaggerated risk, as occurred in OECD countries. Both Brazilian legislation and the actions of its central bank are making it a standard for regulatory review in Europe and the U.S.

The national judiciary system has also improved, especially Electronic Justice - Brazil's large initiative to automate the entire system of lawsuits, using the internet to reduce bureaucracy and more public exposure of the system.

David Shuler, Kyle Ryland, Carlos Seara da Costa Pinto, João Alziro, Herz da Jornada, Chad Evans, Patrick Gallagher, Mindel De La Torre, Mariano de Beer, Cristiano Amon (left to right) discussed the role of smart infrastructure in fostering innovation.

Conclusions

The global economy is becoming increasingly digital and availability of technology is necessary to elicit the innovative potential of societies. Investment in technological infrastructure requires increasing investment in broadband, and better utilizing existing spectra in telecommunications networks.

Regulatory agencies such as the United States Federal Communications Commission must work in close proximity to telecommunications companies to create innovative solutions that maximize broadband and spectra utilization efficiency.

Institutions that create measurements and standards play a critical role in the innovative process. Inmetro in Brazil and NIST in the United States have great incentive to work together to create market opportunities for innovations and necessary certainty for innovators.

Rather than be reactionary, smart infrastructure must be designed to anticipate the needs of society.

Technological innovation enables small and medium-sized companies to operate on an even field with larger entities. This included innovations that offer broader access to capital markets.

Brazil possesses the conditions to be a leading financial center but the system remains embedded with standards and practices only adept for the Brazilian system. Adoption of global standards is necessary to advance as a leading global exchange.

Brazil and the United States, through Inmetro and NIST, have established a foundation for collaboration between the two nations, already creating joint standards for biofuels.

FACTSHEET

Moderator

Chad Evans - Senior Vice President, Council on Competitiveness (CoC)

Panelists

Cristiano Amon - Senior Vice President of Product Management, Qualcomm CDMA Technologies | Mariano de Beer - Director General, Telefônica do Brasil | Mindel De La Torre - Chief, International Bureau, Federal Communications Commission (FCC) | Patrick D. Gallagher - Director, National Institute of Standards and Technology (NIST), U.S. Department of Commerce | João Alziro Herz da Jornada - President, Institute of Metrology, Normalization and Industrial Quality (INMETRO) | Carlos Seara da Costa Pinto - CEO, Bematech S/A | Kyle Ryland - Managing Director, Silver Lake Sumeru | David L. Shuler - Managing Director, Alliance and Venture Management, CME Group Inc.

Discussant

Lúcia Melo - President, Center for Management and Strategic Studies (CGEE)

Making Things: What Does Manufacturing Look Like in the 21st Century. And how can the United States and Brazil lead?

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Making Things: What Does Manufacturing Look Like in the 21st Century. And how can the United States and Brazil lead?

Framing the conversation for the Summit's final panel discussion, João Ferraz moderator and Director, National Bank for Economic and Social Development (BNDES), discussed the lasting effects of the recent economic crisis - reduced risk capital for entrepreneurial enterprises, slowed economic growth and intensified competition.

These realities raise a series of questions for the future of manufacturing, including whether Brazil and the United States are prepared – or preparing – for the new manufacturing of the 21st Century, whether the two countries will manage to be strategic partners in a world of fierce competition and geopolitical uncertainty and how to best incorporate the university and educational system, particularly in the area of science and engineering.

To discuss these issues and attempt to identify areas for Brazil and the United States to partner, Mr. Ferraz was joined by a comprehensive panel of manufacturing entrepreneurs, human capital specialists, investors, academics and researchers.

250 million people presently work outside their countries of origin

Manufacturing output will increase consistently for the next 15 years

IT and manufacturing

The merger of technolgy and the manufacturing process was quickly identified and critical to contemporary manufacturing competitiveness. Intensive human labor manufacturing will continue to migrate to locations throughout the world with low labor costs. However, advanced technology levels the playing field, particularly in the production of high value added goods.

Brazil and the United State's high competitive positions in technology offer not only a chance to counterbalance the manufacturing centers of Asia but also opportunities to partner in a manner that is mutually reinforcing.

David Arkless, President, Global Corporate & Government Affairs, Manpower Inc., leads a human resources company with access to four million workers operating in corporations around the world in numerous industries, including Brazil and the United States.

Manpower estimates that about 250 million people live outside their countries of origin for professional reasons, highlighting the mobility of labor and importance of robust talent attraction strategies. Due to the financial crisis, says Arkless, there has been acceleration of labor arbitrage both in the United States and countries with lower production costs.

"Because of the disintegration of classic manufacturing in the U.S., a great many people have started saying that the Americans have become the only true service economy in the world. My customers and I believe the answer is no, mainly because of advances in technological trends and emerging manufactures," he expressed.

Arkless relayed the results of a survey his firm has lead to measure the future of United States manufacturing, projecting output to increase for the next 15 years because of technological advances and digital design.

Arkless added that the findings display the need for an effective symbiotic relationship between Brazil and the United States that enables them to compete with the two largest emerging countries.

"It doesn't take a genius to realize that those two countries are India and China. Brazil must make use of its natural advantages to attract United States direct foreign investment," he explained.

In his view, the United States should continue investing in innovation, attracting talent, and making large investments in education and R&D.

"The U.S. will continue to produce in other countries, but only labor intensive products. High design products will stay at home."

Opportunities and Challenges

Brazil is currently in 10th place in Manpower's ranking of countries with a global manufacturing presence. Arkless predicts that is possible for the country to advance quickly to 5th or 6th place if it establishes a special relationship with the United States.

However, for this to happen, the two countries' governments and private sectors must eliminate barriers hampering the advance of commerce.

Based on conversations with Manpower's leading cleints in both two countries, Arkless laid out seven points requiring immediate attention:

"Establish a special commercial relationship; a bilateral agreement allowing migration of workers between the two countries; a treaty on natural resources; a pact and partnership for green industry; extensive partnerships in education and training in the area of R&D; invest in multimedia companies; identify and develop entrepreneurs."

Arkless recognized that it is an ambitious agenda, but argued that it is the only way for Brazil and the United States to be successful in the face of fierce global competition. "The corporate world is brilliant when it comes to establishing partnerships. What slows down the process is unavailing and poorly implemented public policy."

Thomas Baruch, Founder and Managing Director, CMEA Capital, a venture capital company based in Silicon Valley, also considered a partnership between Brazil and the United States vital for the two countries to advance in the global market.

To Baruch, global competitiveness and global challenges now require innovation at unprescedented levels. "But we can't do it on our own. The time of going it alone is over, and Brazil is the ideal partner for the United States" said Baruch.

Baruch expressed optimism for partnership at the intersection of IT and genome research. "If we can marry U.S. genome-related knowledge to Brazil's natural resources and enterprising population, I believe we can produce excellent results."

Beginning his discussion of manufacturing's future, Altus Founder and Associate Ricardo Felizzola reminded the panelists that every organization's success is based on three principles: knowledge, leadership and method. "In my view, manufacturing is a kind of knowledge. With today's global environment, we have the option of manufacturing in different parts of the world, such as in Asian countries, but the most important aspect is obtaining knowledge."

Felizzola noted that, after past errors, Brazil is constructing a better environment for innovation. "And innovation depends on a good environment. That's the difference between Brazil and the U.S. The U.S. environment is a lot better than Brazil's. We're improving Brazil's environment, but we still have a lot of hard work ahead."

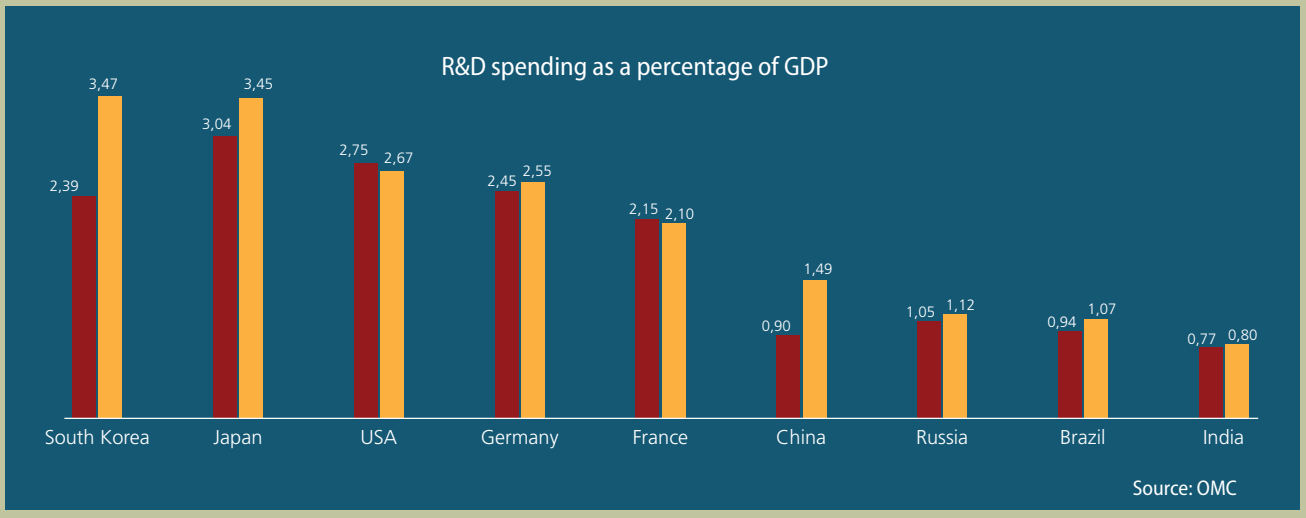
Manufacturing and Technology

General Electric, a manufacturing leader has traditionally maintained a strategy of massive diversification. Today, explained Director of GE Global Research Mark Little, the firm is in the process of divesting traditional holdings such

> ***"The international financial crisis will cause enormous changes to entrepreneurial practice and lead to a period of less accelerated growth and far more strained standards of competition. Countries managing to adapt to the rules of the game will draw ahead of the others."***
>
> *João Ferraz*
> *Director, National Bank for Economic and Social Development (BNDES)*

Innovation Enables a New Leap Forward in Manufacturing

In the 1990s, Brazilian industry made a great leap forward in productivity and competitiveness by implementing a coordinated strategy for quality in both production processes and final products. Today, Brazilian manufacturers understand that the route for a new leap forward is through increased investment in innovation.



Recent surveys like ABDI's Sondagem de Inovação (Innovation Survey) support the connection between a company's level of innovation and increased exports, corporate revenue and high-value job growth. But only 33% of Brazilian industrial companies are considered to be enagaged in some form of innovative activity (whether product, process, etc.). Brazilian industry has grown robustly in recent years but increased investment in R&D and raised attention to innovation are necessary to bring these companies to the next level.

Many Brazilian firms are beginning to embrace this concept. Olympikus, a Brazilian brand of sports shoes, has a 22% sales share domestically - the market leader. With an advanced product innovation policy and investments in R&D, the firm regularly releases new brands and products.

Embraer is heavily invested in research and product development. The third largest manufacturer of commercial aircraft in the world, with four thousand produced in 2009, is one of the most innovative Brazilian companies. Investments of US$ 200 million have been allocated for 2007-2012 for pre-competitive research alone.

The list of innovative companies in Brazil speads across a variety of industries - Petrobras and deep water exploration, Volkswagen do Brasil and biofuel technology, Vale and its solutions for renewable energy, Natura and O Boticário in cosmetics and personal hygiene, and TOTVS in the area of software.

With an expanding consumer market and increases in per capita income, the demand for ever more innovative products and services is growing in Brazil. However, Brazil is responsible for only 0.2% of the world's annually registered patents.

Brazil has attracted R&D centers of large multinationals, accumulated enterprising human capital and attracted private equity and venture capital. There has also been substantial efforts in reforming public institutions and the legal system. Despite these gains, more must be done to incorporate the development of innovation in the public and private sectors.

as NBC and Universal Studios to make larger investments in identified future growth industries.

"What we'll do now is enter the manufacturing sector and business based on technology in a more intelligent fashion. We're investing more money than ever in R&D," he informed the panel.

Little cited the case of a battery factory and digital mammography machines, the latter an estimated US$ 1 billion market. "We built them from nothing, and we decided to locate both production units in the U.S. This was not due to lower labor costs, but because we believe development of technology should be near manufacturing and the people who created the technology."

The GE Vice-President also mentioned the construction of a center for research, development and manufacturing in Michigan, one of the areas of the Unites States that has most suffered from the recession in recent years. "All this shows our faith in the skill of innovation and the need to manufacture products where the technology is developed," he observed.

GE's next step is to create a world class research center in Brazil to complement operations in the United States, India and Germany. "Why Brazil? Because the country is on an excellent growth path, we have significant customers there, we have identified strong university systems that are getting stronger, and we want our businesses near large customers like Petrobras, Vale and Embraer," Little stressed.

All these customers, he says, need world class technology to advance in business. "We're going to Brazil with faith in the system, and we're optimistic about the country."

James Phillips, of NanoMech, an investment company, said that the economic crisis has reduced investment across the world. But he is still optimistic because he believes that truly innovative individuals, whether in Brazil or the United States will find a way to bring their products and services to market.

"New technologies are going to change the whole scene," he stated. "We're looking at huge generation of innovation. The internet created a world without borders that has fostered and accelerated innovation like never before in history. They say that more things will be created in the next 20 years than in all prior history."

In the view of University of Tennessee's Interim President Jan Simek, universities will play a key role in the future of

Left to right: Jan F. Simek, James Phillips, Mark Little, Ricardo Felizzola, João Carlos Ferraz, Thomas Baruch and David Arkless discussed the future of manufacturing

manufacturing. He asserted the primary mission of higher education institutes to educate, but this process must be adapted to meet the realities of the 21st century.

"It's obvious that the scene has changed. Technology has become increasingly important in the process of education, and I don't just mean using technology to educate, but incorporating technology to prepare students for the global world they'll have to operate in."

Partnership with governments and the private sector will be vital for universities to prepare students who will work and develop the future of manufacturing. Simek referenced a recent initiative by the state of Tennessee around biofuels for transportation.

As Simek described, the university involved itself deeply in the project in partnership with DuPont and other companies, and became involved in all phase of the production and delivery process including marketing, distribution and logistics.

"It was great for the university because we got involved at all levels. There was dialogue between industry and the university such that we were able to identify needs and prepare students to meet market demands," he explained.

Unicamp's Carlos Américo Pacheco summed up the discussion, emphasizing that the new face of manufacturing is still a matter of debate, despite the existence of a number of certainties (virtualization, spatial distribution of production, etc.) Taking proper advantage of opportunities will depend on investment capability, development of talent and construction of ecosystems that support entrepreneurship and commercialization to global markets.

> ***"We (GE) have built up a battery business from ground zero. We have chosen to build the manufacturing for that business in the United States and in close proximity to the research center. Why is that? It's not because the labor is the lowest cost. It is because we believe the technology innovation and manufacturing innovation must go together to be successful."***
>
> *Mark Little*
> *Senior Vice President and Director of GE Global Research, General Electric Company*

Culture of Entrepreneurship

Creating an ecosystem that producers entrepreneurs must include a culture that promotes risk taking and the acceptance of failure - traits essential for any successful entrepreneur.

Entrepreneurship, in James Phillips' view, is a part of U.S. culture. As an example he mentioned Silicon Valley, with ideas being created and scrapped on a nearly daily basis.

"Here it's OK to fail. In Silicon Valley there is even a common phrase "fired on Friday, hired on Monday. There's a culture of entrepreneurship that encourages the creation of new businesses. You can't fail all the time, but there's no problem if you fail once or twice. That helps entrepreneurship in the country a lot."

In Jan Simek's view, what can be done in the 21st century is to start teaching in a broader and more dispersed fashion. "We teach entrepreneurship at business schools and probably at engineering schools. But we don't usually teach it in science, physics, and social science courses. All these places could be right for innovation, even though people aren't prepared to understand this. Thus, educationally, we need to treat entrepreneurship on a larger scale," he suggested.

Panel moderator João Carlos Ferraz, Director, National Bank for Economic and Social Development (BNDES), asked how a company like GE evaluated the value of failure.

Mark Little explained that as GE has a number of different interests and a large market share, the organization is based on risk taking. "We do lots of things, and a lot of them fail. The cultural difference in my team is that risk is rewarded and failure is accepted."

> ***"Innovation depends on good environments. That's the difference between Brazil and the U.S. The environment in the U.S. is much better than in Brazil. We're improving ours, but we have to work hard."***
>
> *Ricardo Felizzola*
> *Founder and Associate, Altus*

Offering perspective into the culture of entrepreneurship in the United States, Thomas Baruch expressed that in the last 25 years 40 million jobs have been created in the United States by companies with 20 workers or fewer. "It wasn't the big groups who created new work positions. All the increase in employment in the country came from small companies and entrepreneurial activity.

NanoMech's James Phillips criticized recent modifications for the awarding of work visas adopted by the United States. Philips noted that as the American taxpayer is funding higher education for foreign students, it makes little sense to return them to their countries of origin. "We're sending the new Einsteins home. The system's all wrong. Everyone who finishes a Master's degree here should automatically get a green card," he stated.

Conclusions

- Manufacturing's future in Brazil and the United States remains robust but must operate at the higher end of the value chain and incorporate each nation's competency in technology.
- The mobility of talent in today's marketplace requires strategies by firms and countries to attract highly skilled workers from around the globe.
- Large markets like Brazil and the United States will continue to have large manufacturing bases because many industries need to be close to their consumers.
- Highly skilled manufacturing that increasingly incorporates technology must be aligned closely with universities and the education system

FACTSHEET

Moderator

João Carlos Ferraz - Director, National Bank for Economic and Social Development (BNDES)

Painelistas

David Arkless - President, Global Corporate & Government Affairs, Manpower, Inc. | Thomas R. Baruch - Founder and Managing Director, CMEA Capital | Ricardo Felizzola - Founder and Associate, ALTUS Sistemas de Informática S.A, Teikon and HT Micron; Coordinator, Council for Innovation and Technology, Federation of Industries in Rio Grande do Sul (FIERGS) | Mark Little - Senior Vice President and Director of GE Global Research General Electric Company | James Phillips - Chairman, NanoMech | Jan F. Simek - Interim President, University of Tennessee

Discussant

Carlos Américo Pacheco - Professor, University of Campinas (Unicamp)

The Next Chapter in the U.S. - Brazil Innovation Journey: 2011 and Beyond

At the close of the 2nd US-Brazil Innovation Summit, the leaders of the Brazilian Agency for Industrial Development (ABDI), Reginaldo Braga Arcuri, Council on Competitiveness (CoC), Deborah L. Wince-Smith, and Brazilian Competitiveness Movement (MBC), Erik Camarano, reaffirmed their commitment to continue efforts of cooperation between Brazil and the United States in 2011 and beyond.

Accompanied by Georgetown University President John Jack DeGioia, United States Ambassador to Brazil Thomas Shannon, and Director, National Confederation of Industry (CNI), José Augusto Fernandes, they highlighted the summit's role in ongoing bilateral relations by committing to an upcoming series of Innovation Learning Laboratories in 2011.

National Confederation of Industry (CNI)

On behalf of the National Confederation of Industry (CNI), José Augusto Fernandes offered his entity's assistance and support to strengthen bilateral relations between the United States and Brazil. Recognizing the need to share information and for public-private partnership, he stated that, "All our successes in Brazil, in aeronautics to agribusiness, are a function of education and knowledge."

CNI's extensive cooperation in all spheres of the Brazilian public sector (most notably BNDES and the Ministry of Science and Technology) is currently speeding up prioritization of innovative policies in Brazil. As Fernandes summarized, CNI's efforts are disseminating awareness of the role of innovation throughout Brazilian industry and developing an agenda for improved insertion of innovation in the country's countless entities.

Fernandes made recommendations to integrate the Summit's findings into these efforts. His suggestions included a visit to Brazil by a delegation of American CEOs to discuss obstacles to innovation, involving U.S. participants in activities related to the Brazilian Congress on Innovation, extending discussions on the high cost of transactions (which many people in industry consider a barrier to bilateral economic relations), and setting up an industrial conference in Brazil to continue the partnership on what he believes is a key issue for the economic future of both nations.

"Tonight we're aware of the great challenges faced by our nations. We're also aware of our huge potential to take on and overcome these challenges. We recognize that by developing a deeper relationship between our countries, by building bridges between industry and academia and the public and private sectors, we can indeed serve our two peoples and all the global community. We can innovate together, progress together and prosper together".

John "Jack" DeGioia
President, Georgetown University

"When we look back in a few years' time, we'll see that this has been a very productive time, not only for our relationship as two great nations, but also in terms of what we can do for the world".

Deborah L. Wince-Smith
President and CEO, Council on Competitiveness

U.S. - Brazil Bilateral Relationship

As CoC, MBC and ABDI secured the future of their partnership, participants in the Summit's closing session remarked on the event's implications. CNI's Fernandes highlighted the importance of the United States in ensuring Brazil's economic growth. "Our partnership with the U.S. is a tool to meet the target of considerable growth." Chairman and CEO, Deere & Company, Samuel Allen summarized, "Today we've planted the seeds of cooperation. Let's ensure full cooperation to reap an abundant harvest of innovation and ideas."

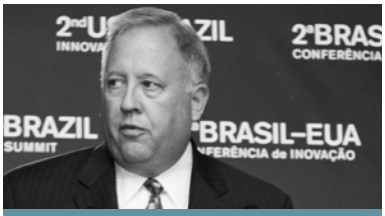
John DeGioia reinforced the wide implications of the bilateral relationship, "Tonight we're aware of the great challenges faced by our nations. We're also aware of our huge potential to take on and overcome these challenges. We recognize that by developing a deeper relationship between our countries, by building bridges between industry and academia and the public and private sectors, we can indeed serve our two peoples and all the global community. We can innovate together, progress together and prosper together."

In the words of President and CEO, Council on Competitiveness, Deborah L. Wince-Smith, "When we look back in a few years' time, we'll see that this has been a very productive time, not only for our relationship as two great nations, but also in terms of what we can do for the world."

As the world rapidly realigns to the new realities of the 21st century, the United States and Brazil, connected by common values, culture, geography and resources, are well aligned to work together to advance their societies and to meet the grand challenges that effect the entire world. Summarizing the sentiments and principles of the Summit, United States Ambassador Thomas Shannon observed, "It's not only about Brazil and the United States. It's about a much larger enterprise for the hemisphere and beyond."

"Today we've planted the seeds of cooperation. Let's ensure full cooperation to reap an abundant harvest of innovation and ideas".

Samuel Allen
Chairman and CEO, Deere & Company, and Chairman of the Council on Competitiveness



"It's not only about Brazil and the United States. It's about a much larger enterprise for the hemisphere and beyond."

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U.S. Ambassador to Brazil

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José Augusto Fernandes
Executive Director, CNI

FACTSHEET

The Next Chapter in the US-Brazil Innovation Journey: 2011 and Beyond

Samuel R. Allen - Chairman and CEO, Deere & Company, and Chairman of the Council on Competitiveness (CoC) | Thomas A. Shannon Jr. - U.S. Ambassador to Brazil | Erik Camarano - President, Brazilian Competitiveness Movement (MBC) | Reginaldo Braga Arcuri - President, Brazilian Agency for Industrial Development (ABDI) | Deborah L. Wince-Smith - President and CEO, Council on Competitiveness (CoC) | John "Jack" DeGioia - President, Georgetown University | José Augusto Fernandes - Executive Director, National Confederation of Industry (CNI)

Evaluation of Opportunities Ahead

The 2nd US-Brazil Innovation Summit was considered a success due to the depth of debate, seniority of the participants lists and establishment of a platform for the CoC, MBC and ABDI to enter the next phase of their bilateral relationship. In the section that follows, International Affairs Manager, Brazilian Agency for Industrial Development, Roberto dos Reis Alvarez, assesses future prospects for the US-Brazil Innovation Initiative. Included are the statements of government representatives and corporate leaders that contributed to the Summit's success.

US-Brazil Innovation Initiative: current state of affairs and the road ahead

Roberto dos Reis Alvarez | International Affairs Manager, ABDI

Brazil and the United States: partners in innovation?

As Reginaldo Braga Arcuri reminded participants in his opening presentation at the 2nd U.S. - Brazil Innovation Summit, there are vast similarities between Brazil and the United States. Both have populations with a diversity of colors, creeds and origins, varied industrial sectors, enterprising people, vast arable areas and abundant natural resources. We are two democracies of continental dimensions and we share the same values.

However, there are also many differences. One of the most prominent perhaps, lies in the sizes of our economies and their stages of development. The American economy is roughly ten times larger than Brazil's. In some areas, such as the venture capital industry, we are 20 years behind.

The United States, the largest world economy and an uncontested technological power, also enjoys a huge advantage in the field of innovation as compared to Brazil. It invests more resources, produces more scientists and engineers and has an enormous worldwide presence in economies and in the minds of all us consumers of products and solutions.

The good news is that this distance is growing increasingly smaller, which creates space for new kinds of engagement. Brazil has advanced considerably since the macroeconomic stabilization of the mid-1990s. With the ballast of a stable economy, policies put in place as of 2003 have proved effective in producing a new cycle of economic development, one of whose central axis is the generation of opportunities for a portion of the Brazilian population that had formerly been excluded from consumer society.

Since then, 30 million Brazilians have risen into the middle class. Today's Brazil melds social inclusion and economic growth, generating new markets. It is estimated that in 2010 the country will have grown nearly 7%, and forecasts for 2011 are encouraging.

This process is not taking place in a vacuum. It is taking place in an environment where Brazilian institutionalism is increasingly developed, and the country's technical and business skills are increasingly abundant and sophisticated. This is reflected in an increasingly significant international presence, leading to opportunities and projects flourishing abroad.

Since 2003, the increasing yearly outlay of the Funding Body for Studies and Projects (Finep), a governmental agency that funds technological R&D projects, has grown nine fold.

The 2nd US-Brazil Innovation Summit was attended by 150 Brazilians: executives from companies and government bodies, entrepreneurs and researchers – who were joined by 300 participants on the American side. The involvement of this community of Brazilian leaders leaves no doubt about ambitions for a new kind of engagement of Brazil with the United States, governed by the execution of innovative projects

Brazilian governmental organizations such as the Institute of Metrology, Normalization and Industrial Quality (Inmetro), substantially developed their competencies and structures and participated in positions of leadership in technological projects with colleagues from other countries, including the National Institute for Standardization and Technology (NIST), as described by João Jornada and Patrick Gallagher during the panel on Smart Infrastructure.

Entrepreneurial and technological projects emerged in this environment, such as Vale Soluções em Energia (VSE), which is to invest a value of U.S.$ 1 billion in technology for producing clean energy by 2014, as described to the panel on energy and water by the company's president, James Pessoa.

These examples are the result of Brazilian maturation. We have succeeded in improving our institutions and accumulating resources and capital – human, technical, financial, social. Brazil currently produces nearly 120 thousand professionals in science and engineering – including health and agricultural sciences - and over 10 thousand PhDs a year.

The contingent of Brazilian professionals who have earned MBAs abroad and in Brazil is growing. Many are expatriates who have worked for major transnational corporations and started up, capitalized and sold businesses – subsequently following on to new companies and disseminating business skills and experience in the productive sector. The capital market is growing and its governance is recognized as one of the best in the world.

Brazilian companies like Gerdau, Marcopolo, Embraer, WEG, Sabó, Natura, BRFoods, JBS Friboi, Totvs, Petrobrás, Randon, Tigre, Artecola, Odebrecht, Braskem, Coteminas, Vulcabrás, Itaú, Lupatech, AmBev/InBev and many others are present in global markets. The fact that entrepreneurship is growing in the country is also auspicious. According to Global Entrepreneurship Monitor, the rate of entrepreneurs through opportunity versus entrepreneurs through need is expanding in Brazil; moreover, in 2009 the percentage of entrepreneurs through opportunity in Brazil exceeded that in the United States.

Nevertheless, there is still much to be done. One of the main challenges concerns the promotion of innovation in the entrepreneurial environment – only one third of Brazilian industrial companies actually innovate. On account of this, the National Confederation of Industry (CNI) recently launched the Entrepreneurial Mobilization for Innovation (MEI), an initiative led by the CEOs of some of the major industrial enterprises in the country.

No country in the world possesses a stock of entrepreneurial resources and experience and an ecosystem for promoting innovation as substantial and well-developed as the United States. This suggests that Brazil has a lot to learn from American experience. Yet, we also have some to show, share and gather jointly with the United States. It is worth saying that Brazil is a global leader when it comes to innovation to solve major national issues.

In August 2010, The Economist magazine published an article highlighting the development of Brazilian agribusiness. From a food-importing country, we are now the third largest exporter in the world. Why? The Economist says there are three words to explain Brazil's success in producing food: Embrapa, Embrapa and Embrapa, a public enterprise and world leader in technology for tropical agriculture.

Brazil and the United States are experienced in the construction of public-private arrangements, with the U.S. as the world benchmark for large technological projects and business driven by the public sector

Other examples include electronic government applications (electronic voting, income tax system, computerized centers for integrated public services, etc.), as Telefônica do Brazil's Director-General Mariano De Beer reminded participants at the Summit. Brazil and the United States are experienced in the construction of public-private arrangements, with the United States as the world benchmark for large technological projects and business driven by the public sector.

There are today about 2 thousand technologies developed on the basis of NASA projects present in our daily lives, as the Agency shows in its website NASA Spinoff. Contemporaneously, the American Recovery and Reinvestment Act of 2009 includes

significant values to stimulate the use and creation of new green technology, companies and jobs.

Technological projects in the areas of defense, health and others must be added. In Brazil we have the emblematic cases of Petrobras and Embraer, among others. Emerging through government initiative, these companies' shares are now listed on NYSE and they are global players. They are leaders in technology and in their fields of business.

Brazil and the United States are partners with historical cultural and economic links. The stock of productive American assets in Brazil is in the region of the U.S.$ 200 billion mark. The rapid growth of the number of Brazilian investments in the United States, in contrast with a new generation of American companies and entrepreneurs that invest, and in many cases come and live in Brazil, is an encouraging scenario for the bilateral relationship.

Today's Brazil, which is managing to advance in the enhancement of its institutions and accumulate entrepreneurial resources, possesses both the right conditions and the ambition for a new kind of engagement with the United States. At the same time, the challenges (water, energy, security, city life, mobility, etc.) of today's world confront everyone and require global solutions. Thus, opportunities are also global.

The 2nd US-Brazil Innovation Summit was attended by 150 Brazilians: executives from companies and government bodies, entrepreneurs and researchers – who were joined by 300 participants on the American side. The involvement of this community of Brazilian leaders leaves no doubt about ambitions for a new kind of engagement of Brazil with the United States, governed by the execution of innovative projects.

The exercise of this ambition depends on the creation of different mechanisms for dialogue, identification of opportunities and concentration of action so that new entrepreneurial and technological actors can increasingly emerge and prosper, and be able to establish links and projects involving organizations in the two countries.

The path we travelled in the U.S. - Brazil Innovation Initiative has already borne fruit. We hope to involve more entrepreneurs (private, government) and organizations in both countries on the path we propose to travel from now on.

The U.S. - Brazil Innovation Initiative

The 2nd US-Brazil Innovation Summit is a milestone on a trajectory starting in 2007, when ABDI, MBC and CoC held the first edition of the Summit in Brasilia. Since then, we have come a long way together and the "U.S. - Brazil Innovation Initiative" has added on more partners and taken shape.

Upon the conclusion of the 1st US-Brazil Innovation Summit, we launched a "Call to Action" inviting organizations in both countries to work jointly with ABDI, MBC and CoC on the construction of an agenda for legal and regulatory aspects, on preparing a competitiveness index, on promoting contacts among CEOs and organizing the 2nd edition of the Summit. We advanced and obtained concrete results on all these fronts!

Throughout 2008 and 2009 we carried out ten Innovation Learning Laboratories, described earlier in this report. We had 80-90 participants in each, including CEOs, investors, researchers and managers of public organizations in Brazil and the United State Rather than merely running seminars, we managed to structure a platform for dialog that has successfully generated ideas and bilateral projects and promoted the relations necessary for their implementation.

These projects are carried forward directly by companies and universities participating in laboratories, whether involving the support of ABDI, MBC and CoC or not. On the basis of this experience and making use of the network of relationships established, we proposed a broader task: work together to confront global problems.

Similarly to what was done in 2009, the Innovation Learning Laboratories should be organized into blocks of two gatherings, each in a different country. Each block will cover a specific subject, analyzing it from the perspective of the four dimensions: talent, investment, infrastructure and opportunities.

Global challenges and opportunities

Today's world is marked by global challenges. To say this is not to use an often empty and common cliché in the economic and business media. It is about recognizing that there are indeed challenges facing every country, even if to different extents, and/or that can only be overcome by means of coordinated action on an international scale, as in the case of climate and climate change, for which there is no possibility of local or national solutions.

We highlighted five subjects – water and energy, bioscience and food, infrastructure, cities/regions and development and manufacturing – to be discussed at the 2nd US-Brazil Innovation Summit, as readers are well aware by now. In addition to being global and absolutely crucial for humankind's future and the prosperity of nations, these are matters for which Brazil has entrepreneurial and technological assets allowing engagement in complex but relevant projects.

The road ahead

At the close of the 2nd U.S. - Brazil Innovation Summit, the presidents of ABDI, MBC and CoC presented a document called "Call to Work". The idea behind it is to advance beyond discussion, making use of the relational and methodological bases established over the years in the U.S. - Brazil Innovation Initiative. Doing is the main challenge.

Rather than a simple exercise of wishing, we propose allocating resources and working with partner organizations to make it possible to foster and support implementation of projects that will lead to solutions for globally relevant problems and business for both countries.

The road ahead will take advantage of the successful platform of public-private discussion and linkage from the Innovation Learning Laboratories, coupling it with new instruments and partners.

The work agenda will include support for entrepreneurs for joint business, a concentrated effort to disseminate ideas and proposals for innovation involving both countries, links with the community of Brazilian researchers and executives in the United States, analysis examination of the legal and institutional environments for innovation in Brazil and the United States, and engagement with other countries.

Activities related to these subjects were embedded in "Call to Action". The road ahead will be marked by even greater engagement by the promoters of the U.S. - Brazil Innovation Initiative, in line with Brazilian development, resumption of American growth and new relationships established between organizations in both countries.

We believe these relationships can and should be deepened. The facts presented earlier regarding the internationalization of Brazilian companies and the occurrence of a new generation of American investment in Brazil contribute to this. The dialogue platform stemming from the Innovation Learning Laboratories will be used to catalyze new connections and projects, utilizing this framework and a network built through the first series of Laboratories in 2008 and 2009.

The road ahead will be marked by even greater engagement of the promoters of the US-Brazil Innovation Initiative, in line with Brazilian development, resumption of American growth and the new relationships established between organizations in both countries

The agenda for 2011-2012 Innovation Learning Laboratories will be directly linked to the analytical ideas behind the talent, technology, investment, infrastructure framework while considering a new dimension: opportunities.

Taking subjects discussed and opportunities identified at this 2nd Summit as a starting point, the new series of Laboratories will cover specific subjects including venture capital, health sciences, food production, water, sports events and others – there is a list in the "Call to Work" (attached to the end of this publication).

Similarly to what was done in 2009, the Innovation Learning Laboratories will be organized in blocks of two gatherings, each in a different country. Each block will discuss a specific subject, analyzing it from the perspective of the five identified dimensions: talent, technology, investment, infrastructure and opportunities. New Laboratories are planned for 2011.

Implementation of this new series of meetings will require construction of new connections and extending the community involved with the U.S. - Brazil Innovation Initiative since 2007. During the panel on food and health, DuPont's Chief Science and Technology Officer, Uma Chowdhry, stressed that creating such connections is one of the challenges in carrying out joint projects and facing global challenges discussed at the event.

The subject of food production will indeed be one of the first to be included in this new series of Innovation Learning Laboratories and the object of links with public and private partners in the months after the Summit, so that we can advance in the construction of such connections.

Creation of connections will not be through Innovation Learning Laboratories alone. ABDI, MBC and CoC will undertake an extensive communications initiative for the dissemination of ideas, opportunities and results generated in the scope of the U.S. - Brazil Innovation Initiative. This work will make use of different media and contribute to extend the network built thus so far, which will be conducted with a variety of documents and materials that can contribute to actions underway.

Work on expanding the U.S. - Brazil Innovation Initiative community will include a special effort to connect the Brazil diaspora in the United States. Today there are thousands of Brazilians in teaching positions in American universities and working as executives in technology firms in the United States.

At the same time, there is a growing number of American executives working and living in Brazil. These professionals are key to strengthen bilateral relations and, additionally, to generate new and innovative projects and business. The Innovation Learning Mini-Laboratories carried out during the 2nd Innovation Summit were attended by representatives of these two universes and have already opened the door for new activities.

On the Brazilian side, ABDI is to allocate human and financial resources for mobilizing and linking the Brazil diaspora in the United States. A practice community in Portal da Inovação (www.portalinovacao.mct.gov.br) has already been created and new means are in the process of implementation. A series of videoconferences will be carried out over 2011 involving Brazilians in the United States, who will be given selected information about opportunities for involvement in innovation projects in Brazil.

This circuit will be complemented by recognition of professionals whose action stands out in terms of promoting U.S. - Brazil innovation projects. This effort directed at the Brazil diaspora in the United States will enable the interaction of top level Brazilian professionals in discussions and initiatives essential to support Brazil's current strategic objectives as well as generating opportunities for business and projects.

Efforts to form the network and communities will be complemented by initiatives where researchers, professionals and companies in Brazil and the United States will be concretely involved in business and research projects, and acting jointly.

Support for a U.S. - Brazil entrepreneurship program should mobilize companies and entrepreneurs in both countries to establish these connections and develop their businesses. Actions in this program will be developed on the basis of relationships and co-incubation projects for companies stemming from the 2009 Innovation Learning Laboratories.

In its early stages the program will endeavor to create opportunities for Brazilian entrepreneurs to be trained, identify partners (for research, commercialization, development of products, financing undertakings, etc.) in the United States and, possibly, establish a presence in the country.

On another front, there are plans for implementing a US-Brazil program to examine the relationship of Law and Development. In the wake of discussions during the seminar on the subject of September 20, during the Summit, this program will foster joint study by Brazilian and American researchers of links between law and development, with emphasis on aspects related to innovation and relations between the two countries.

Besides the bilateral plane, ABDI, MBC and CoC leaders also took on a commitment to advance in a wider agenda, on an international scale, through the Global Federation of Competitiveness Councils (GFCC), of which all three are founding members. Extending the U.S. - Brazil Innovation Initiative's approach to other countries will be valuable not only to the two countries mentioned but also to the other countries represented in GFCC, which brings together in its network of partners 45 organizations in over 40 countries.


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GEORGETOWN UNIVERSITY

The projects and initiatives announced on September 21, 2010 by no means exhaust the wide range of work possibilities for Brazil and the United States.

The U.S. - Brazil Innovation Initiative is intended to be wide ranging in its future trajectory, and it will. Since 2007, hundreds of organizations and thousands of professionals have participated in activities carried out by ABDI, MBC and CoC. In 2011 and 2012 we intend to have new partners sharing our journey. Concrete possibilities regarding these new partnerships emerged throughout the Summit.

On the Brazilian side, we would like to highlight the statement made by José Augusto Fernandes, Executive Director of the National Confederation of Industry (CNI), in which we heard of the entity's interest in engaging actively in the U.S. - Brazil Innovation Initiative. CNI plays a core and growing role in promoting innovation in Brazil, leading MEI and running an extensive portfolio of projects. It is auspicious that we can count on their closer collaboration on the road ahead.

The statements of John Jack DeGioia, Samuel Allen and Ambassador Shannon follow the same lines and also suggest interest and new possibilities for engagement on the American side. Indeed, the high level and richness of participations in the 2nd U.S. - Brazil Innovation Summit make it possible to glimpse a great many opportunities for new projects and involvement of partners from both countries.

Today's Brazil has the conditions necessary for a new kind of global engagement, in technology, business and confronting problems affecting all nations. Brazil has ambition.

With the United States, a historical hemispheric partner, we shall carry forward this Innovation Initiative, endeavoring to create opportunities that contribute to the exercise of Brazilian and American ambitions for generating business, technology, development, growth and prosperity for our peoples. This is the leadership of ABDI, MBC and CoC's commitment, reaffirmed at this 2nd Summit, which will guide our organizations' steps on the journey ahead.

Action proposed for the Brazil – U.S. Innovation Initiative in 2011-2012
A new series of Innovation Learning Laboratories
A bilateral study on law, development and innovation
A program to connect entrepreneurs from both countries
Linkage of the Brazilian and American Diasporas and the US-Brazil Innovation Initiative
An initiative for communication and dissemination of knowledge
Engagement with other countries through the Global Federation of Competitiveness Councils (GFCC)

Ministry of Development, Industry and Foreign Trade

FRANCELINO GRANDO
Secretary for Innovation | Ministry of Development, Industry and Foreign Trade

The 2010 Innovation Summit consolidates the high level of institutional relations between Brazil and the U.S. in the area. Ranging from infrastructure and technological services to corporate relations in strategic sectors, the dynamics of the gathering made for a very successful exercise, put in place in a suitable environment, the locus of debate, the academy.

The maturity of the intergovernmental relationship and that between agencies was confirmed by the concrete results of the Inmetro/NIST partnership. This is so from two points of view: maintaining Brazil's technological leadership in the ethanol sector and effective contribution to the global market for the commodity. And, a second aspect, the efficiency of massive budgetary investment in human resources and state of the art equipment for metrology made with clear targets during president Luiz Inácio Lula da Silva's first administration.

Within the comprehensive subject of Energy, intensive focus on the segment of 'Transmission' has allowed Brazil to explore new yet extensive opportunities where, once again, Brazilian technologies – especially IT – are in a leading position.

These examples should be added to the quality of American participation, whether governmental, corporate or academic; as well as the image of the Brazilian system of ST&I reflected at Georgetown University, by the physical presence and contribution of policy makers and system managers of the Brazilian Ministry of Development, Industry and Foreign Trade and the system of the Ministry of Science and Technology, duly articulated and integrated.

It really is a new scenario!

It must not be forgotten that the new scenario, which we are quickly getting used to, consists of many more elements than a first glimpse of the scene reveals to new audiences. It is made up of strategic decisions taken over time; by establishing objectives, in our case discussed and evaluated by consensus with society in PDP and Pacti; by institutions for the provision of skilled human resources with attractive public careers; by equipping nationwide networks of infrastructure and technological services with world class equipment; by sustained funding of public policy and private funding of R&D.

The latter, investment of private capital in strategic decisions involving risk and lengthy maturation, is a lesson to be enhanced in future editions of the Innovation Summit.

RICARDO MENNA BARRETO FELIZZOLA
Founder and Associate, ALTUS, Teikon and HT Micron; Coordinator, Citec-Fiergs

The 2nd US-Brazil Innovation Summit was the pinnacle of an intense process of interaction between Brazilian and U.S. entities sensitized by the great opportunity the global environment is affording the issue of innovation. Through preparatory meetings in the two countries, a vision has been constructed for the event highlighting the areas with the greatest potential for interaction between companies, universities and governmental sectors in the two countries, in an alliance of great potential.

An incredible network was formed and a number of projects among the subjects of these meetings have crystallized in activities that started, continue and will bear fruit. The work of CoC, MBC and ABDI has been extremely valuable, providing at all times an environment favorable to education, formation of networks and partners in projects.

Participants' lists of contacts were very much enriched at the Washington event by personalities attending, taking part in workshops and making themselves available for contacts in connection with business, future projects and joint initiatives in the innovation area. It personally gives me much satisfaction to be able to take part in this process representing the Federation of Industries in Rio Grande do Sul (Fiergs) and my own company, Altus. I can safely state that deployment of Brazilian and U.S. joint efforts in innovation depends on the continuity of the initiative.

Ministry of
Foreign Relations

CARLOS HENRIQUE MOOJEN DE ABREU E SILVA
Director of the Department of the United States, Canada and Inter-American Affairs | Ministry of Foreign Relations

Thank you for inviting me to take part in the 2nd US-Brazil Innovation Summit. I have participated as a discussant in the debate on Law and Development and I attended the lunch at which the keynote speaker was Vice Chancellor James Steinberg, which goes to show the importance the United States attaches to relations with Brazil and cooperation in the field of innovation – and the collective interview with ambassadors Mauro Vieira and Thomas Shannon.

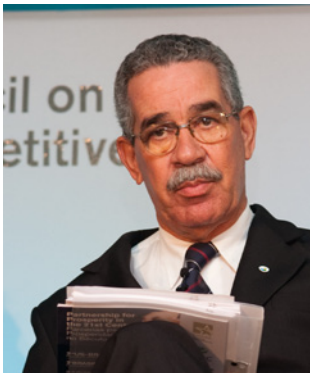
The summit was very well organized and marked by both the quantity and high level of the participants, reflecting directly upon the quality of debates. The choice of Minister Ellen Gracie Northfleet of the Federal Supreme Court (STF) as a principal lecturer on Law and Development could not have been more appropriate. In a debate that was well mediated by Paulo Sotero, she sketched out a precise picture of how legal security currently extant in Brazil fosters foreign investment and investments in national production, which results in a stimulus for innovation and technological research, benefiting all the parties involved.

In my presentation I endeavored to show how the subject of innovation emerged strongly in the US-Brazil bilateral agenda, with great transversal effect, and has been treated as a matter of priority by different forums such as US-Brazil CEOs Forum, Dialogue on Economic Partnership, MDIC-DOC Dialogue Mechanism and the Mixed Commission on Science and Technology.

I believe that events such as this – well organized and attracting leading figures in civil society, academia, corporate circles and government – contribute significantly to stimulate the process of technological innovation, a key component of economic growth, job creation, sustainable development and promotion of social justice. I very much hope Innovation Summits continue to be called periodically, in the interests of the two counties' societies.

Eletrobras

DJAMIL DE HOLANDA BARBOSA
Technology Advisor | Eletrobras



Through the panel members, the Summit enabled us to learn about the state of the art of different technologies necessary to meet society's demands, with the objective of our nations' economic development in the segments discussed. It also brought out the conditioning factors and challenges that Brazil and the U.S. will have to face over the two coming decades.

On the basis of the premises addressed, participating entities can better prepare to offer their expertise in cooperation, building suitable technological development, so as to contribute to economic development in the two countries – Brazil and the United States.

In this context, identification of partnerships between Brazilian and American companies will enable effective complementarity of technological needs, resulting in faster obtaining of results in technological development and availability of products and/or services for society, with a reduction in the effective costs involved for the partner enterprises.

On the basis of formatted corporate relationships, technological development programs can be executed securely and sustainably, leading to gains for Brazilians and Americans.

ideom

LUIS FERNANDO DAGNONE CASSINELLI
Director, Technology and Innovation | Ideom Tecnologia Ltda

The Summit was highly positive; we made good contacts. It was well organized, we obtained information and we're evaluating business opportunities identified at the event. Unfortunately we were unable to bring American companies holding sensitive technology into the debate or the closed group, which was one of Braskem's and the Brazilian defense area's interests.

The presence of the governments lent legitimacy to the creation of relationships between government entities and companies. In Braskem's case, for example, relations with DOE, NREL, Embrapa, USP, World Bank, INPI, WIPO and others were strengthened. You can count on our participation for future events of this nature.

ELIZABETH RITTER DOS SANTOS
Coordinator, Technology Transfer Office | PUCRS

From all points of view, from its impeccable organization, the level of discussions, the qualifications of the professionals participating, the 2nd US-Brazil Innovation Summit was an initiative of vital importance to leverage innovation action, especially on account of the opportunity for interaction between key players in this process – academia, industry and government – in both countries.

With regard to the Mini-Innovation Learning Laboratories, specifically the one on Accelerating Innovation: Technology Transfer & Commercialization carried out during the afternoon of September 20, it was possible to observe that the interface mechanisms put into practice by Brazilian scientific and technological institutes through their NITs (Technological Innovation Nucleuses) are enabling closer ties with their American counterparts, because they depend on the same principle of taking the results to market. In other words, dialogue is converging, because the instruments used by STIs in both countries are based on the same principle of facilitating transfer of technology.

I consider that this panel lent visibility the Brazilian experiences in the area which, albeit recent, enable reciprocity in partnership actions. In addition to extending opportunities for cooperation in the area of research, it is possible to glimpse possibilities for joint action both in enhancing the management of the NITs themselves on the basis of exchanges with their counterpart Technology Transfer Offices (TTOs) or Technology Licensing Offices (TLOs) and identifying prospective licensors for technologies developed by STIs in both countries. This approximation increases market opportunities for licensing technologies developed by Brazilian STIs in the United States and vice versa.

In the specific case of PUC-RS, as a result of the event is became possible to enter negotiations for partnership with Georgetown University. This has already led to some results, to be discussed when PUC-RS president Joaquim Clotet visits President DeGioia of Georgetown University.

From a list of researchers and their respective areas provided by Vice-President for Technology Commercialization Claudia Stewart, research groups were identified within PUC-RS who could work cooperatively in the appropriate areas, including: a) Collaboration with research in the area of Infectious Diseases; b) Research and Clinical Tests – PUC-RS runs a hospital which is a part of the national network of clinical research units in university hospitals, where there is a modern Clinical Research Center providing infrastructure for researchers and knowledge generating units that support it, including the Biomedical Research Institute and the Brain Institute; c) Co-incubation of companies – like one already being negotiated with Arizona State University (also a result of earlier editions of Innovation Labs), a preliminary proposal for reciprocity in the co-incubation of companies has been sent.

I thus consider that the 2nd US-Brazil Innovation Summit fully met its objectives as a strategic catalyst of actions, the results of which should be obtained after interaction propitiated by the important joint initiative of ABDI's, CoC's and MBC's.

Federal Supreme Court

MINISTER ELLEN GRACIE NORTHFLEET
Federal Supreme Court (STF)

As I indicated when I spoke at the 2nd US-Brazil Innovation Summit at the renowned and historic Georgetown University Law Center, I was greatly honored to have discussed the main issues related to the legal infrastructure necessary to develop a business environment favorable to productive integration between countries and promoting innovation and development.

The event's organizers deserve praise, and so does their aim of creating an effective common agenda for developing innovation by means of debates, dialogue and fruitful initiatives that will undoubtedly promote productive integration between Brazil and the United States. I also laud the democratic multidisciplinary presence of representatives of both countries, members of their public and private sectors, and I also laud the fact that the meeting took place in an academic environment.

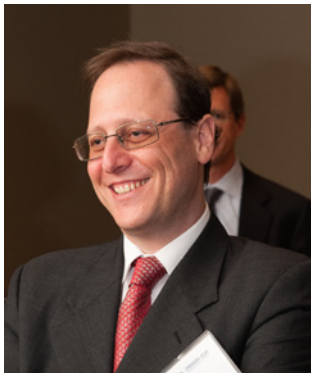
I was offered the subject of Law and Development – Advances in the Legal Environment for Investment and Business: a Bilateral Dialogue. I sought to relate it to recent positive measures, actually practiced in the environment of the Brazilian Judiciary and therefore inserted into the context relative to the improvement of legal infrastructure.

I would also like to highlight the organizers' concern about post-event monitoring, in the sense of noting proposals made during the seminar and analyzing their conclusion over time.

SUFRAMA
SUPERINTENDÊNCIA DA ZONA FRANCA DE MANAUS

FLÁVIA SKROBOT BARBOSA GROSSO
Superintendent, Manaus Free Zone | Suframa

The Innovation Summit was marked by a high standard of quality in information and presentation. Debates were characterized by rich, objective observations, which made us proud of the times we are experiencing in Brazil. The opening remarks by ABDI President Reginaldo Braga Arcuri were one of the events that deserve to be highlighted.



MARIANO DE BEER
Director-General | Telefônica do Brasil

The 2nd US-Brazil Innovation Summit deserves recognition for its important role in the development of the Brazilian and United States economies. Subjects discussed, opportunities generated, partnerships constructed and achievements, rather than mere examples of initiative and leadership, register the continuation of a debate and an agenda for development and innovation in the two largest economies in the Americas, and will doubtlessly contribute much to boost them in the near future.

As the representative of Telecomunicações de São Paulo S.A, I endeavored to stress the important role of the telecommunications sector in the development of economies all over the world. In Brazil, particularly, the sector accounts for approximately 6% of GDP and investments in infrastructure exceeding R$ 150 billion over the last decade. These resources made possible the growth of broadband access, from R$ 200 thousand in the year 2000 to over R$ 11 million in 2009.

Grupo Telefônica, in particular, has contributed significantly to this development throughout its 10 years in Brazil. Since 2000, the company has invested over R$ 4 billion in broadband access alone, and now makes the service available in 622 municipalities in its concession area. Over recent months, Telefônica has made massive investments in its broadband infrastructure with the objective of providing support for growing demand and ensuring the very best conditions for Sao Paulo State's economic development in coming years.

Through its data network, Telefônica supports Sao Paulo's State government in the offer and development of new services for society. The company is responsible for providing the entire infrastructure for government telecommunications in the State's 645 municipalities, connecting 13.5 locations and 5 thousand public schools in a high speed network and enabling access to e-government services by the inhabitants of large and small cities, towns and villages, such as, for instance, Borá, with its population of 852.

Telecommunications will continue to be a major propeller of innovation and economic progress, and competitiveness will be the key element for us to keep on advancing. Initiatives such as this summit, that enable the leaders of the two principal nations in the continent to come together and set an agenda in favor of development, are essential for us to overcome future challenges.

Photo: Sebrae Agency

VINICIUS LAGES
International Relationship Manager | Sebrae Nacional

A smart place can be defined as a location, a place, where one can find a host of companies and professionals with strong potential for innovation, knowledge generation and high value-added services from a knowledge perspective. This concentration of companies and innovative professionals does not occur by chance, as it is the result of concerted efforts from the public and private sector that create favorable conditions for this type of business / professional to emerge.

A place may have some elements of attractiveness and a complementary innovation policy. However, it is not only about the existence of infrastructure conditions, laboratories, a regulatory environment, and supporting services, but also about amenities, quality of life, in short, an environment that fosters optimal conditions for those who are dedicated to the production of knowledge and innovations, as well as for innovative companies.

The discussion about the importance of smart places in a development strategy based on innovation, however, tends to focus solely on building these technological environments, infrastructure, and policy design that create these conditions of attractiveness for the retention and attraction of talents , skilled professionals, and companies with innovative potential. This effort usually focuses on building a network of services, infrastructure, and innovation policy instruments that provide incentives for businesses and professionals to settle in a given place. Support for technology centers, universities with their laboratories, incubators, science or technology centers, or even research and development centers in large enterprises that generate positive externalities on the innovation environment have been the most common practices in developing environments conducive to innovation.

Regardless of how far-reaching an innovation policy might be in facilitating the emergence of such places / environments, it is hardly possible to have an optimal coverage of the knowledge and innovation production sources, especially in large countries like Brazil or the United States. Even with dozens of centers or places that are characterized as smart places, such as for example Itajubá, São José dos Campos, São Carlos, Campina Grande, Vale dos Sinos, Santa Rita do Sapucaí, Florianópolis, Hortolândia, and Campinas, to name just a few in Brazil, or the Silicon Valley, Boulder, Portland, Boston, and Cambridge, Mass., among so many others close to the R&D centers of private companies or major universities in the U.S., these places are limited, and an innovation policy that considers only these places as focal smart places would certainly be neglecting tens or even hundreds of other places where innovation has been broadly occurring.

The standard model of universities, research centers, technology centers, incubators, and laboratories is limited, as it fails to take into account the universe of innovation dynamics that occurs more diffusely in other environments that do not fit a more restricted concept of smart place. Therefore, it is fundamental that every village counts, i.e., that innovation policies also pay attention to the urban dynamics that are occurring in various parts of the world, pointing to the emergence of places, neighborhoods, and creative cities that house not only professional talents, but mainly new businesses and innovative companies.

In this sense, it is worth drawing attention to what Richard Florida, in his book "The Rise of the Creative Class: and how it's transforming work, leisure, community and everyday life", pointed out as a dynamic to be considered, since some places or even neighborhoods in certain cities are witnessing the emergence of a class of creative professionals and businesses that bring innovative approaches to goods and services. Florida points to the existence of the 3 Ts - namely talent, technology and tolerance - which summarize the essence of these places, i.e., the existence of creative, innovative talents, the great diversity of these talents and the conditions of peace, or tolerance, acceptance that enable these creative talents to coexist.

The most dynamic places, with a livelier economy in terms of creativity and innovation are those with the best quality of life, safety, services, connectivity (broadband), culture, infrastructure, and the presence of other creative and innovative professionals and businesses. This is complemented by the other instruments of an innovation policy, especially those dedicated to facilitating access to financing and investments.

In essence, the fundamental question that an effort to support the emergence of smart places should ask is "What leads a person or a company with creative and innovative potential to settle in a given place?" The classic economic explanations based on economic aspects or accessibility to raw materials or to other production factors are not always essential. Quality of life, a skilled workforce (talent attracts talent), innovative businesses (that attract other businesses), amenities, and services are the basic ingredients of an innovation policy strategy that sees smart places as the focal points of its application. But not only, as stated above, in classic places that are attached to university-laboratory-incubator models, for innovation can be everywhere and each place has a world where, through co-innovation, shared innovation and networking we can be connected and innovating once the aforementioned conditions are ensured, giving rise to creation, invention and its application.

Appendix

A Call to Work

2nd US–BRAZIL
INNOVATION SUMMIT

2ª BRASIL–EUA
CONFERÊNCIA de INOVAÇÃO

Compete.
Council on Competitiveness

MBC
MOVIMENTO BRASIL COMPETITIVO

ABDI
Brazilian Agency for Industrial Development

GEORGETOWN UNIVERSITY

The US-Brazil Innovation Initiative: The Journey Ahead and a Call to Work

The US-Brazil Innovation Initiative ... First Steps

In July 2007, the Council on Competitiveness, the Brazilian Agency for Industrial Development (ABDI), and the Brazilian Competitiveness Movement (MBC) hosted the first-ever "US-Brazil Innovation Summit," in Brasília, Brazil – an important milestone on the "U.S.-Brazil innovation journey" that began in 2005 under the auspices of a Memorandum of Understanding between the Council and MBC.

The 1st U.S.-Brazil Innovation Summit engaged hundreds of leaders from both nations, and focused on building stronger innovation capacity in the Western Hemisphere's two largest economies – continent-sized nations with world-class cities, clusters of innovation, and diverse and entrepreneurial populations.

The 2007 Summit was a significant and strategic step along the nations' innovation journey, as leaders from both nations were seeking a way to spark an evolution – building on traditional economic links, while also focusing more attention and energy through the lens of innovation as the fundamental key to competitiveness and prosperity.

Following the 1st US-Brazil Innovation Summit, the three organizations embarked on an experiment to speed up the innovation opportunities in both nations by deploying a series of 10 new-to-the-world "Innovation Learning Laboratories." These Laboratories have catalyzed in just two years tangible partnerships focused on creating opportunities: from the beginning of a sister-city smart grid demonstration project to a bi-national incubation project geared to launch new businesses – and create new jobs – in both countries.

Results like these – from the 1st U.S.-Brazil Innovation Summit to the 10th Innovation Learning Laboratory – represent a break from tradition. They are, in essence, innovations in and of themselves: new, systemic, innovation-based, scalable, private and public sector prosperity partnerships that leaders from both nations are building themselves – based not on dependency but on common interest and strength.

Council on Competitiveness 1500 K Street, NW, Suite 850, Washington, D.C. 20005 T 202 682 4292 Compete.org/us-brazil

The experiences of and the achievements related to the Innovation Learning Laboratories have proven that entirely new types of bi-national partnerships are possible and can lead to concrete results that will underpin prosperity in both nations. But perhaps even more important, the Innovation Learning Laboratories have demonstrated themselves to be a new economic development enhancer – a way of tackling and working on a broad range challenges and opportunities that no one nation can address in isolation.

The US-Brazil Innovation Initiative ... The Path Ahead

In an effort to understand and shape an action plan to seize on a range of new opportunities, the Council on Competitiveness, the Brazilian Competitiveness Movement (MBC) and the Brazilian Agency for Industrial Development (ABDI) have come together to host a 2nd U.S.-Brazil Innovation Summit at Georgetown University, September 20-21, 2010.

Participants in this 2nd U.S.-Brazil Innovation Summit have taken a critical step together in the journey of the US-Brazil Innovation Initiative. Over the past two days, leaders from business, academia and government from both countries have come together to shed light on the challenges ripe for bilateral engagement – and to find new opportunities for action and collaboration to advance our shared goal of innovation-based prosperity.

The energy-water nexus; the frontiers of bioscience and applications in food production and health; the engineering and implementation of smart infrastructures for innovation; the creation and enhancement of regional innovation ecosystems ("smart places"); and, the quest for a new view on advanced manufacturing in the 21st century were all crucial topics discussed on September 20-21, 2010. These are all fields in which challenges face our countries – and face the world. But these are also areas in which the United States and Brazil are well positioned to create the solutions that the world needs now.

The 2nd U.S.-Brazil Innovation Summit: Next Steps – A Call to Work

The U.S.-Brazil Innovation Initiative is *per se* innovative, systemic and inclusive. The proven platform of the "Innovation Learning Laboratories" – focused both on

dialogue and action – is an asset in the bilateral relationship and should be expanded.

In the years to come, the three partner organizations will work together to enlarge and improve the US-Brazil Innovation Initiative. Together, the parties will reach out to potential partner organizations and leaders across the two countries, aiming to involve and solicit the support for new endeavors to come.

A Call to Work ... Now, it is up to all of us to transform the ideas and opportunities explored in the 2nd US-Brazil Innovation Summit into value for our societies. **More than a mere declaration of intentions, this document is a "Call to Work" expressing the firm understanding that we have to work together to promote prosperity in the 21st Century**.

The Council on Competitiveness, Brazilian Agency for Industrial Development (ABDI), and the Brazilian Competitiveness Movement (MBC) commit themselves to a host over the coming years a series of bi-national activities:

- To deploy 10 new and improved "Innovation Learning Laboratories" in 2011-2012. These will cover the whole spectrum of global challenges/opportunities discussed in the 2nd US-Brazil Innovation Summit. This new series will focus on topics like:
    - venture capital and investment
    - health sciences
    - information and communication technologies
    - energy and water
    - new materials
    - the business ecosystem related to the World Cup and Olympics
    - bilateral innovative business enabled by the Brazilian Diaspora in the US

- To implement in 2011 a fellowship program focused on the study of the nexus between law and economic growth/development – an advancement on an idea proposed in the 1st U.S.-Brazil Innovation Summit's "Call to Action." The program will identify and share best practices related to the improvement of the legal environment for investment and trade, innovation and entrepreneurship. This program will also include key aspects of public sector management modernization and the role of monitoring & evaluation (M&E) systems, as well as shared experiences in public management innovation in

both countries, to achieve an increased awareness towards improving government productivity.

- To create a program aimed at educating and deploying entrepreneurs from one country into the other, and identifying partners for new technology/business projects.

- To launch workshops and a web-based community to mobilize outstanding leaders of the Brazilian diaspora in the United States, and to improve links between the U.S. and Brazilian business communities, fostering new innovation projects.

- To raise greater awareness of the U.S.-Brazil Innovation Initiative through a robust communications effort, including: a book series focused on results of the Innovation Learning Laboratories; enhanced web presence and linkages between ABDI, the Council on Competitiveness and MBC; etc.

- To engage with other countries and expand globally the best practices of the U.S.-Brazil Innovation Initiative through joint participation in the Global Federation of Competitiveness Councils (GFCC) and its projects.

The three organizations invite leaders from both countries to engage in the U.S.-Brazil Innovation Initiative and ask for their support in the journey ahead.

Deborah L. Wince-Smith President and CEO Council on Competitiveness	Erik Camarano President Brazilian Competitiveness Movement (MBC)	Reginaldo Arcuri President Brazilian Agency for Industrial Development (ABDI)

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