

SIGNS

OF COMPETITIVENESS IN THE **AMERICAS**

2014



A CONTRIBUTION
TO THE **REGION**



Third “Signs of Competitiveness in the Americas” Report – 2014

A Contribution of the Inter-American Competitiveness Network (RIAC).

This report focuses on the main theme of the VIII Americas Competitiveness Forum, “The Human Imagination at Work: Driving Competitiveness, Powering Innovation.” It includes research papers on human imagination, innovation, entrepreneurship and creativity in the Americas; articles and interviews on the current and future challenges on innovation and entrepreneurship; results and achievements from the implementation of RIAC’s Work Plan for 2014; a directory of more than 150 successful experiences from countries and institutions related to the 10 General Competitiveness Principles and information on initiatives that countries are undertaking in the fields of innovation, competitiveness and entrepreneurship.

The contents of this report draw upon material submitted by RIAC member countries, the Network’s multilateral and academic supporting institutions, as well as knowledge and lessons shared by high-level experts in the fields of innovation, creativity and entrepreneurship in the Americas and the rest of the world. The full-length version of the Report is available at www.riacreport.org

The report was produced by the Government of Trinidad and Tobago, as RIAC Chair Pro Tempore 2014 and the General Secretariat of the Organization of American States (GS/OAS) as RIAC Technical Secretariat.

RIAC is the Network of Ministers, High-Level Authorities and Competitiveness Councils of the Americas responsible for moving forward the competitiveness, innovation and technology agendas in the Hemisphere.

For more information about RIAC, please visit: www.riacnet.org



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Message from Trinidad and Tobago RIAC Chair Pro Tempore 2014



Senator, Dr. The Honourable Bhoendradatt Tewarie

As Chair Pro Tempore 2014 of the Inter-American Competitiveness Network, I thank you for the support extended to the Government of the Republic of Trinidad and Tobago in working towards the compilation of experiences for this year's Report. I am pleased that the decision to produce such a Report was approved for a third year. I am sure that when you look through the Report, you will agree that it was a good decision.

The policy objectives identified and agreed to provide an opportunity through future ACFs to continue to realign our competitiveness strategies. The framework of the 10 General Competitiveness Principles and the priorities identified by member countries in Santo Domingo also present significant opportunities for collaboration and learning across national boundaries and through our hemispheric institutions on an ongoing basis.

The experiences shared and built upon from RIAC member countries, supporting institutions and partners as well as those of specially invited contributors attest to the significant intellectual and creative inputs and present opportunities for collaboration that can bring our countries closer together. Our individual strengths as nations must be recognized as positive anchors as we advance the competitiveness agenda for the region. For all countries in the Americas, and in the world, innovation is fundamental to promote higher economic growth and better quality of life. It is a critical component to improve productivity and improve the economic performance of enterprises and countries but also to address economic inclusion and equity.

It is with this understanding that this year's theme builds on the objectives identified in the Consensus of Santo Domingo, while recognising that the roots of competitiveness lie in fostering and exploiting the human imagination to drive our competitive advantage. The human imagination therefore needs to be stimulated and nurtured in order to build competitive capacity as it is a pre-requisite for innovation. In the thrust to put people at the centre of development, the human imagination and the creative process needs to be recognised as the conceptual capacity that precedes acts of innovation and creation.

Given the importance of innovation and entrepreneurship, articles from the RIAC Task Force on Innovation and Entrepreneurship specifically convened for the purposes of documenting ideas focused on innovation and entrepreneurship within the Americas are featured in this Report. They provide policy recommendations for the public sector as well as initiatives that could be private sector driven.

The theme for this ACF 2014 is the *Human Imagination at Work: Driving Competitiveness Powering Innovation*; it was not chosen lightly. Two years ago, we took a decision to emphasize the human factor in innovation and agreed that the human imagination was indispensable to the innovation process. Trinidad and Tobago reaffirms its commitment to expanding the competitiveness and innovation dialogue within the Hemisphere and looks intently toward the creation of an innovation-driven future for the Americas. We remain confident that through Guatemala's leadership for next year's Forum we will have the opportunity to progressively enhance the content of next year's Report and we stand ready to lend our support to this initiative.

Government of the
Republic of Trinidad and Tobago



Senator, Dr. The Honourable Bhoendradatt Tewarie
Minister of Planning and Sustainable Development
Ministry of Planning and Sustainable Development
Republic of Trinidad and Tobago

Message from the RIAC Technical Secretariat



**José Miguel
Insulza**

As Secretary General of the Organization of American States, it is my distinct honor and pleasure to welcome you to the Eighth Edition of the Americas Competitiveness Forum (ACF) in Trinidad and Tobago, a beautiful and vibrant country which has brought us together to imagine and influence our common future.

For the third consecutive year, we share with you the "Signs of Competitiveness in the Americas" Report which continues the effort to share successful competitiveness experiences from countries in the Americas as well as intellectual contributions from critical thinkers, global experts and leading regional institutions. Part of the important legacy provided by Trinidad and Tobago in 2014 are over twenty think-pieces and interviews on innovation, entrepreneurship and creativity developed for this year's report.

Inside every human resides a creative soul. The power to imagine and conceive ideas is universal: it is not limited by one's nationality, gender, religion or level of education. It is an asset that every individual and every country of the Americas has, and it must be nurtured and stimulated in order to create innovation and enhance competitiveness. In line with the VIII ACF theme "Human Imagination at Work: Driving Competitiveness, Powering Innovation", I strongly believe that every human in the right environment of knowledge and with the right resources has the power to generate innovative ideas and solve problems, to create new products and services, and to improve the life of its community.

The fast-paced world we live in today is ruled by innovative minds and driven entrepreneurs; today's youth respond to an education based on interactive and hands-on teaching methods with access to technology; our professionals and businesses function in a borderless and interconnected social environment.

The biggest challenges ahead of us are to reduce social, knowledge, technology and skills gaps; accelerate the introduction of new economic and social policies that favor change and support young entrepreneurs; and strengthen our institutions and improve the quality and pertinence of our education. In order to produce sustained growth and competitiveness, we need to invest in the people and the ecosystems that produce innovations. We need to build high-value niches where we can excel based on our own identities, assets, biodiversity and cultures.

I believe that we are all part of an integrated system that is built upon joint contributions and that the solutions to those challenges will only be achieved through enhanced cooperation. I also believe that the Americas Competitiveness Forum and the RIAC are very important spaces that can help us move past those challenges and that an open dialogue is necessary in order to help our region achieve economic and social development.

I invite each and every one of you to use this Signs of Competitiveness Report which comprises over 50 new experiences and which has collected more than 150 experiences since 2012 , as a reference and a tool to promote and facilitate cooperation on competitiveness, innovation and entrepreneurship across the region.

Allow me to convey our deepest and most sincere gratitude to all of you for contributing to these endeavors and for joining us in Port of Spain for the most important hemispheric event on competitiveness in the Americas. In particular, I would like to recognize Senator Dr. The Honourable, Bhoendradatt Tewarie, Minister of Planning and Sustainable Development of Trinidad and Tobago and his team for the leadership, vision and hard work throughout the past year as Chair Pro-Tempore of the Inter-American Competitiveness Network (RIAC). As Technical Secretariat of RIAC, the OAS has been delighted to collaborate with the Government of Trinidad and Tobago and all RIAC Members to make the Eighth Americas Competitiveness Forum a great success.



Organization of
American States

José Miguel Insulza
Secretary General
Organization of American States

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EXECUTIVE SUMMARY



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The **Third Edition of the Signs of Competitiveness in the Americas (SCA)** report is a product of the collaboration between Authorities and Councils on Competitiveness of the Americas and the institutions that support the work of the Inter-American Competitiveness Network (RIAC). It is comprised of two main sections. The first one offers an overview on the Human Imagination, Innovation, Entrepreneurship and Creativity in the Americas, as key drivers for competitiveness. The second one includes more than fifty five experiences of countries, institutions and other stakeholders related to the ten general principles of competitiveness.

These ten RIAC Competitiveness Principles are part of the Consensus of Santo Domingo approved by representatives from thirty countries, in October 2011, during the Annual Meeting of the RIAC. The Meeting took place within the framework of the V Americas Competitiveness Forum (ACF) in the

Dominican Republic and adopted the Consensus and its principles as a central element to the 2020 vision for the Americas.

In 2014, the Ministry of Planning and Sustainable Development of Trinidad and Tobago, as RIAC Chair Pro Tempore and host of the VIII ACF, chose the theme “**Human Imagination at Work, Driving Competitiveness, Powering Innovation**”. As such, the institutions that support the work of RIAC, as well as other collaborators have prepared special contributions for the Report, the majority of which focus on the central theme of VIII Americas Competitiveness Forum.

The first part of the Report, starts with a series of “**Articles and Interviews on the topics of Human Imagination, Innovation and Entrepreneurship,**” including technical contributions and experiences from: The U.N. Economic Commission for Latin America and the Caribbean (ECLAC), on the “Present and Future Challenges in Innovation and Entrepreneurship in the Americas and the World”; the Development Bank for Latin America (CAF), addressing “The Role of Entrepreneurship and Innovation in a Competitiveness Agenda”; and **Compete Caribbean**, providing summaries of two papers, one by Keith Nurse, covering “The Human Imagination, Innovation and Competitiveness in the Caribbean: Small State Challenges and Opportunities”, and the second, by Roberta Rabellotti, discussing “Clusters in the Caribbean: Understanding their Characteristics, Defining Policies for their Development.” The **International Development Research Center (IDRC)** of Canada contributes highlights of a paper authored by Rodrigo Varela, “Fostering Entrepreneurship in the Caribbean: The Global Entrepreneurship Monitor (GEM) in the Caribbean.” Juan. E. Figueroa draws lessons from U.S. experiences to present an “Entrepreneurship Programme for Latin America.” **ORKESTRA** -The Basque Institute of Competitiveness, contrasts cluster programmes with recent innovation strategies in the document “Connecting Smart Specialization Strategies and Clusters: A Key Challenge in Latin America? It is followed by the presentation of the programme “Competitive Central America” of the **Secretariat of Economic Integration of Central America (SIECA)**. Closing these set of articles, the **Dominican Republic National Council of Competitiveness (CNC)**, shares the Dominican Republic’s considerations on “The Innovation and Intellectual Capital Systems of Businesses” and the **Inter-American Commission of Women (CIM)** advances recommendations on gender equality for innovation and competitiveness. This first contribution of the **Inter-American Commission of Women (CIM) of the OAS** to the Report addresses competitiveness and innovation from a gender equality perspective and a rights-based approach. This is a significant issue to be taken into account in order to enhance the technical and political dialogue about the impact of gender inequality on the ability of countries to successfully advance in their innovation and competitiveness agendas, both in the national and global context. Along this line, this third edition presents at least two related experiences, the *Quality with Equity Model* of Uruguay and the Peru’s *L’Oréal-UNESCO Award*.

Several **keynote speakers of the VIII Americas Competitiveness Forum** in Trinidad and Tobago shared their expertise in this section, featuring interviews with **Deborah Wince-Smith**, President & CEO of the U.S. Council on Competitiveness; **Howard Alper**, Chair of the Government of Canada’s Science, Technology, and Innovation Council (STIC), and Distinguished University Professor at the University of Ottawa; **Bruno Lanvin**, Executive Director, INSEAD European Competitiveness Initiative; **Pamela Coke-Hamilton**, Executive Director, Caribbean Export Development Agency; **George Gabor Burt**, Author of *Slingshot*; **Jane Allen**, Global Leader for Renewable Energy, Deloitte; and **Kyle Maloney**, Director/Founder, Novus Tech Ltd.

Part I of the report also features the conclusions and contributions of the **RIAC Task Force on Innovation and Entrepreneurship (TFIE)**, a diverse group of distinguished experts in innovation, entrepreneurship and education from several countries of the Americas, who contributed their ideas and recommendations for the VIII Americas Competitiveness Forum. **Megan Shaw** and **Rosibel Ochoa**, from U.C. San Diego, talk about the proof of concept process to accelerate innovation and entrepreneurship. **Cardinal Warde** and **Dinah Sah**, from the Caribbean Science Foundation (CSF), emphasize the importance of STEM pathways for the development of the economy of the Caribbean. **Maya A. Trotz**, from the University of South Florida, highlights the relevance of generating spaces for

creativity and human imagination, in order to achieve a sustainable Caribbean. **Guillermo Fernández de la Garza**, CEO of the United States-Mexico Foundation for Science (FUMEC), pin points key topics on innovation and entrepreneurship for the Americas. **Kevin D. Franklin**, from the University of Illinois, together with **Fernando A. Hernandez** and **Simon J. Appleford**, reflects on how to use management of big data and high-performance computer technology to develop a “Smart Americas”. **Horacio Melo**, former Executive Director of Start Up Chile, shares five pillars to build a culture based on innovation and entrepreneurship in Latin America and the Caribbean.

The section on the **Americas Competitiveness Exchange (ACE) on Innovation and Entrepreneurship**, presents summaries of the results of two high-level hands-on programmes to showcase innovation and entrepreneurship ecosystems held in the **United States and Mexico** in 2014. Over 80 government officials, chief executives, entrepreneurs and leaders of Universities from 25 countries had the opportunity to learn first-hand from initiatives in the medical, agro-industrial, manufacturing, and automotive industries in the United States; and information technology, financial and agro-food industries in Mexico. The busy and enriching schedules included site visits to advanced technology operations, innovation hubs, and research and development centres in the cities of Atlanta, Greenville, Conover, Kannapolis and Charlotte in the United States; and through Mexico City, Aguascalientes and Guadalajara in Mexico. Several of these sites, shared as experiences in the Signs of Competitiveness Report in 2012 and 2013, showcased public-private partnerships and investments which have effectively supported innovation development and entrepreneurship in urban and rural areas, in small communities as well as in large metropolitan areas.

The section on the **RIAC-ACF Community of Practice (CoP)** presents the results of the digital platform developed by the Compete Caribbean Programmes for the VIII ACF. The CoP convenes participants with common academic and professional backgrounds to share ideas, find solutions, innovate and join efforts toward advancing knowledge and collaboration on some of the key topics related to the main theme of the VIII ACF, “Human Imagination at Work, Driving Competitiveness, Powering Innovation.” The virtual RIAC-ACF Community of Practice was one of the deliverables undertaken by the Government of Trinidad and Tobago in the 2014 RIAC Work Programme.

The **RIAC Working Group of Experts Meeting on Subnational Competitiveness (GTECS)**, held its second meeting in Montevideo, Uruguay, on July 29 to 31, 2014, hosted by the Competitiveness Institute of the Catholic University of Uruguay with the support of the Ministry of Industry, Energy and Mining (MIEM). This section of the Report provides an overview of the main conclusions, experiences, resources and recommendations shared by the 43 participants from 13 countries and international institutions -CAF, ECLAC, IICA and OAS- contributing in this meeting. The issues discussed included Innovation and Subnational Competitiveness; Competitiveness in Cities; Indicators & Competitiveness Indexes; Clusters Case Studies: Impact on Regional Competitiveness; and Institutional Competitiveness Framework: the Role of National and/or Regional Councils of Competitiveness.

Part II of the 2014 Signs of Competitiveness Report is focused on the experiences shared by countries, institutions and other stakeholders on the ten RIAC Competitiveness Principles. In line with the main theme of the VIII ACF, the Chair Pro Tempore and the RIAC technical Secretariat procured, in particular, contributions of successful programmes on innovation, entrepreneurship, STEM education, skills training and creativity.

The Report includes a quick-reference **Quick-reference Directory of RIAC Experiences** that compiles all the collaboration opportunities presented by countries and institutions in the 2012, 2013 and 2014 Signs of Competitiveness in the Americas Report organized under each of the Ten RIAC Competitiveness Principles.

As in previous editions, the section “**Experiences in the Americas**” provides an overview of the initiatives provided by fifteen countries in 2014, including Argentina, Brazil, Chile, Colombia, El Salvador, Mexico, Panama, Peru, Saint Lucia, Suriname, Trinidad and Tobago, United States and Uruguay.

The experiences presented by countries, institutions and other stakeholders in 2014 are grouped into five subsections: (i) SMEs, Innovation, and Entrepreneurship; (ii) Development of Human Capital; (iii) Regulatory Framework, Business Climate, and Trade; (iv) Energy; (v) Institutions and Programmes. The largest number of experiences presented showcase policies and programs dealing with innovation, SME- development, entrepreneurship and development of creative sectors.

In general, the summary of each experience highlights its primary objective, relevance, results and key lessons, and most importantly, the specific opportunities for collaboration with other RIAC members and its modalities. Every experience indicates what the institution can offer (i.e. information sharing, technical assistance, videoconferences, teleconferences or experts visits). This process seeks to increase the impact of projects in each country and to provide feedback on the work and mechanisms needed to ensure the success of regional cooperation initiatives.

The original text of the experiences reported by countries and institutions is available in the full version of the **2014 Signs of Competitiveness in the Americas Report** - www.riacreport.org.

Articles & Interviews: Human Imagination, Innovation and Entrepreneurship in the Americas



NACIONES UNIDAS
UNITED NATIONS



Present and Future Challenges in Innovation and Entrepreneurship in the Americas and the World By the Economic Commission for Latin America and the Caribbean (ECLAC)

Science, Technology and Innovation in Latin America and the Caribbean

Science, technology and innovation (STI) are essential for economic growth, increasing productivity and the wellbeing of the population. This is of particular relevance in a context in which changes in world markets and new technological paradigms reconfigure and add complexity to the spaces in which governments, businesses, stakeholders in the fields of science and technology, and civil society must act. On this new stage, various countries in Latin America and the Caribbean have made progress by setting in motion policy strategies, institutional modernisation and new programmes and tools that make it possible to move forward faster in the field of STI (ECLAC, 2014).

Despite progress, Latin America and the Caribbean continues to show low levels of investment in technological research and development (R&D) when compared to the economies of the Organisation for Economic Co-operation and

Development (OECD) or the European Union. This lag makes it more difficult for efforts in the field of STI to achieve the desired economic impact (OECD/ECLAC, 2011y 2012).

In 2012, the economies of the OECD and the European Union invested 2.4% and 2.06%, respectively, of gross domestic product (GDP) in R&D, while those of Latin America and the Caribbean invested only 0.78% in R&D and 1.08% in Science and Technology Activities (STAs) for the year 2011.

The region's efforts are limited to a reduced group of countries. Progress evident in some countries contrasts with lags in others: the one with the best performance in the region invests 1.21% of GDP in R&D, while those performing at the lowest level do so less than 0.03%. Regarding STAs, the highest investment was of 1.77% and the lowest of 0.12%. This investment is heterogeneous inside the countries of the region according to business type, economic sector and the stakeholders involved. While in OECD countries businesses

make 60% and government 30% of investments in R&D, in the region the business sector only finances around 40% of those investments.

Traditional ways of incorporating technology, such as importing machinery and equipment or direct foreign investment, are not enough to confront the challenges of inclusive economic development. That is why it is essential to promote a process of investment and expansion of new productive capacities, based on scientific and technological knowledge and innovation. Progress related to Information and Communications Technologies (ICTs), as well as biotechnology, nanotechnology and new materials create opportunities for technological development in the region that can be more efficiently taken advantage of in the framework of regional productive and technological integration. Development in science and technology requires economies of scale, specialized infrastructure and the ability to cope with high levels of uncertainty, conditions that are difficult to meet, particularly by the smaller economies.

Regional integration in ICTs is a determining factor for achieving progress in overcoming the asymmetries in this field and reducing the gaps that separate the countries of the region from developed economies. Regional initiatives in this direction (regional forums and the implementation of regional cooperation projects in various areas) are an essential basis for achieving new progress.

In the context of economic growth and poverty reduction, in many countries of Latin America and the Caribbean, they must address the challenge of renovating and consolidating their national innovation systems for structural change, scientific and technological progress being the essential source of productive specialisation. According to this approach, economies that are successful in transferring and functioning according to the new technological paradigms modify their productive sectoral structure to favor activities with greater technological content and to develop new capacities to spread technical progress to other areas of the economy. New systemic links among businesses, science and technology organisations, the State and civil society are required in this process of structural change, and this reinforces the importance of the concept of a national innovation system as a proposal for institutional legislation.

Innovation in a Hyper-Connected World: The Digital Economy

There is ample evidence of the impact of production and the use of ICTs in the economic growth and productivity of developed countries. The evidence available for Latin America does not show a structural change with productivity convergence as a result of the process of development and spread of ICTs at the level of the economy as a whole. In contrast to what has been observed in developed economies, partial progress has been made on a digital structural change, reserved to some service sectors such as the financial industry, the large commercial chains and telecommunications (ECLAC, 2013).

To make progress on structural change in the region, a new phase of strategies for ICTs must be formulated and implemented, with a focus on the integral development of the digital economy, defined as the sectors of the ICT industry (telecommunications, hardware, software, and ICT services) and the network of economic and social activities facilitated by the Internet. The digital economy is a source of increasing productivity, economic growth and sustainable development; to make the most of that potential, institutions and policies are needed that would ensure the generation of synergies between the spread of new technologies and change in the productive structure toward more intensive sectors in digitalisation and knowledge.

The main challenges are to guarantee minimum conditions so that investments in ICTs have a positive impact on economic growth; to promote and consolidate a model of dissemination and technological innovation based on broadband, compatible with the objectives of social inclusion; and to promote a digital change in the productive structure that, based on the economic and institutional particulars of each country, articulates knowledge with production and strengthens the software and applications sector.

The Need for Innovation and Entrepreneurship Systems

The development of a national innovation system is required to expand the number of innovative businesses. Businesses are at the core of the system since they are the ones that create innovation, but they require the operation

of institutions that facilitate the accumulation and dissemination of knowledge (universities and other training centers, technological centers, intellectual property laws), place basic and advanced infrastructure at their disposal (broadband Internet, laboratories), and stimulate the long-term development of their financial markets.

Innovation policy must integrate measures that guarantee adequate conditions around innovative businesses (macroeconomic stability, competition in the markets, etc.), the development of basic capacities for innovation (specialised personnel, laboratories, solid scientific communities in key areas, etc.) and the availability of support for the creation and expansion of innovative businesses, in existing sectors as well as in new activities. Policy makers must find a combination that, in the midst of budget restrictions, unchains and sustains a process of accumulation of knowledge that supports productive transformation.

The measures set in motion to reinforce a national system of innovation must complement the strengthening of institutions and new programmes focused on the promotion of business innovation and innovative entrepreneurship. To implement innovation policy, the two institutional pillars specialised in the key areas of the national innovation system must be balanced: one oriented toward capacity building and the other toward the promotion of business innovation and innovative entrepreneurship.

Coordination in the implementation of support policies for business innovation and capacity building is essential to prevent duplication and overlooked areas in innovation policy. Successful international experiences show the existence of various mechanisms that facilitate horizontal collaboration among agencies, for example, the meeting of representatives for resource allocation and the launching of joint programmes.

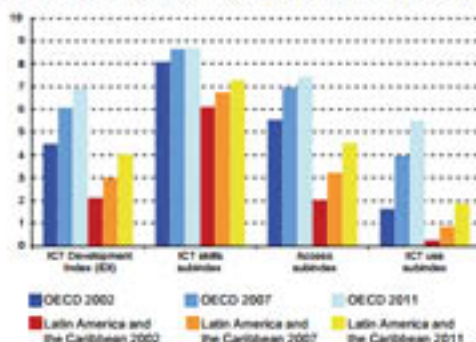
Policies aimed at strengthening capacities in science, technology and innovation must be the responsibility of the ministry in each area, while policies aimed at promoting business innovation and entrepreneurship must be guided and implemented by the secretariats and services specialised in the portfolio tied to the production and industry. This role must be reinforced by a service specialised in the promotion of business

innovation and innovative entrepreneurship to stimulate the adoption of innovation routines by businesses, increase innovation and facilitate the creation of technologically-based businesses. Said agency must provide non-refundable resources (grants) to businesses – especially to small- and medium-sized ones – to facilitate the execution of innovation projects and to entrepreneurs to set new businesses in motion, especially in their early phases.

The contribution of non-reimbursable funds (partial subsidies to the cost of a project) is an expeditious mechanism to support innovation and entrepreneurship, under the form of seed money. Furthermore, it is convenient to ensure that the beneficiary can appropriate the benefits of his or her innovation without being forced to early disclosure of results. These plans have high social benefits derived from the expansion of sales, the creation of jobs and technological externalities.

Also, the agency will drive the formation of businesses by stimulating the creation of incubators and the contribution of seed money. Additionally, it will support the establishment and coordinate the work of centres of technological extension oriented toward closing capacity gaps through training, technological advice and specialized services (design and certification, among others). To speed up technological change, extension centres must establish ties to boards at the level of productive chains indicated further on. In this way, it will be possible to identify and address the main technological gaps, facilitating the expansion of those chains.

LATIN AMERICA AND THE CARIBBEAN: SIMPLE AVERAGE RATE OF PROGRESS ON THE ICT DEVELOPMENT INDEX RELATIVE TO THE OECD COUNTRIES



Source: Economic Commission for Latin America and the Caribbean (ECLAC), on the basis of International Telecommunication Union (ITU), *Measuring the Information Society 2012*. www.cepal.org/publicaciones/tem/3/02143/TheDigitalEconomyforStructuralChange.pdf

The Role of Entrepreneurship and Innovation in a Competitiveness Agenda

By Michael Penfold and Rebeca Vidal

Latin America has been part of a global trend which has brought about sustained growth and incremental economic, as well as social improvements in developing countries in the last decade. These improvements have manifested themselves, for the most part, in poverty reduction and economic growth. Moderate poverty in the region has decreased from more than 40% in 2000 to less than 30% in 2010, with approximately 50 million inhabitants in Latin America coming out of poverty during this ten-year period. Within this framework, the region has been establishing plans geared towards driving competitiveness, which have generated knowledge acquisition albeit with significant challenges in comparison to other regions, such as Asia. The region has been significantly affected by the high cost of raw materials which traditionally make up its export sector, as well as by the incorporation of specific policies related to fiscal discipline.

Generally speaking, governments in Latin America have shown a growing interest in generating optimal conditions to promote competitiveness in their respective countries to improve the economic and social conditions of their people. As such, a number of lines of action have emerged aimed at improving education for productivity, attracting investments, transforming productivity and driving entrepreneurship and innovation. In the cases of Colombia, Chile and Brazil, which will be presented below, they stand out in this regard, as they have experienced institutional development marked by the emergence of support services for production activities with a high competitive potential, accompanied by regulatory reforms which bolster the sustainability of such initiatives.

The focus on entrepreneurial initiatives with features which contribute meaningfully to value creation and employment generation is part of the learning process reflected in the design of the support initiatives of these Latin American countries, which considerably develops their entrepreneurial ecosystems. An attempt to identify the capacity of businesses to generate value, as well as high levels of productivity and employment in their early stages, is included in these institutional endeavours.

These issues are interconnected and follow the same trajectory. The extent to which the actions in each sphere of action are coordinated and articulated will yield better and more sustainable results. For example, within the framework of an agenda to transform productivity, technical training and investment promotion must be considered, as well as the generation of entrepreneurship and innovation opportunities which allow for the strengthening of desired production sectors or networks. This is necessary in order to bring about tangible changes in the production and export structure of a country and decrease dependency on raw materials.

Likewise, programmes geared towards the promotion of entrepreneurship and innovation for the global competitiveness agenda must be reinforced by training as one of the elements of an ecosystem which allows one to capitalise on the latent entrepreneurial force in Latin America. This force can be independently transformed into a major benefit for the population provided that the other elements of the ecosystem are developed in a coordinated and synergistic manner. These elements, according to the model put forward by Daniel Isenberg, a professor at Babson College, one of the leading entrepreneurship institutions, are defined in terms of policies, financing, culture, support services, human capital and markets.

It is undoubtedly possible to cite noteworthy ventures which are taking place in Latin America and which have had an effect on the strengthening of entrepreneurial ecosystems, such as the INNpulsu programme in Colombia, Startup Chile and FINEP in Brazil. However, the reach of these initiatives are partial as there is a huge challenge to gain articulation among all stakeholders so that high potential and dynamic entrepreneurial initiatives can emerge and grow effectively with the coordinated support of different public as well as private groups within the ecosystem.

Additionally, knowledge acquisition which becomes evident in the generation of specialised policies in recent years is related to the emphasis on high potential, technology-based entrepreneurial

opportunities, which have brought about a significant capacity to generate employment and diversify the economy at a rate that is substantially greater than traditional initiatives generally associated with business ventures based on subsistence or motivated by need.

In the Colombian case, for example, the INNpulsa programme was created. The programme's design is based on evidence from a study in which more than six thousand companies participated, of which 4.6% showed extraordinary growth which resulted in the generation of almost 75% of the operational utility of the entire study sample. As such, it was decided that the programme focus on high potential initiatives by carrying out a selection process which allows for the chosen companies to establish improved chances to grow and expand their market based on the commonalities which were identified by the study. One such shared criterion of these high performing entities is the use of technology.

The focus of the programme does not only include a financial and non-financial service to high potential companies, but also pursues the development of the technical capacity of other institutions of the ecosystem, identified to accompany entrepreneurs and innovators at different stages of their development.

Emulating the Silicon Valley experience, renowned for its sustained capacity to promote high impact, global technological entrepreneurship, has been one of the motivations of particular Latin American initiatives, among them Startup Chile, a programme managed by the Corporation for Production Promotion (Corporación de Fomento a la Producción (CORFO)), which acts as a development bank and promotion agency.

The Startup Chile programme merges the training of entrepreneurs with financing and expert guidance to advance the initiatives and promote them through large scale investment of public resources. The impact of the measures are disputed among some experts who point out that the benefits at the local level are minimal as the resources are largely directed at foreign entrepreneurs who return to their countries once the programme has ended. Others argue that the investment funds are insufficient for the needs of the entrepreneurs. However, the impact will be measured more accurately once more time has elapsed since its implementation.

What is certain is that the Chilean initiative has enjoyed growing international recognition because of its global focus, which has enabled it to capture innovative talent coming from multiple areas and

allowed them to set up their business ventures for a couple of years in Chile and thus improving its capacity to secure investment funds for its supported initiatives.

On the other hand, Brazil relies on one of the most developed entrepreneurship ecosystems of Latin America. This ecosystem is brimming with programmes and public mechanisms focused on training, innovation, financing, support for export and investment promotion, among other things. The coordinated action of these mechanisms allows them to collectively expand and widen activity in the private sector and promote growth for small and medium enterprises.

One of the leading institutions of this development in Brazil has been the Research and Project Financing Entity FINEP (Financiadora de Estudos y Proyectos), an agency of the Ministry of Science and Technology which promotes innovation as well as development of science and technology in Brazil. In conjunction with the Brazilian Support Service for Small and Medium Enterprises (SEBRAE) (Serviço Brasileiro de Apoio a Pequenas y Medianas Empresas) and the Development Bank of Brazil (Banco de Desarrollo de Brasil (BNDES), FINEP represents one of the main service centres for business development at its different stages, by integrating financing with innovation in companies through seed-stage capital, risk capital and venture capital funding, and maintaining a link with the country's economic development plans.

These three emblematic cases in Latin America are only a sample of the diverse programmes and projects which are being carried out in the region with regard to the promotion of innovation and entrepreneurship and demonstrate how it is essential to integrate different actors in order to guarantee the continued monitoring of business initiatives with specific attention to the training needs as well as financing and access to markets. The task of articulation is still a long way off in the region, but there is movement in the right direction and it is possible to emulate the successes achieved in other countries in order to continue with the pattern of growth and place entrepreneurship and innovation in the competitiveness agenda of each country.



www.riacreport.com/en/current/news/2013/07/entrepreneurship-to-latin-america-from-subsistence-to-productive-change

The Human Imagination, Innovation and Competitiveness in the Caribbean: Small State Challenges and Opportunities

By Keith Nurse, Executive Director for The University of West Indies, UWI Consulting, Inc.

Introduction

The concept of the human imagination focuses on the importance of original or critical thinking as the fuel of the innovation process. It is the capacity of individuals and whole societies or social communities to “think outside of the box” that generates the basis for innovation and the potential for globally competitive entrepreneurs, firms and industrial sectors. It is recognized that “new ways of seeing, doing and being” can only be implemented, sustained and updated from one historical period to another if a country has the governance framework or institutional capacity to do so. From this vantage point the question is “how can the human imagination be further inspired and supported and thus enhance innovation and competitiveness, especially in small, developing and postcolonial societies like the Caribbean, given the legacies of a rote-oriented educational system, command and control management styles, a risk-averse business culture and governmental systems mired in bureaucratic inertia?”

Economic and Innovation Performance

Caribbean economies have become increasingly uncompetitive in global markets on account of the low-value-added in the main exports whether they be in raw materials (e.g. bauxite, oil and gas), food commodities (e.g. sugar, bananas, cacao), manufacturing (e.g. clothing, electronics, agro-processing) and services (e.g. tourism and financial services). Each of these sectors have experienced boom and bust cycles, fetch low (and volatile) prices and are affected by declining terms of trade. In tandem, these economies have become even more dependent on food, energy and health-related imports resulting in unfavourable balance of payments and a foreign exchange squeeze. As such it can be argued that the relative under-performance of these economies can be attributed to the slow rate of economic diversification and structural

transformation among both the public and private sectors of these economies. This is exemplified by the fact that investments in innovation have been weak at best and efforts at boosting productivity have been ad hoc and piecemeal. Consequently the opportunities embedded in contemporary globalization have not been exploited to a sufficient degree.

Areas for Intervention

Small States face several distinct challenges such as small markets at home and weak demand from potential R&D users due to a variety of factors: local firms often consider R&D to be too risky and expensive and instead rely on imported technologies and management solutions thereby stifling innovation and nascent capabilities. Small States generally lack the financial and human resources required to actively pursue large-scale innovation programmes making technical assistance or foreign direct investment key to technological and industrial upgrading. At the same time, it is evident that the greater the investment in domestic R&D, the greater the potential for absorbing and utilizing external research and innovation and facilitating “learning by doing”. **This suggests that small states need to be proactive in terms of promoting an innovation agenda and increasing investment in R&D at the firm level through reinvestment of profits and through strategic government procurement.**

Most of the literature on innovation focuses on the issues of larger developing economies with emphasis on manufacturing and agro-processing, as opposed to the services, intellectual property, creative and ICT sectors. These are the sectors that are scalable in small developing states and have significant growth potential in the burgeoning copyright, digital and Internet economy (e.g. the Apps marketplace). **It is therefore recommended that greater emphasis be placed on innovation in the services, intellectual property, creative**

and ICT sectors as well as exploiting the synergies with traditional sectors like tourism, agro-processing, minerals and niche manufacturing.

Another area where there is significant potential for innovation are in sectors that are major users of foreign exchange in which the region has a high level of exposure, for example, the energy, food and health sectors. Given the trajectory of the global economy and its impact on small states in terms of climate change, energy and food crises and the increasing financial and social cost of chronic non-communicable diseases there is a clear need to reduce the region's exposure in these areas and shift these sectors into exports. These sectors should be viewed as major opportunities for restructuring the region's economies and moving them towards more sustainable and green development pathways.

Small states also have the unenviable position of having the highest brain drain rates, with sizable shares of the tertiary educated migrating. This loss of talent and entrepreneurship can be potentially addressed through return migration, brain circulation and diaspora investment and entrepreneurship schemes. This suggests that a transnational and networked approach is what is required to build the technological and industrial prowess in the contemporary talent-driven, knowledge-economy.

Towards an Innovation Policy Agenda

A few countries in the Caribbean region have been pursuing technological change and implementing foresighting and national innovation studies, intellectual property audits, cluster initiatives and innovation start-ups. While these efforts have been welcomed, the evidence suggests that more resources and focus are required to enhance innovation performance. Sustained growth, development and global competitiveness are increasingly reliant on productivity gains generated through innovation. Attaining such outcomes requires much more than just increased investment or the up-skilling of the workforce - strategic and systemic approaches are required, aimed at (1) Creating an environment that fosters creativity and stimulates the human imagination; (2) The deepening of technological and institutional capabilities at the level of the firm and the sector, (3) The creation of an innovation

governance framework; and (4) Getting the policy mix, sequencing and timing right is key. In short, this is the glue that ensures the key stakeholders operate in concert and optimize resources.



<http://www.competecaribbean.org/photos/launch-of-competecaribbean-project>

INTERVIEWS OF ACF SPEAKERS

Deborah Wince-Smith

President & CEO of the U.S. Council on Competitiveness



Presents her perspective on improving innovation and competitiveness in the region based on her experiences and collaboration with competitiveness councils.

- Spearheaded the creation of the GFCC, the first global network devoted exclusively to the exchange of knowledge and practice related to competitiveness policies and strategies;
- President and CEO of the US Council on Competitiveness she is credited with recharging the national debate on competitiveness, innovation and resilience; and
- One of the leaders of the ground-breaking National Innovation Initiative (NII) that played a pivotal role in creating a reinvigorated U.S. competitiveness movement.

1. How do we encourage government-university-industry collaboration in the LAC region for developing Research and Development capabilities? How can small island states leverage their resources to build R&D capabilities?

Over the past 30 years, the United States has focused intently on developing national and regional policies to promote government-university-industry collaboration. It is not, however, a new system. The United States has promoted these collaborations since the 1930s. Today, these efforts are focused on big national missions such as national security, healthcare, and energy security. The energy imperative is especially important for the Latin America and Caribbean region (LAC), as there is a growing need for clean, affordable, sustainable energy to fuel economic growth and household consumption. Government can take the lead in bringing together partnerships between universities, where knowledge is created and stored, and the private sector, which can create viable products and services.

Food security is another important area of focus. One example is Brazil, where government-university-industry collaboration gave rise to the creation of EMBRAPA, a world-class research institution that from the very beginning forged relationships to develop a very competitive agro-business sector.

Government can lead but, by itself, is not able to invest and build the required infrastructure. It must work with the private sector and universities

to leverage their knowledge and research capabilities. The university also has an important role in training and developing local talent.

The best collaboration occurs when corporations recognise that their research can't happen in silos, that the central corporate research "Bell Labs" model is obsolete. Recognising this reality, these corporations search for the best and brightest talent and ideas to team up with anywhere in the world. As such, providing incentives for corporations to partner with universities is very important, such as ensuring there are transparent and coherent intellectual property rules in place. Intellectual property protection and good incentives are necessary to encourage the private sector to commercialise new technologies.

Culture is another key issue to be considered. Even in a country such as Brazil, there is a cultural heritage of the university being divorced from anything in which the private sector has an interest. It is important to get the younger generation of scholars and researchers to realise that working with the private sector can add to their ability to do long term research.

2. Based on your experiences what have been the most successful sub-national level strategies and programmes that have produced tangible results in terms of improving innovation and entrepreneurship levels?

We like to say "National Innovation" strategy. But, at the end of the day, there is a collection of regional networks and local implementation.

Communities have a tremendous responsibility to provide an optimal business environment and incentives for the right type of collaboration. In the case of entrepreneurship, the United States has been trying to encourage and work with cities and regions to access the capital required for entrepreneurial investments. We are also trying to ensure that we don't have an innovation-hostile regulatory environment that makes it hard for small firms to access capital and do business.

City mayors play an important role in this area. At the U.S. Conference of Mayors, stimulating entrepreneurship in city environments is at the top of their agenda. Chattanooga, Tennessee, that once had old decaying industrial infrastructure, was transformed. Implementation of dynamic policy succeeded in attracting big global companies such as Volkswagen and Alstom. The State of Tennessee supported the city's efforts by helping develop the workforce needed through community colleges. Smaller countries and cities should look at the community college model rather than only focusing on creating big research universities.

One of my recommendations is that mayors establish a Council of Entrepreneurship, which brings in experienced high level achievers and younger potential entrepreneurs to create a mentoring programme. It is a responsibility of the older generation to help mentor the young.

3. What incentives should public policy provide to encourage innovation in small island economies characterized by stoic cultures and a fear of taking risks in the market place?

First, the public sector needs to do a scan of existing regulatory impediments to creating a business. In the United States, you can create a business online; in other countries, it is more costly and takes a much longer time, which causes entrepreneurs to operate in the shadow economy. Operating in the shadow economy prevents an entrepreneur from accessing debt capital and investors. National banks and national financing entities need to establish programmes to streamline procedures and help new businesses. Incentives should be there to help start up a business, and a straightforward process in place to shut it down as, in many countries, this is cumbersome and can become a financial burden. **The regulatory process needs to be transparent**

and easy. Banks can even set up a division for establishing small businesses.

Foreign companies in small islands should partner with the government to create training and entrepreneurship programmes, and to encourage people to develop skills for their main industry such as the tourism industry.

4. Countries in the LAC region have customarily relied on traditional indicators to measure innovation and competitiveness such as GDP and productivity. What are some of the innovative indicators that LAC countries should use to measure innovation and competitiveness? How can small economies ever develop accurate and holistic national competitiveness reports given lax national data collection and analysis systems?

Governments in small economies have a responsibility to set up national data and analytical systems. Aid resources from countries such as the United States and Canada, and agencies such as the United Nations and the CAF–Development Bank of Latin America– should assist small countries with developing these statistical and data collection capabilities.

Other indicators that can be used to measure innovation and competitiveness include levels of foreign direct investment, migration patterns, the occurrence of brain drain, participation in the political process, and individual flexibility and freedom. Dynamic innovation depends on people feeling there is an environment in which they can develop assets, and attain a fair return on their creativity, work, and investment.

5. Given your extensive collaboration with competitiveness councils throughout the world, what are your recommendations to other competitiveness councils and leaders in the Americas to help boost the impact of their creativity and innovation agendas?

I think that the value of competitiveness councils is twofold. First, many policy issues as well as **local, regional, and national challenges can be addressed under the mantle of competitiveness.** Competitiveness councils represent a much less threatening, more inclusive umbrella than economic, environmental, or fiscal policy alone, which are all connected to competitiveness. So in this sense, there is no other comprehensive,

intellectual framework that gives leaders from government, the private sector, and civil society as much scope to take on opportunities and really hard issues.

Second, **competitiveness councils have to be inclusive.** A competitiveness council cannot exist if it is only made up of the private sector or a certain stakeholder group that will use it to satisfy their own agendas. Competitiveness councils by design should be inclusive and focus on what is in the best interest of the country. Thus it is important that councils are not governed by one stakeholder group.

6. How does the competitiveness outlook of the Americas compare with that of the rest of the world? Are we advancing on innovation and entrepreneurship?

One of the **biggest challenges facing the region is a lack of investments in education and training.** There is a lot of potential for entrepreneurial growth in the region as the Americas is a democratic region that does not inhibit individual action. The extent to which entrepreneurship and innovation are tied to financing is critical. We have a problem in the United States in which entrepreneurial firms reach a middle stage where they are ready to scale up, but venture capitalists do not want to continue funding. As a result, foreign companies come in, buy these companies and technologies, and move them to their regions.

We also have problems regarding the seamless nature of venture capitalism. Brazil has a national infrastructure bank, and the ability to invest and take risks in large scale infrastructure projects. While the United States has an Import/Export Bank, we do not have anything that facilitates investing in our own infrastructure. The LAC region in collaboration with the IADB can work out how national infrastructure banks can team up and grow in this region to invest in infrastructure projects. There is also a need to have more Latin American councils in the Global Federation of Competitiveness Councils.

Countries outside the region find it difficult to understand why we do not have closer economic integration. Apart from the North American Free Trade Agreement (NAFTA) and the Andean Community of Nations, the region needs another Trans-Pacific partnership, and an Americas

trading system that will enable us, with our talent, people, resources, and innovation, to compete on par with the rest of the world. Political leaders need to recognise this sooner rather than later. We would be an economic powerhouse unmatched in the world, and we would see over time the equalization of education and investment, and the harnessing of our resources, creativity, individuality, and all of that which makes the Americas so special.

Dr. Howard Alper

Chair of the Government of Canada's Science, Technology, and Innovation Council (STIC), and Distinguished University Professor at the University of Ottawa

Keynote Speaker



Shares his perspectives on the role of science and technology in the improvement of a country's competitiveness.

- Chair of STIC which releases a State of the Nation report every two years benchmarking Canada's performance on a global basis;
- Has published over 537 published papers and has thirty-seven patents; and
- Has a number of prestigious Fellowships and distinguished awards for Chemistry, Natural and Physical Sciences and Engineering.

1. As a region LAC is classified at an average innovation rank of 90th out of 148 countries in the 2013 - 2014 Global Competitiveness Index of the World Economic Forum in the Innovation Pillar. What do you see as the main challenges and opportunities for Latin America and the Caribbean? What are the most important factors and what are we missing?

In a global context, Science, Technology and Innovation (STI) are pivotal to economic advancement. Addressing challenges to STI can and will make a difference to countries regardless of their economic position, or level of industrial development. The LAC region ranks low on the GCI but I would like to focus on some positive factors from my experience that are guiding the way forward.

During my presentation to the senate and congress of Mexico, on Canada's STIC State of the Nation Report, I was heartened by the participation and depth of the discussion by the politicians following the presentation. What that demonstrated to me was recognition of the importance of STI towards economic development and the important role that leadership will play in this process. Leadership at the national, university and company levels, can have a profound impact on attitude and the rate of implementation of programmes in Mexico such as assigning a science advisor to the president and creating new talent programmes including PhD scholarships and fellowships.

Chile also presents a positive example of taking steps towards the improvement of STI. Chile announced 2013 as the Year of Innovation and hosted the first ever Latin American Innovation

Summit. Chile also does tremendous work with small and medium sized enterprises.

In terms of what we are missing, I think that what nations need to do is to understand their own assets. Knowing where you stand is a pre-requisite to developing your way forward at all levels: industry, academia and government. Every country faces its own challenges but they also have their own unique capabilities and assets which they need to build on. One of the roles of government is to maximise these assets and set priorities for moving forward. Having effective, visionary leadership makes all the difference. Leadership that is not afraid to take responsible risks, or demonstrate effectiveness, with integrity.

2. Last year's Signs of Competitiveness Report indicated that one of the key challenges to promoting innovation in Latin America and the Caribbean (LAC) was the dearth of world class universities, limited research capacity at existing institutions and incipient collaboration with industry. How do we set the foundation to promote government-university-industry collaboration focused on the main competitive and comparative advantage of each community and country?

Every country is different and the processes established for development will need to be different. Every country has its own culture and value system which they can use as assets to gain maximum benefit for their advantage.

With regard to the dearth of universities in the region, the key is not to build one hundred but a small number of world class institutions because

they can bring numerous benefits to the region. Not only do they bring economic benefits, but they also attract and retain the best talent society has to offer. For example, the research and development that goes on in universities and institutions can lead to start-up companies and spin offs. It can build excellent relations with industries, while educating and informing the nation. The key is making wise decisions on how to allocate and inject investment into the tertiary level system. France and Germany have been vigorously investing in universities and we have also seen universities in Singapore and Korea which have transformed from modest beginnings into first class institutions. I emphasise the importance of knowing what your position and assets are and then developing the blueprint to move forward. No matter how poor or rich you are, priorities can be set because that is what will help shape a positive future for the nation.

3. Over the last few years we have witnessed the promotion of cluster initiatives as well as other efforts to promote innovation and entrepreneurship. From the public policy perspective how can we support an SME enabling environment for innovation and entrepreneurship to flourish?

SMEs are vital to our economies and it is useful to look around the global environment for examples, best practices and ways that the LAC can develop new tools to benefit SMEs. Creating and growing SMEs is challenging and funding and investing in them is crucial.

For example, Italy has a programme involving both local and regional government, which places graduate students in new companies or recently established companies and for the first three years, they receive industrial salaries. After the three years, their support declines. A similar programme was established in Turkey in which the government supported growing SMEs while benefiting from job creation. Canada has an Industrial Research Assistance Programme, IRAP, which helps companies grow locally and globally.

Government has a fundamental role to play in helping businesses prosper. Businesses pay taxes, which of course helps the nation prosper. There are two components of government support that need to be implemented: indirect support

such as tax credit for research and direct support such as peer adjudicated grants.

4. How should we transform our technical degrees and engineering education to respond to our economic and social development needs? How do we make engineering and sciences more appealing for career development?

We need to improve our education system to benefit students and society as a whole. One way to do this is to engage industry in the curriculum setting process. Another example is to create successful multi-disciplinary programmes. At the University of Ottawa, for example, we decided to create an interdisciplinary undergraduate programme in bio-pharmaceuticals which would bring together faculties of science, engineering, management and medicine. While establishing the curricula, the university decided that in addition to the faculty from the different sectors, to include people from the pharmaceutical biotech industry whose contributions to the curriculum proved invaluable to the programme. Furthermore, enrolment in the programme exceeded our expectations. It was advantageous for us at Ottawa to develop curricula in conjunction with potential partners. Universities should put greater value on creating companies and making products as this is the best way to attract people.

5. Nourishing creativity through art education and other forms of talent development in human and social sciences have been linked to successful experiences in promoting innovation and entrepreneurship. Yet, providing instruction and outlets for these expressions are not necessarily a component in most innovation programmes. As a song writer and poet yourself, what do you think we can do to inspire and develop our human imagination and creativity as a key component to innovation and entrepreneurship policies and programmes?

You need incentive systems to nurture and celebrate inter-disciplinary programmes. It is one thing to put the programmes together but it is much more difficult to change cultures and attitudes especially within universities, which tend to be conservative institutions. I gave the example of bio-pharmaceuticals earlier, another example is establishing grant programmes for inter-faculty collaborative research.

6. Intellectual property, technology transfer and commercialization of technology are among the indicators used to measure the capacity of universities and companies to lead and position products and services in global value chains in high-value income segments of the market. In Latin America and the Caribbean, compared to the size of their economies, the output in most of these indicators is very low in most instances. What do you see as the core steps to bolster the indigenous innovation capacity in LAC to improve these indicators, but more importantly, to generate, protect and benefit from world class technologies developed in Latin America and Caribbean countries?

Many countries in the hemisphere need to build capacity in their technology transfer systems. It would be useful to focus on setting up technology transfer capabilities and assistance for SMEs. Developing the capabilities for first rate technology transfer operations is very important because you want to protect your intellectual property, but at the same time, you also want to be pragmatic in the way in which you deploy resources that are limited.

Dr. Bruno Lanvin

Executive Director, INSEAD European Competitiveness Initiative



Keynote Speaker

Presents his perspectives on the opportunities, trends and challenges for innovation in the Latin American and Caribbean region.

- Co-editor of the Global Innovation Index Report (INSEAD-WIPO-Cornell University) and co-authoring the Global Information Technology Report, (INSEAD-World Economic Forum);
- Previously worked for the World Bank, as inter alia Senior Advisor for E-strategies and Regional Coordinator (Europe and Central Asia) for ICT and e-government issues.

1. Dr. Lanvin, from your experience at the World Bank, UNCTAD and INSEAD, what are the three main strengths and weaknesses of the Americas as a region in terms of innovation and competitiveness compared to the rest of the world?

The Global Innovation Index (GII) uses five **input pillars** to capture elements of the national economy that enable innovative activities: (1) Institutions, (2) Human Capital and Research, (3) Infrastructure, (4) Market Sophistication, and (5) Business Sophistication and two **output pillars** that capture actual evidence of innovation outputs: (1) Knowledge and technology outputs and (2) Creative outputs. Based on this, many of the weaknesses for the Latin American and Caribbean (LAC) region fall on the input pillars.

On the Input side there are 3 main pillars the region needs to improve:

1. **The Economic Environment** – including areas such as business climate, length of time in creating a new company, the regulatory environment and the presence of factors that drive entrepreneurs to become innovators.
2. **Human Capital and Human Resources**–Improvements have been made regarding access to education and the general knowledge of the population however there is a need to increase the opportunities available for talented people to become successful innovators.
3. **Infrastructure** – In the LAC region, though some countries have been successful in developing information infrastructure, more needs to be done in the areas impacting industrial productivity, cost of production and export performance.

In terms of strengths, the region has displayed success in market and business sophistication. Barbados for example, has grown to become one of the top performers in the areas of knowledge dissemination and creativity.

2. In addition to these elements you have mentioned, why are some emerging countries having more success than others in promoting innovation and entrepreneurship?

The GIi shows that a large number of small economies are performing better than large economies. Switzerland, Singapore, Sweden, Finland, Denmark and the Netherlands are outperforming larger nations proving that you do not need to be a heavy weight economy to become a champion of innovation. This should be an encouraging sign for smaller economies of the LAC region.

The GIi also allows us to examine and analyse emerging countries that are moving up the index quickly. Champion among middle income countries is Malaysia, a country with a sizeable population and significant resources such as oil. Malaysia continues to achieve results by implementing policy actions on innovation and encouraging organisations to put innovation at the top of their agendas.

Singapore is another example. Since independence they have invested in their strengths, focusing on growing from its shipping and trans-shipment activities. Linking innovation to a nation's inherent strengths, history and culture can be applied to all emerging economies. Singapore is now becoming a global leader in financial services, bio and nanotechnology and big data because of its ability to combine what was a locally rooted culture

[shipment and trans-shipment] to a vision of what would matter in the world in the future. In other words, emerging economies should not attempt to innovate from scratch.

3. Can you describe the main trends developing for the region? Where are the opportunities and challenges for Latin America and the Caribbean?

There are a number of trends developing across the region regarding innovation and entrepreneurship. Firstly, many countries are implementing programmes and policies to stabilise fluctuating macro-economic conditions. The LAC region has managed over the years to gain better control over high levels of inflation and indebtedness. The second element is the local development of the business sector. Measures are being taken to attract foreign investors and to provide a better physical and regulatory climate for entrepreneurs in new and existing SMEs. The third element is the establishment of appropriate information and tele-communication infrastructure. Chile has been the first country in the world to achieve 100% digitalisation of its telephone lines and Colombia, for example, has been making successful efforts to develop its broadband infrastructure. Other countries in the region are continuing to invest in broadband infrastructure which will have a significant impact on productivity, competitiveness and innovation.

4. Why do you think it is important to measure and benchmark competitiveness and innovation? What are the main applications of these indices for policy and decision makers? What are your recommendations for governments at both national and regional levels working on this?

The GII which has now become a globally referenced index, was established as a tool to provide a holistic view and assist governments, businesses and experts to identify which actions would make a difference towards innovation. The GII identifies tools of action that provide bridges to allow governments and business to communicate on the same level which is essential since these actors focus on different priorities: governments tend to focus on science, research and development and massive public supported programmes while the private sector typically focuses on start-ups and small incremental innovation that would create bigger profits in complex market spaces.

Successful innovation has been the result of the work and initiative of both the private sector and the public sector. The combination of public support, public vision and private sector dynamism at the SME level is key. In a number of areas, the public sector has provided the initial kick, for example, US government programmes were critically important for the development of the internet such as The Defense Advanced Research Projects Agency (DARPA), however the internet and its many applications were developed only when large private sector companies such as Cisco, HP, Google and Apple began leveraging its advantages.

The second critical element is the involvement of academia because education which can be both formal education and lifelong learning are mandatory in maintaining the spark of innovation. Data confirms that innovation has to start with human capital, which is the theme of GII 2014.

5. How do we measure competitiveness in terms of job creation, quality of jobs and quality of life? How do we account for these elements in instruments like GII and other efforts around the world?

A study by the McKinsey Global Institute in 2013, focusing on disruptive innovation, highlighted the automation of knowledge workers as one of the most impactful trends for the next 10 years. It suggested that the impact of information technology and innovation on job creation is mixed. Clearly, IT and automation will continue to both create and destroy jobs. The fundamental assumption however is that more jobs will be created than destroyed and those created will be of higher quality.

The number of destructive elements to be considered, managed and mitigated has to involve government and business to ensure that the positive effects of innovation will not be offset by the negative effects. This is a very important issue that a number of countries have been addressing for a long time, for instance the European Union has been lobbying for inclusive, innovative growth and job rich recovery. It is a critical issue and we should combine the experiences of different countries to find the solution which may come from middle income or even poor countries.

Research for a solution should consider all the dimensions of innovation. If technological

innovation is going to destroy jobs (and it will), we need to look at innovation as a multi-layer process. Technological innovation must go hand in hand with political, social and quality life innovation to mitigate the negative impacts of technological innovation on job creation.

6. Trying to develop innovation from scratch is definitely not a recipe for success. How do we create jobs and opportunities without trying to copy other success stories around the world but building on our own strengths and capabilities? What is your recommendation for governments, private sector leaders and universities working to figure out how to pinpoint these strategic bets and niches where high value goods and services can be developed?

Clusters, the local rooting of innovation, are critically important to develop innovation. The reasons for the success of clusters such as Silicon Valley and Cambridge, besides the presence of excellent universities are:

1. The combination of very small enterprises and very big enterprises. In California, start-ups and giant companies work together, buy from each other, recruit from each and develop a symbiotic relationship. The same applies in Cambridge where a myriad of small companies have developed around Microsoft to form a cluster.
2. Openness – a majority of new companies in Silicon Valley have been created by non-US citizens. As such, openness should not only refer to foreign investment and trade but also openness to new ideas.
3. In the Caribbean, the University of the West Indies is an ideal example of how geography can be leveraged to share knowledge. This education structure has proven its success across multiple islands by becoming a top competitor in higher education.

7. Where are the best bets for countries who are investing and developing important talent in terms of capacity to not only service multinational companies but also to create opportunities in specific niches?

In 1964, the GDP per capita of South Korea was the same as Ghana's. Ten (10) years later, there

was already a drastic difference in terms of the levels of socio-economic development and competitiveness between both nations. In 1974 the proportion of Research and Development was the same in Latin America and the Caribbean and South Korea. Again a marked difference between the innovation levels of both countries is noted. This depicts that if the policy is right and if the collective will of the private and public sector is there, change can happen.

The change that happened involved the priority given to education, talent mobilisation and the development of information infrastructure. In my opinion, the success of South Korea can be attributed to both talent and broadband. This is an example that can be replicated around the world.

The Global Talent Competitiveness Index of last year revealed that the correlation between talent competitiveness on one hand and innovation on the other was stronger than the one between talent competitiveness and GDP per capita. This indicates that any country that wants to improve innovation levels needs to place emphasis on talent. It should be noted that high salaries are not the most efficient way to attract talent. What attracts talent is talent. Innovative people want to meet minds that match and challenge their own.

Pamela Coke-Hamilton

Executive Director, Caribbean Export Development Agency

Moderator: Services Industry as a Driver of Innovation



Shares her perspectives on how to improve trade and business development in the Caribbean.

- More than 20 years of experience in trade policy formulation, capacity building, negotiations and implementation at national, regional and multilateral levels; and
- Former Regional Hub Coordinator for the Caribbean in the Integration and Trade Department of the Inter-American Development Bank and former Director of Trade and Competitiveness at the Organization of American States.

1. Ms Coke-Hamilton, leaning on your experience and knowledge in international trade, having held leadership positions in the Government of Jamaica, the private sector and several important international and regional organizations, what do you think are the key priorities that should be focused on to promote small business development in the Caribbean?

To promote small business development in the Caribbean region, we need to firstly create the opportunities for Small and Medium Sized Enterprises (SMEs) to differentiate themselves from their competitors. SMEs are so small that they cannot acquire the economies of scale needed to compete on price in the global market place. As such, they need to compete at the higher niche market level where they can strategically differentiate themselves from the competition. In this case, their customers will be willing to pay higher prices for a premium, high quality offering. Priority should also be placed on the creation of a **targeted marketing intelligence network** that will successfully identify market niches for Caribbean products. Small businesses need to know their customers and the potential locations of new markets so they can design strategic market plans that will move them away from traditional markets into new spaces such as Latin America and China. Thirdly, SMEs need help with their **brand development**. We need to have a wider Caribbean brand as not many SMEs can develop a quality and marketable base brand that can compete with global brands.

What we have started to do right is we have started to see the value of our culture. Our music, fashion and art can be translated into true differentiated products and most countries in the region have

started to capitalise on this by advertising their cultural industry. However, we now need to support the development of this cultural industry. What is missing is a local system that enables the development of the cultural industry and its spinoffs so that we can move forward as a region.

An important part of this eco-system is a financing structure that allows access to traditional and non-traditional financing mechanisms. At the Caribbean Export Development Agency (Caribbean Export) we have developed a Direct Assistance Grant Scheme and we have also been working with the World Bank and other companies for the creation of a regional network to provide angel financing, venture capital financing and crowd funding and to also consider various platforms that will help establish a culture of entrepreneurship and innovation in the region.

Market access and penetration is a problem for small businesses in the Caribbean. The biggest problems that we have identified for these firms are sourcing a distribution partner and fulfilling the market demand for large markets such as Europe. However, the Caribbean has had success stories such as SMAKS Luxury Group of Trinidad and Tobago, Lion Shrimp of Belize and South South by Distributors of Jamaica. What these entrepreneurs have that make them successful, is a yearning for success, a clear strategy, determination and a quality product that appeals to more sophisticated consumers.

2. When we think about niches and high-value added opportunities, you have developed specific programmes in Caribbean Export focused on certain sectors such as Agro-business, Design- Fashion-Gastronomy and other Creative

Industries, Services including Financial, Wellness, Health and Education. How do you think countries in Latin America and the Caribbean should develop these niches and opportunities? How do Caribbean businesses gain favourable positions in global value chains, not only as suppliers of raw materials but as leaders of competitive industries?

To develop targeted niche areas and opportunities, Caribbean companies have to start with identifying their competitive advantages. As Caribbean countries are not homogenous, they develop competitive advantages in varying niche areas and high end products. The next step is developing policy and the right infrastructure to support the growth of these industries. Trade and investment promotion is necessary here to assist companies in identifying and capitalising on opportunities in these industries.

After these competitive advantages have been identified, Caribbean countries also need to ensure that they have the physical, financial and human resources to take advantage of these opportunities. The Caribbean also requires a seismic shift in its mind set and approach to business.

Inserting Caribbean firms into the global value chain starts with marketing intelligence. Firms have to assess market needs, their production capacity and their ability to satisfy demand before they can start carrying out targeted marketing interventions. It should also be noted that it is not always necessary to reach an end market and this is another critical shift that we need to make.

3. How do we expand the collaboration in trade, innovation and entrepreneurship among the economies of the Caribbean and Latin America? How do we leverage regional collaboration so that its products create strategic assets for countries in the Americas?

Regarding collaboration in trade, innovation and entrepreneurship; the role of the private sector needs to be expanded so that they play a leading role in driving this agenda forward. The Caribbean has to establish mechanisms for policy makers, universities and collaborating institutions to communicate and work together to drive innovation, trade and entrepreneurship. At the core, the private sector needs to be the key driver

in the design of innovation and entrepreneurship.

A major challenge facing the region, is the absence of a culture of entrepreneurship due to people's risk averse nature and the fact that the current education system raises individuals who seek to get degrees and find jobs rather than to gain knowledge and develop solutions to problems. Another challenge being faced is that most banks don't ascribe value to ideas meaning that they don't see the value in entrepreneurial ideas and innovations so start-ups can't access the financing they need to pursue an idea.

The Caribbean also needs to work on its system of intellectual property rights. The lack of enforcement of intellectual property rights leaves many people afraid or reticent on sharing and moving forward with an idea. When individuals can't get the support they need, brain drain occurs.

4. One of the concerns highlighted by global reports and benchmarking publications on competitiveness and innovation indicate that there is limited collaboration among universities, private sectors and governments (national and local) to focus resources, assets and efforts to promote long-term investments on strategic bets based on the capabilities and competitive, comparative advantage of each community/region/country. How can we leverage our education and particularly our University systems to become real contributors to our development and innovation policies? The University of West Indies (UWI) is a good example of multi-country presence across the Caribbean. How can we expand and replicate this type of effort with a focus on innovation and entrepreneurship?

The University of the West Indies (UWI) is a great institution however there are many internal structures that need to be changed. The University needs to become more agile, more proactive and a formidable driver of innovative thinking in the region. Caribbean Export has been discussing the creation of a creativity park – a park that allows young people to freely create without any programmes and agendas – this is what is needed. As is, the UWI in its current structure is based on a specific model and that model needs to adapt to the changes of the 21st century. Also, the UWI has a global brand that it should use to its

advantage by raising geographical recognition for particular products that are unique to the region.

5. Based on your experience over the last 20 years, can you forecast what we can expect to see as the most important issues on the international trade agenda relevant to SME development over the next decade?

Based on the micro size of the small enterprises in the region, there is the urgent need to leverage e-commerce and its many applications. It is mandatory that the region mandate legislative and other necessary infrastructure to develop an e-commerce platform for the Caribbean's products that will put 6 billion potential customers at the Caribbean's finger tips.

The region has to facilitate **strategic insertion into the global value chain**. It is necessary to figure out how to insert firms into the value chain based on competitive advantages in particular areas rather than focus on reaching an end market.

The third trend is the development of **joint branding**. Companies in the region continue to be suspicious of one other so they don't consider the benefits of joint warehousing and joint distribution networks.

The Caribbean needs to dramatically shift how **the education system** works from the primary to tertiary level. The education system still applies a narrow definition of education and does not focus on developing critical thinking skills, agility or competitiveness.

Access to finance continues to be a major problem for SMEs. Banks tend to not want to invest in them. Caribbean Export is currently working on different sources of funding to develop these small companies to move forward and grow in this new global space.

**Fostering Entrepreneurship in the Caribbean:
The Global Entrepreneurship Monitor (GEM) in the Caribbean**
By Rodrigo Varela

What is the Global Entrepreneurship Monitor (GEM)?



GEM is a worldwide analysis of entrepreneurial attitudes, activities, and aspirations, which measures the level of entrepreneurship and the profiles of entrepreneurs and enterprises. It is based on an annual country survey of a nationally representative sample of the adult population (18-64 years). Since its launch in 1999, over 104 countries have participated in GEM annual surveys, making it the world's largest longitudinal study of entrepreneurship. This has generated country-level data on the aspirations and goals of men and women, the opportunities and challenges they face in the labour market, and what helps and/or hinders them to/from successfully starting and managing viable enterprises. It has also allowed for the benchmarking of country and regional performances, and the assessment of the levels and nature of entrepreneurship and what this means for growth and for the job creation prospects for those currently excluded from labour markets. As such, the GEM methodology not only makes an important contribution to data, but it also provides key input that can inform policies and practices to spur entrepreneurship and enterprise development.

Since 2009, Canada's International Development Research Centre IDRC, Supporting Inclusive Growth Initiative, funds GEM research in Africa, the Middle East, Southeast Asia, and the Caribbean.

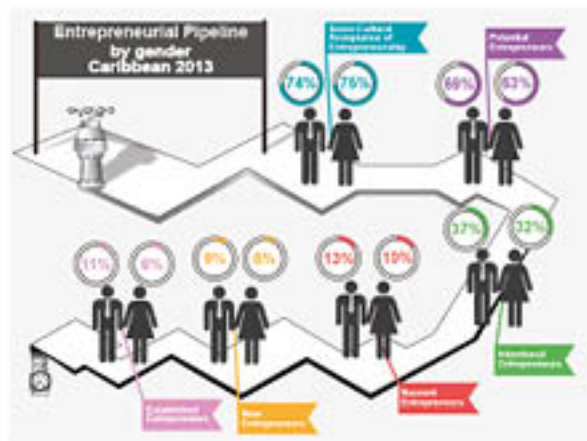
What is GEM Caribbean?



GEM Caribbean, is a research activity executed with the support of IDRC, since 2011, in a joint academic venture with the Arthur Lok Jack Graduate School of Business, University of the West Indies in Trinidad & Tobago; Cave Hill School of Business, University of the West Indies in Barbados; University of Technology in Jamaica; and the Center for Entrepreneurship Development at Universidad Icesi in Colombia, with the main objective of studying in detail the many characteristics, variables and factors related to the entrepreneurial process in those countries.

GEM Caribbean is training and strengthening entrepreneurship research teams in four Caribbean countries: Colombia, Jamaica, Trinidad & Tobago, and Barbados and is expanding to Suriname and Belize (the latter with support from Compete Caribbean). The project investigates the characteristics and determinants of entrepreneurship, the role of entrepreneurship in job creation, the challenges faced by entrepreneurs, and the regulatory reforms and policies needed to encourage them. The initiative is filling the existing data gap by generating baseline data for Caribbean countries to monitor and design policies to foster entrepreneurship, develop research on small business and build capacity to analyze the data.

The entrepreneurial pipeline in the Caribbean



The Entrepreneurial Pipeline concept sets out a new way of analyzing and presenting the GEM results. By using the entrepreneurial pipeline GEM data can be presented and understood with greater ease. It easily identifies the "leaks" or problems in the system; formulates specific policies at each stage of the process and charts the evolution of the dynamic entrepreneurial process over time. This concept was first introduced by GEM Caribbean researchers Rodrigo Varela and Juan David Soler of the Universidad Icesi.

According to GEM Caribbean 2013 data, the entrepreneurial pipeline indicates that, in the Caribbean population:

74% of the adults between 18 and 64 years of age on average have a positive socio-cultural perception about entrepreneurship, which positively influences potential new enterprises;

65% of adults on average are potential entrepreneurs: they are confident in their ability to create and manage a new business and have the capacity to overcome the fear of failure, in this stage they have not embarked on any actions to start an enterprise; even though they believe they have the capacity to do so;

36% of adults on average are intentional entrepreneurs: they are individuals who plan to start a new business;

12% are nascent entrepreneurs: these are the adults that have started to do specific activities to set up a business and have only paid salaries, wages or any other remuneration to employees and/or owners for less than three months;

8% are new entrepreneurs: these are the adults that have started to do specific activities to set up a business and have only paid salaries, wages or any other remuneration to employees and/or owners for more than three months, but for less than 42 months.

8% are established entrepreneurs: the adults that have been operating their businesses and have paid salaries, wages or any other remuneration to employees and/or owners for more than 42 months.

There is a very significant "leak" in the Caribbean entrepreneurial pipeline, in the transition from potential to intentional entrepreneurs (almost 30 percentage points) and from intentional to nascent entrepreneurs (24 percentage points).

If adequate policies are developed, the Caribbean could strongly benefit from the growth and job creation potential of entrepreneurship. The GEM Caribbean project analyses the pipelines for each country to identify the stages in which there are significant "leaks" and makes specific policy recommendations to repair them in order to contribute to job creation and growth in the Caribbean.

Building a better entrepreneurial pipeline based on research results

GEM Caribbean project findings are used to inform public policy and constitute a baseline for setting policy targets and monitoring performance. It provides policy makers and relevant stakeholders with needed evidence on how to support opportunity and high-growth entrepreneurship. In Barbados, the project team is frequently called upon to provide advice; in Jamaica, GEM researchers report that their studies have informed the Development Bank to develop strategies for rolling out small business development centres that can support entrepreneurs in a more structured way; in Trinidad and Tobago the team has forged a strong relationship with the National Enterprise Development Corporation (NEDCO) and the Ministry of Labour and Small and Micro Enterprise Development, where GEM data is being used to inform policy. The project reflects the demand from policy makers for knowledge to inform policy. As an example, in Trinidad and Tobago, specific questions on the annual survey and a mapping exercise of entrepreneurial support agencies have been incorporated.

Beyond the generation of a series of country and regional reports, research has been developed by project researchers adding value to the GEM data. For example, in Trinidad and Tobago, the project is contributing to the economic diversification debate building on GEM data. The project has also developed a specific focus on youth and entrepreneurship and creative industries in the Caribbean. Reports are available at GEM Caribbean website: www.gemcaribbean.org



Dr. Juan Figueroa



Abenaki Connect Entrepreneurship Program for Latin America

The era of fast and innovative technology development is allowing countries, and regions within countries, to fight economic stagnation by creating jobs and improving the economy. Intellectual prowess is not limited to any country, so all countries can take advantage of their homegrown talent. The next step is then to encourage this talent to take on a proactive entrepreneurial role to create jobs and wealth; a supportive national strategy is essential on the issues of entrepreneurship and the commercialization of innovative technologies.

Many countries have been successful, to varying degrees, in developing entrepreneurship and enhancing economic performance. In developing a viable and sustainable strategy, it is important not to simply copy what has worked in other places, but to adapt those successes to the countries' unique environments in Latin America.

A model in the US (and worthy of being replicated) that has been successful in bringing innovative technologies to market, while creating high paying jobs and contributing to the local and national economy is the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programme. This programme has successfully been in place in the United States since the 1980s. All agencies participating in the programme do so by setting aside a percentage of their budgets for the programme (e.g. 2-3% at National Science Foundation).

The SBIR/STTR programme has been an instrumental driver of new business creation and industry-changing technology development. This funding is available exclusively to small high-tech companies working towards the commercialization of their innovative technologies

through non-dilutive grants or contracts dependent on the specific agency. This is a highly competitive programme that can be attributed to the requisite of the challenging combination of developing innovative technology, while having a strong commitment to commercialization.

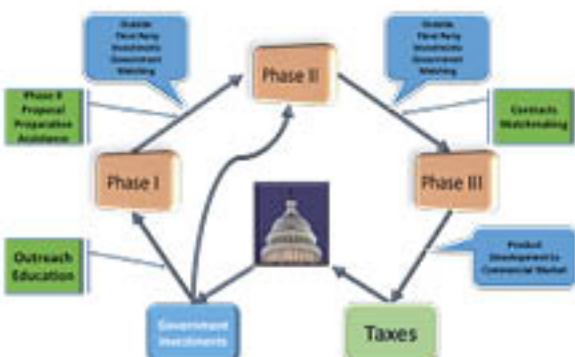


Figure 1 depicts the SBIR programme highlighting its key components.

The SBIR programme provides non-dilutive funds for early-stage research and development (R&D) at small businesses (defined in the US as <500 employees). This R&D should be based on transformational technology with high technical risk and potential for significant broader societal or commercial impact.

By providing non-dilutive funds, governments are definitely taking the responsibility of bridging the gap between pure research of a technology and the development of the technology, while encouraging the company to focus on raising additional (possibly dilutive) funds to engineer the technology into a product or a service. The Governments role is thus to de-risk the technology and spark the nascent entrepreneurship part

of the society. The constantly morphing Venture capital industry has become more and more risk averse and is more focused on larger, less risky investments than funding innovative technology projects. Venture capitalists have become more focused on market risk than they are on technical risk. By providing support to innovative technologies based in companies, Governments are also providing a technology "seal-of-approval" to their participants giving the investment community more peace of mind to move them forward and create jobs and wealth.

In the US, the SBIR programme is constituted in the following way:

SBIR Phase I: this funding is typically for a feasibility study. The company should work on overcoming the technical hurdles that could prevent a successful commercialization. This study is usually six months long ending with a final report that will be part of a Phase II submission where the company asks for additional funds towards commercializing the idea.

SBIR Phase II: with funding mostly about five times what the feasibility study phase provides it funds the development of a commercial prototype. The prototype development should be completed within two years. The level of success in the company's Phase I effort and a good commercialization plan will be key in the decision to fund this commercialization phase.

Award sizes range from \$150,000 for Phase I to \$1 million for Phase II; the amounts vary by agency. A key element of this programme is the number of investment matching initiatives that incentivize the small business to partner with investors. These incentives could add up to several thousands of more non-dilutive funds.

When evaluating proposals in the US system, they typically go through a peer-review process with representatives from academia, industry and commercial. This makes the technology, as well as the commercial potential, the guiding factors in supporting a company and its technology. To that end, evaluators are asked to assess all proposals against two criteria:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.

Mentoring is a critical path item to commercialization. Even in the review phase, the reviewers are asked to provide suggestions to help the company improve their success rate. Mentoring, however, is one place that even the US SBIR programme, in spite of its success, falls short. Because the government is taking risks on the technology and the new leadership team, it is important to minimize these risks by assisting these companies with commercialization training and support. The level of funding provided in these two phases is typically not enough and the startups are encouraged to look for investment from the private sector.

Although the SBIR programme has seen successes in the past, specific improvements can be made by Latin American countries while adapting and tailoring the SBIR programme to the local needs and realities. Few countries have the size and entrepreneurship tradition of the US does, so in our hemisphere, countries with same interests should pool resources and talents, and work towards implementing the programme in regions in order to produce the targeted outcome; jobs and wealth creation. This pooling of resources will bring the funds, talent and innovative ideas critical mass for successful implementation.

Critical to any entrepreneurship efforts in Latin America, as well as anywhere in the world, is mentoring. It is important that government efforts are not limited to just funding the activities but it also provides mentoring by experienced entrepreneurs and investors. This action will increase the probability of commercial successes. A true commitment from all components of a new entrepreneurship society should be present; from the governments and their agencies, universities, entrepreneurs and investors.

Connecting Smart Specialization Strategies and Clusters: A Key Challenge in Latin America?

By Mari José Aranguren, Susana Franco and James R. Wilson

Today there is widespread recognition that territories need to construct development strategies focused on building sustainable competitive advantages that draw upon their own unique resources, competencies and capabilities alongside intelligence on existing technological and market trends. In Europe this debate has taken shape around what are called 'research and innovation strategies for smart specialisation' (RIS3), but the principles behind this concept have relevance for territories in Latin America and indeed the world over. The smart specialisation concept arose initially from the observation that many regional governments have been replicating investments in certain areas of science, technology and innovation (STI) without really taking into account the plurality and diversity of their specific contexts. What are required, it is argued, are regional strategies for STI that are smart in the sense of specialising in areas where there are clear synergies with the existing and potential productive capacities and capabilities of the region.

The theoretical basis for the smart specialisation concept has emerged over the last few years and has been very rapidly translated into a policy agenda promoted in Europe by the European Commission. The speed of this translation from theory to policy has meant that the concept itself is still being explored and refined at the same time as policy-makers are adopting it and putting it into use. Thus there has been relatively little time to reflect on how it links with other already-established policy initiatives, including the so-called 'cluster initiatives' which have become particularly significant territorial development tools in the last two decades following the work of Michael Porter. Indeed, in Europe most regions have established cluster policies that seek to facilitate relationships of cooperation between firms and other institutions working in related areas and that share much common ground with the underlying principles of smart specialisation.

We suggest in this short article that there is much to be learned for emerging smart specialisation strategies from looking at our experience with clusters. These lessons are equally relevant in the Latin American context, where many regions are seeking to articulate their own territorial strategies, often starting from a base of clusters and cluster policies built up over recent years.

What is a Smart Specialisation Strategy?

The smart specialisation concept has its roots in the work of the 'knowledge for growth' expert group established in 2005 by the European Commission to provide advice on the contribution of knowledge to sustainable growth and prosperity in the European Union. Analysis of the EU-US productivity gap, and in particular of the role played by differences in R&D intensity, led to arguments based around the dual premise that: (i) R&D in Europe was fragmented along national lines; and (ii) that there was a tendency for both countries and regions to try to emulate success elsewhere rather than explore original ideas. This led to an initial proposal for 'smart specialisation', the idea that "the European Research Area will only benefit countries and regions with clear visions and strategies for developing distinctive, original and modern areas of specialisation for the future". These embryonic arguments were rapidly adopted by European policy-makers, have continued to be developed by academics, and there is now fundamental acceptance of the argument that regions should give focus to their innovation investments based on evidence and strategic intelligence about their own assets and capabilities.

Much of the ongoing analysis and debate around smart specialisation strategies concerns the process through which strategic intelligence and the associated identification of regional priorities emerge. Indeed the defining characteristic of

a smart specialisation strategy in theory is that it should emerge from an 'entrepreneurial discovery process' at the territorial level involving a wide range of stakeholders (firms, universities, research centres, government agencies, independent inventors and innovators, etc.). In this sense a smart specialisation strategy is envisaged not as a 'government strategy', but rather as a truly 'territorial strategy' in which government participates in the discovery process alongside the other elements of the so-called 'quadruple helix' (government, plus business, university and civil society).

Yet, as recognised by Dominique Foray, one of the leading initial proponents of the smart specialisation concept, any prioritisation of activities that favour certain technologies, fields, and therefore firms, is difficult. While how to focus public investment to support emerging priorities is ultimately a policy decision taken by government, the real challenge is how to inform this policy decision from an entrepreneurial process that brings together the diverse knowledge on capabilities and possibilities that is embedded and constantly evolving among a wide range of agents in the economy, and that also secures their commitment of resources to the priorities that emerge. It is in this process that we suggest there is much to be learned from existing and evolving practice in clusters.

Clusters and Smart Specialisation

The cluster concept has been popularised over the last two decades largely through the work of Michael Porter, although the theoretical ideas behind the concept have a much longer trajectory of analysis. Indeed, ever since Alfred Marshall's seminal work on industrial districts, economists have tried to explain the effects derived from geographic concentration of economic activity. Porter defines clusters as "geographic concentrations of interconnected companies, specialised suppliers, service providers, firms in related industries, and associated institutions (for example, universities, standards agencies, and trade associations) in particular fields that compete but also cooperate". It is the nexus of cooperation alongside competition in a context of geographical proximity that is distinctive in both the industrial district and cluster concepts, and this has led to a proliferation of policies that seek to nurture and support cooperative relationships

among firms and with other production-related agents. Among these networking policies, so-called 'cluster policies' typically seek to establish and/or support some form of 'institution for collaboration' or 'cluster organisation' as a focal point for cooperative activities among a defined and usually evolving group of inter-related firms and other agents.

There are at least three clear distinctions that can be made between the smart specialisation and cluster concepts. The first is with regards the scale at which the policy is articulated. Cluster policies aim to support processes of cooperation between specific groups of agents, and thus operate at the 'cluster' level. Smart specialisation strategies are inherently broader in scope, as they aim to foster processes of prioritisation in STI investment that will lead the region as a whole towards sustainable competitive advantages. The second concerns the focus of concern of the policy. Cluster policies seek to promote cooperation among related firms and other agents that may extend over a broad range of areas (internationalisation, quality standards, training, R&D, innovation, etc.) in enhancing the overall competitiveness of the cluster. Smart specialisation strategies on the other hand are more focused, concentrating on discovering of the most appropriate regional investments in STI and related human capital. The third relates to the policy tools that are employed. The tools employed by cluster policies are well defined and fairly narrow in scope. They are geared explicitly towards fostering cooperation, usually through the establishment and support of particular institutions at cluster level. The specific policy tools for fostering smart specialisation strategies, however, are less well understood.

The essence of these key differences in scale, focus and tools between the two policies nevertheless point to significant scope for learning and support from one to the other. Indeed, in essence smart specialisation strategies are about boundary-spanning and making connections across agents, activities, technologies and market opportunities. For many years clusters have sought to work beyond traditional boundaries, and the following points in common can be identified between the concepts:

- Both imply forms of **cooperation** between firms and other agents working in **related/complementary areas**
- Both are **systemic** and require new forms of **leadership & governance**
- Both rely on **place-specific assets**, context and institutions
- Both seek to be **transformative & require processes of prioritization**
- Both are subject to debate about the **appropriate role of government**
- Both are characterised by **challenges in evaluating their effectiveness**

These common elements point to strong potential synergies between the two in practice. Indeed, Foray and his colleagues acknowledge that "vibrant innovative clusters" are a "classic outcome" or an "emergent property" of a smart specialisation policy. We would turn this around to suggest that in fact existing clusters and cluster policies in many (but certainly not all) cases embody important elements of the entrepreneurial discovery process that smart specialisation strategies seek to foster. It is therefore important to ask what we might learn for the 'difficult' entrepreneurial discovery process that is central to smart specialisation strategies from the experiences and practices that currently exist within many clusters. Indeed our ability to learn from and build from existing experiences is especially critical considering policy inertia. New policies are always introduced in the context of existing policies, with their own specific histories, proponents and beneficiaries. The success of any new policy approach is therefore conditioned to a significant extent on how it engages with the existing policy landscape.

Given that these elements of cluster policies are such a widespread and well-recognised part of today's competitiveness policy landscape, and that they embody cooperative processes with strong synergies with the entrepreneurial discovery processes sought by smart specialisation strategies, it seems vital that we should pay more attention to examining in detail what lessons might be learned from clusters and cluster policies for smart specialisation.

With this learning in mind we have made a reflection on what over twenty years of experience with clustering in the Basque Country region of Spain can teach us with relevance for the development of smart specialisation strategies. This reflection is structured around each of the six steps towards a smart specialisation strategy specified by the European Commission in their Guide to Research and Innovation Strategies for Smart Specialisation, and is summarised in the table below.



http://www.orkestra.deusto.es/index.php?option=com_phocagallery&view=category&id=64%3A73027-conferencia-de-competitividad-2013&Itemid=237&lang=en

Steps to RIS3 design	Contribution from clustering experience
Step 1: Analysis of regional context & innovation potential <ul style="list-style-type: none"> • Strategy rooted in regional specificities • Looking beyond regional boundaries • Entrepreneurial dynamics: prospects for a process of entrepreneurial discovery 	Existence of cluster policy and functioning cluster initiatives can provide a strong basis for analysis and knowledge about regional context, through for example existing diagnostic processes within clusters, cluster mapping exercises, and in-depth cluster case analyses
Step 2: Governance to ensure participation & ownership <ul style="list-style-type: none"> • "Quadruple helix" • Collaborative leadership • Boundary Spanners 	Clusters themselves exhibit a long experience with ensuring participation and effective governance, and there is significant potential to learn from and improve these governance structures and processes in the development of RIS3
Step 3: Elaboration of an overall vision for the future of the region <ul style="list-style-type: none"> • Constructing the vision: scenarios... • Communicating the vision 	The strategic reflection processes of existing clusters can provide lessons in constructing common vision, and the clusters themselves are important vehicles for construction and communication of a regional vision
Step 4: Identification of priorities <ul style="list-style-type: none"> • Combine top-down and bottom up approach • Vertical and horizontal type priorities 	Inter-cluster approaches and collaboration among and between Key Enabling Technology actors and clusters can play an important role in facilitating the coordination of bottom-up and top-down input into prioritization processes
Step 5: Definition of coherent policy mix, roadmaps and action plan <ul style="list-style-type: none"> • Experimentation possibilities 	Cluster policies have followed a similar path, and experience shows the importance of policy flexibility and mechanisms to ensure sophisticated policy intelligence
Step 6: Integration of monitoring and evaluation mechanisms <ul style="list-style-type: none"> • Monitoring to follow the process of experimentation • Evolve and adjust according to changes in economic and framework conditions 	Experience with cluster policy evaluation suggests the importance of mixed methodologies and a policy learning focus

Source: Own elaboration

Re-thinking clusters in the smart specialisation era?

The analysis of experience with clusters and cluster policy in the Basque Country, as summarised in the preceding table, illustrates many of the synergies that exist between these two concepts. What is more, it highlights an important starting point that many territories, both in Europe and Latin America, have in place already when embarking on processes towards a territorial strategy for smart specialisation. It also raises some questions around the need to re-think our understanding of clusters and cluster policy so that they can provide the strongest possible foundations for these territorial strategies.

In particular, it is clear that the boundaries between clusters are becoming more porous as new opportunities emerge in the nexus of economic activities, technologies and market opportunities. This would suggest that inter-cluster collaboration is taking on a new importance for entrepreneurial discovery processes in this context, both within a given territory and indeed across territories (a dimension that is often neglected in debates on territorial strategy). In this sense rigid clusters can present barriers to the cross-fertilisation of ideas, implying that in some cases cluster policies themselves will have to adapt and become more flexible to moving boundaries. Above all, however, smart specialisation strategies and future cluster development should go hand-in-hand, embracing each other in a context of learning and improvement and building from their synergies.

Clusters in the Caribbean:

Understanding their characteristics, defining policies for their Development

by Roberta Rabellotti (Università di Pavia, Italy) and Elisa Giuliani (Università di Pisa, Italy), in collaboration with Rachel Alexander (University of Manchester, UK)

During the last two decades, industrial clusters have showed successful performance and an ability to drive the growth of developed countries' regions in Europe (see the cases of Italy, Germany and the UK), the US and Japan. These success stories have attracted interest from scholars in development studies and policy makers at international organizations, such as UNIDO, UNCTAD, IADB and the WB.

Caribbean economies face several unique challenges to which a focused approach on clusters and on their characteristics (such as collective efficiency, information and knowledge sharing, division of labor, sharing of specialized inputs and collective access to market) suits the Caribbean. Clusters represent an opportunity for Caribbean economies and their enterprises, in particular their SMEs, to access larger and more sophisticated markets, to improve knowledge and technologies, to train specialized human capital and to lobby governments for infrastructure and specific policy supports that would otherwise be unavailable to individual companies.

The aim of this report is to map Caribbean cluster cases and identify their specific characteristics, based on the existing literature and on the available empirical evidence on clusters and on cluster innovative capacity. An empirical exercise has been undertaken through a desk review of 32 cases of Caribbean clusters distributed in a variety of industries across the Caribbean, such as natural resources based industries, comprising agriculture, agro-processing, forestry, aquaculture and energy; manufacturing; and services, embracing tourism, creative industries and business services.

The empirical evidence collected has been carefully analyzed along six cluster dimensions that we consider to influence their competitiveness, on the basis of prior academic work. The six dimensions

are cluster structure, collective efficiency, innovation capacity, openness, stages of the cluster life cycle, and the role of policies. Each dimension has been assessed on quali-quantitative grounds – i.e. based on a very detailed analysis of available texts, we have measured each dimension quantitatively (typically using Likert scales or other categorical classifications).

Based on these key cluster dimensions, through cluster analysis – a multivariate statistical technique that serves to identify different groups of similar actors – we have identified three groups of clusters, two of them (named *Rising and Innovative Clusters*) are fairly similar, and they are both markedly different from the other group (named *Sluggish Clusters*). *Rising and Innovative Clusters* include the most dynamic, innovative, open and collaborative types of clusters in the Caribbean region – with some differences existing in terms of their innovation capacity, cluster life cycle and organizational structure. In contrast *Sluggish Clusters* represent the most passive and backward clusters in the region.

Rising Clusters include mainly emerging and growing clusters at the early stages of the cluster life cycle. Clusters in this group specialize in relatively new industries for the Caribbean region, such as the animation and the multimedia sectors, or exploit new market segments, as can be found in eco-tourism in Grenada, Guyana and Suriname. Moreover, they tend to be very open to external actors, partially because they are populated by hub firms. In fact, this group includes all of the hub-and-spoke clusters identified in this study. This organization structure facilitates external connections for cluster-based firms, as it allows access to knowledge and markets. Two examples from Guyana are the coconut water cluster, which is organized around a processing firm from Trinidad and Tobago and the non-traditional agricultural products cluster led by an Israeli

MNC. In spite of being open and growing, these clusters do not display outstanding records both in terms of collective efficiency and of innovation capacity, which we classified as medium in our scale. Hence these clusters still deserve policy attention to further sustain cluster development.

Innovative Clusters share some similarities with the group of Rising Clusters (i.e. high collective efficiency and openness), but the former are more innovative than the latter. Marshallian clusters displaying high collective efficiency and innovation capacity compose this group. Their sectors of specialization include some of the traditional industries in the region, such as the oil sector and the business, financial and maritime services, as well as the very dynamic aquaculture clusters in Guyana and Belize. This group appears to include the most successful clusters in the region, most of which have participated in cluster policies.

Sluggish Clusters are far less active and dynamic: they have on average a low to medium level of collective efficiency, very weak innovation capacity and a low degree of openness. These clusters take a Marshallian organization structure – i.e. they are populated mainly by local small enterprises, which interact with each other at either a sub-national, urban or national levels. In some cases, their firms target the local market only and this represents a clear constraint for further growth – as can be seen in the cases of the pottery and retail clusters in Trinidad and Tobago and that of the gold jewellery cluster in Guyana. This group includes several spontaneous clusters, many of which would benefit from the presence of cluster policies.

Drawing from this classification, we provide diversified policy recommendations for the different groups of clusters. In Rising Clusters policies should focus on: a) fostering innovation, b) helping the transition of emerging clusters to a growing phase; c) supporting the consolidation of leading actors. Innovative clusters are the most successful in the region. In these clusters, policies should very selectively promote promising projects. Because these clusters are already rather dynamic, such dynamism should be enhanced and sustained but this should be done by targeting projects that are likely to further push these clusters to the frontier of knowledge or to allow these clusters to serve highly demanding markets, or market niches.

Finally, in Sluggish Clusters priorities should be: a) strengthening local joint action; b) enhancing openness for the access to valuable resources like knowledge and technologies; c) building up innovative capabilities.



George Gabor Burt

Author of *Slingshot*



Forum for Partnership in the Americas

Shares his perspectives on stimulating imagination, innovation and creativity based on his ideas from the *Slingshot* framework.

- A global authority on re-imagining boundaries and highly successful in enabling organizations to overstep perceived limitations and to carve out successful growth strategies;
- A mastermind of innovation, creativity and strategy development, he was named on a recent list of Top Visionaries; and
- Gave the opening presentation at the World Marketing Forum in 2013

1. What is *Slingshot* and how can it be functional and efficient in Latin America and the Caribbean?

Slingshot is the strategic framework for re-imagining boundaries. The image of a slingshot is symbolic of childhood, and reminiscent of the story of David and Goliath where the unconventional weapon of a sling was used by a youth to defeat a seemingly much superior foe. The *Slingshot* framework reconnects us with our childhood creativity and enables us to see the world as full of opportunities rather than limitations.

The connection to business is that CEOs around the world see creativity as the single most important quality for leadership going forward. However, there is a universal void for creativity in all spheres of modern society. We lack new ways of solving lingering problems. That's where *Slingshot* comes in, by showing how we can systematically access and channel our creativity to drive smart strategies.

Regarding Latin America and the Caribbean, I am pleased to say that interest in *Slingshot* is very robust in your region, and the framework has been well received and applied.

2. If, as children, our imagination has no boundaries, what do you suggest to reinforce their creative abilities? In many instances, children in Latin America and the Caribbean are growing up disconnected from the Internet—in some cases amidst poverty and violence—with access to basic education, but not quality opportunities or STEM-driven instruction. Despite these realities, how can we bring out the creativity within?

Creativity is a resource that is free, abundant and available to all regardless of environment or social standing. In fact, it is when we have less resources that we tend to rely more on our creative strengths. According to Sir Ken Robinson, a world authority on education and creativity, most education systems in leading countries are designed to educate children

out of creativity rather than into creativity. Being able to side-step those systems can be advantageous to developing countries.

For example, growing up without continuous reliance on high-tech gadgets provides an opportunity for children to look around their environment and see things with curious eyes, to invent games using simple things that surround them, to continuously apply their creativity rather than become dependent on someone else's. Having spent my childhood in Budapest, Hungary, a less developed country, I can personally attest to the advantages of growing up in a place with relatively less abundant resources.

3. How do we apply business strategy principles and solutions (such as the *Slingshot* framework) to design and implement public policy?

Slingshot is a business framework, but it is also a universal framework for re-imagining boundaries. If you are successful in how you creatively think about your business, then you can use the same approach elsewhere—in education, politics, environmentalism, culture, even personal relationships. Public policies can be designed to foster creativity at all levels and ages of society, promoting creative problem solving for social issues. It is when we ask the 'what if' questions that we can come up with breakthrough policies and solutions. The simple notion of promoting creative problem-solving is something that policy makers should make part of their agenda, as it results in innovative solutions to complex problems powered, by the abundant and free resource of human creativity.

4. Can you let us know how the implementation of the *Slingshot* Framework has benefitted businesses? Can you provide concrete examples and tell us which have been the keys to success? Do you think this is possible in the Caribbean and Latin America where micro and small businesses make the bulk of economic activity and employment?

I can give you examples of how *Slingshot* has benefited both a leading multinational as well as an SME. Among large companies I have worked with is American Express, where *Slingshot* helped to define how to re-imagine market boundaries. The end result was the launch of a completely new business in partnership with Wal-Mart, called Bluebird. The *Slingshot* framework can be equally well applied to benefit SMEs. For example, a small business that owns and operates a university housing complex in Michigan was able to vault its occupancy rate from 70% (near breakeven) to 100% in a matter of months, by applying the *Slingshot* principles.

The *Slingshot* framework has already been embraced throughout the Latin American and Caribbean region in countries like Chile, Columbia, Jamaica, Nicaragua and, of course, Trinidad and Tobago. I see a big opportunity for small businesses and aspiring entrepreneurs who are open to creative thinking and therefore can be empowered to re-imagine boundaries. In particular, I am encouraged by the entrepreneurial communities in your region.

5. Can you provide leaders of economic competitiveness and innovation of the Americas with three recommendations to set priorities to focus efforts and resources to build more innovative, prosperous and inclusive communities?

My first recommendation would be to focus on promoting creativity across all spheres of modern society: in education, business, politics and so on. When people are encouraged to approach problems in imaginative ways, it becomes part of the culture and part of the way you do things. Institutions such as RIAC can assist in this process by supporting the idea of elevating creativity to an important policy issue in the region.

Secondly, I would look at the process of innovation particularly emphasising cost efficiency by seeking combinations of already-existing components rather than thinking of innovation as having to invent something no one has ever done. I call this the "innovation shortcut." When you are in developing regions, it is especially important to understand how to pursue initiatives that are cost-effective, which is what can be achieved by re-imagining how already-existing components can be used in new combinations. As a point of inspiration, the first Apple mouse was designed by combining two ordinary, seemingly unrelated objects: a butter dish and a roll-on deodorant.

Thirdly, I would recommend that policy makers put emphasis on social capitalism, which is the idea that you can combine doing good with doing well. Businesses today know that they need to think not only about their own welfare but also about that of the environment and society around them. Policy makers are in the ideal position to link the different actors be it businesses, NGOs, financial institutions, etc. to form a more holistic partnership and to co-create an economic and social environment that benefits everyone.

6. In Latin America and the Caribbean, the role the private sector plays in increasing innovation levels is limited. Based on your experience, what incentives can be provided to the private sector so that they can play a larger role in encouraging innovation at the subnational level?

One incentive is to have events designed to specifically engage the private sector; events like the Forum for Partnership in the Americas at this year's ACF. Such events bring members of the public and private sector into partnership and serve as the intersection of two traditionally separate spheres.

Moreover, these types of events should occur on a regular basis and provide follow-up activities. I am personally motivated to make this Forum for Partnership in the Americas a foundation for future initiatives that help the private sector, create an entire community of innovators, and create an environment of heightened competitiveness. So, for example, I will offer a *Slingshot* certification workshop series starting in Trinidad and Tobago which will then be available in the whole region. Under this initiative, entrepreneurs, corporate executives, students, as well as other members of the local community, can experience and learn how to apply the *Slingshot* framework to their own businesses or ideas, and be certified on the process under very favourable terms. A further extension can be to create the *Slingshot* Awards as a national or regional award process that recognises companies, entrepreneurs, individuals or ideas that are re-imagining boundaries with the most impact every year.

Lastly, it is important to point out that the theme of this year's ACF is 'The Human Imagination at Work: Driving Competitiveness, Powering Innovation' and the topic of the Forum for Partnership in the Americas is 'How to use Imagination to Drive Sustainable Innovation'. This underscores the notion that tapping into our imagination and creativity is central to policy makers and business leaders, with the conference elevating the topic to a regional level discussion.

Jane Allen

Global Leader for Renewable Energy, Deloitte



Panelist: Energy Competitiveness and Innovation

Presents her perspective on the future of energy, energy innovation and trends in the LAC region.

- Specializes in strategy and business performance improvement and consults with energy clients in Canada and internationally;
- A Deloitte Partner, Jane leads Deloitte's Power & Utilities practice across Canada; and
- Former Policy Advisor to the Ontario Ministry of Energy and Assistant Dean at the University of Toronto's Faculty of Management.

1. From your perspective in Deloitte, what are the main trends you see developing in the energy sector in the Americas? What could the future look like in terms of key issues, collaboration and development of energy solutions in the LAC region?

There are a number of key trends developing in the energy sector. Firstly comes the emergence of inexpensive shale gas, which is going to make natural gas the fuel of choice for electricity production and will also increase the use and development of natural gas vehicles and the infrastructure required for it. Secondly, because of increasing investment, the price of renewable energy continues to drop. Thirdly, advances in information technology are going to improve the management and efficiency of electricity.

In terms of the LAC region in particular, I see a real opportunity for the development of a regional energy strategy to map the supply requirements, demand, availability and the infrastructure requirements.

2. Do we have the right balance of opportunities and technology between non-renewable and renewable energy sources? Which energy innovations hold the greatest potential as energy solutions for the LAC region?

While we move towards renewable energy, we will reach this stage probably in the distant future. Therefore we will continue to need a mix of fuel types everywhere in the world. Achieving that balance is a matter of understanding what resources are available in your region and taking steps towards maximising those resources.

In terms of the LAC region, if we set aside conventional energy sources, we will find that

solar energy and energy efficiency hold the greatest potential for the region.

Solar because it has so much potential if we can get the conversion ratio right and get the price and cost down. When the ability to convert the sun's energy is less expensive, that will be a huge boost in meeting the requirements of industry. Energy efficiency is nowhere near utilized as much as it should be. We don't take energy efficiency into account enough when we are building or developing manufacturing plants, using it in our homes etc. and there are so many opportunities to do so. We just need the right incentives and the right types of technology to enable us to do that easily.

3. In terms of energy production and consumption, countries in our region are at varying stages: some have the capacity to produce all kinds of energy, some have very specialized industrial capacities, and some are net importers of energy and lack the means to invest in alternative resources. How can we make this balance work to promote cooperation and support development at the economic and social level?

Creating the right investment conditions is probably the highest impact initiative that countries can take to improve collaboration. For importing countries to take advantage of the innovative energy solutions, the availability of new energy sources or the know-how from other countries in the region, they have to create the right conditions. They can do this by establishing development zones that have low taxes, investment tax credit or setting up a range of incentives that are going to attract the companies, facilities, people and the know-how they require to improve their own energy sectors.

4. There is a lot of interest in several countries of the Americas and around the world to explore and exploit shale gas. What would be your recommendation to undertake this process in a way that is conducive to the viable and sustainable long-term economic and social competitiveness of the host communities undergoing this transformation?

Some of the early issues with companies in shale gas development have to do with companies not recognizing the importance of developing the local community. Companies need to have a knowledge of geology and the landscape of the area but the most important thing they can do is to have an understanding of the local community—what kind of jobs can they fill, what educational supplements are required, what more can they do to help grow the community and meet its needs—rather than being seen as a company that comes in primarily to exploit resources.

The more that companies put the effort into doing that, the more that they're going to be able to create a welcoming community that can help them sustain their business and provide jobs that are sustainable. We've seen time and again with infrastructure projects, where companies don't take the time to invest in creating a strong relationship with the community that it has led to their failure.

Universities and governments have roles to play as well. Universities need to be a source of unbiased research on the impacts of any form of development, or in this case, shale gas development, so that they can educate all of the parties involved in the development project. It should be the role of local government to provide to project developers information about what the community is looking for.

5. We have seen energy prices and agendas work in cycles. What lessons can you share from your experience to best prepare for the cycles in the energy market? What are the major challenges hindering the development of renewable energy solutions in the LAC region?

Energy markets are complex and are easily upset by politically-motivated change which, in turn, creates price volatility, harms electricity users and this uncertainty drives away business. I can highlight some ways to best manage the

complexity and uncertainty of the energy market in the process of energy development.

Firstly, governments must have clear and consistent legislation, regulation and policy in order to attract the investment that they require to develop the energy infrastructure and the energy market on a whole. Historically, government policy has been changeable and inconsistent and this only hurts viable development of the energy sector.

Secondly, governments need to establish long term energy plans based on fact-based analysis rather than political aspirations and they need to communicate those plans so that potential energy developers know. There are many resources available to help develop long term energy plans, many organizations with the information and expertise can be drawn on, such as the World Energy Council and the International Energy Agency.

6. In your opinion, what should we foresee in the future for electricity markets in terms of collaboration in Latin America and the Caribbean? What are good practices existing in other regions in the world to boost competitiveness in this sector?

I think collaboration is good. Sharing knowledge, information and creating opportunities benefits the countries involved and I can think of the European Smart Grid group as an example of effective collaboration. However, we must also be cautious as collaboration in energy policies is dependent on the politics of the day and that can be very uncertain and can change between electoral periods which could potentially lead to a breakdown in collaboration. Collaboration can be a great thing but it requires great political will which is not always there.

7. How do we improve the enrolment of women and promote creative learning and critical thinking in early stages in school leading to new developments and innovation particularly in the field of energy? How do we connect early education to the innovation that is required to advance the region?

There is always new information, technology and gadgets available—smart phones, iPads and things like that that make it far more interesting to learn about engineering, math, energy and science. These subjects are far more interesting to think about now as compared to years ago when it was about equations on blackboards. Today we have new tools that enable you to see the outcomes of critical thinking and the algorithms that you have to use when you're thinking about energy or when you're trying to develop innovative ideas.

There are quicker ways to get from the thought process to what it is you're trying to create and I think that is going to help both boys and girls. However, for girls in particular, we also need to have women teaching these things. They need to see other women who are interested in these areas, who they can look up to and see themselves in those roles as well. So it's a combination of using interesting methods and tools and having women as role models for young girls to be attracted to those roles and occupations.

8. How can we best prepare government and policy makers over the next twenty years in terms of policy planning in the face of unpredictability in the future of the energy industry?

It is important for governments to have a well-staffed energy strategy group that can develop the potential future energy scenarios based on the information available, monitor the scenarios regularly, and adjust the initiatives and policies to reflect the conditions at the time. We lose a lot of institutional memory when governments turn over but if we had a strong strategy group that was continually monitoring the market place and monitoring conditions to reflect changes that would go a long way to providing stability, innovation, growth and development of infrastructure and all of the foundations of strong energy system.

Kyle Maloney

Director/Founder, Novus Tech Ltd



Panelist: Services Industry as a Driver of Innovation

Presents his perspective on the IT and services industry in the Caribbean region.

- Successful young entrepreneur making waves in the Caribbean tech landscape;
- Founder of innovative enterprises which bring valuable tech solutions to the Caribbean region; and

Breakthrough Innovations and the New Generation

1. As a young entrepreneur, what are the major challenges you encountered while establishing and conducting business in a region that lags behind on technological and innovation rankings? What do you think can be done to improve the process of business creation in the region? Where would you like to see us as a region in the next 5 years?

As a company in the technology space, we face numerous challenges conducting business. Our most impactful ones are talent and access to capital. FIRST is a company that is taking on the challenge of using online technology - websites and mobile apps - to improve the lives of people in the Caribbean. To build products capable of such scale, we elected to work with teams who took on similar challenges, from countries like the US, Poland, the UK and India.

Entrepreneurs pursuing solutions to complex problems with high growth opportunities need an environment that supports such growth. Due to the high risk of these ventures however, access to capital through traditional means may be infeasible. The cost of capital is too high in the region. The banking sector locally, and by extension the Caribbean, is very liquid. As such, there is little demand for opportunistic approaches to innovative business models. The liquidity often causes the banking sector to become risk averse as they see monetary success in traditional investment activities. This affects innovation and reduces the growth of talent towards such.

I would recommend the development of a regional Venture Capital industry. Venture equity involves

not only the contribution of capital, but also of managerial experience, professional monitoring and advising. The development of this industry can significantly improve the process of business creation in the region.

Much research has been done on the impact of Venture Capital on innovation and firm growth. Numerous studies have found that venture capital enables the pursuit of business operations that would otherwise lack the necessary resources, due to particularly high uncertainty. Venture capital attempts to allocate scarce financial resources to the most profitable uses—companies who, based on a rigid evaluation, are believed to best succeed. As a region, in the next five years I would like to see us more heavily leverage our global village to aid with our progress. I am excited to see companies develop throughout the region to take on these challenges through the use of technology.

2. How competitive is the Information Technology (IT)-based services industry in the region? Do you see the Caribbean region making advances in this field of business? What policies should be implemented to facilitate the growth of the IT based services industry and to encourage entrepreneurship in this field?

The IT-based service industry is a broad one, as it extends from companies providing enterprise network solutions to the space where FIRST exists - online web and mobile app services; A 2-sided market, as we provide services for both consumers and businesses. We see many companies working to present themselves as viable solutions, and these developments excite us, however, we are yet to see any single application become a household name. With the increased focus and investment that is going into this aspect

of the technology industry, I am confident that we will soon see many break-through applications providing services tailored to our local challenges.

In order to facilitate growth in this field, there should be a strategic approach to accommodate foreign investment, support and mentorship from benchmark countries. In addition, I believe that policies to support data protection, e-commerce transactions, creative financing and international talent sourcing should be created.

3. Your company Novus Technologies applies technology solutions to promote sustainability and environmental conservation. How can we stimulate social entrepreneurialism within societies that focus on shareholder satisfaction? Based on your experience, what are the most feasible technology solutions available that Caribbean economies can use to tackle social and economic ills?

The Brundtland Commission defined sustainability as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. We are just beginning to experience the widespread impact of the less sustainable development practices of the generations that came before us. The Caribbean environment is heavily susceptible and vulnerable to global practices that do not consider the social and environmental cost of industry. The paradox is that, as a region we are also behind the curve in the implementation of sustainable practices. Growth in this sector will be stimulated through consumer education. As consumers become more aware of the negative impact of unsustainable growth, the demand for products and services that better align will increase, thereby forcing companies to favourably adjust their practices if they are to survive.

The cost of implementing more sustainable technology solutions decreases significantly every year, enabling consumers to more easily adopt better practices. Some great examples are LED lamps, solar water heating and solar panels; these products are helping companies and households reduce their carbon footprint and save hundreds/thousands in expenses.

4. New technology such as social media platforms have had significant impact on business operations and strategy development. What can we do to overcome barriers to new technology adoption within Caribbean SMEs? For example while Social Media is popular in our region, it is not being optimized as a strategic business tool. Based on your perspective what technological solutions should be implemented to boost the competitiveness of SMEs? Do you think there is the possibility for the next Facebook to emerge from within the Caribbean?

The barrier to technology adoption is education. Once SMEs understand how to strategically implement the use of social apps to better engage with and understand their consumers, the adoption rates and impact will increase. Understanding this, at FIRST, we engage one-on-one with our SME clients, providing locally tailored articles, and demonstrating how to best use the application to drive results for their business.

In order to boost their competitiveness and drive increased consumer satisfaction, SMEs should utilise applications that equip them with a deeper understanding of their customers. Their goal should be to consistently improve their products or services as they better understand the desires of their customer segment.

Global Web Index states that of the 10 most popular apps used in the world, 8 of them were born out of the US. While the possibility does indeed exist for the Caribbean to produce amazingly scalable applications with great impact like Facebook, the environment to facilitate such growth must be set in place.

5. New technology is also changing customer behaviour. Customers are now more knowledgeable, better informed and seek social interaction. How can budding entrepreneurs in the Caribbean take advantage of the characteristics of this new type of customer? What business opportunities has technological development created that have yet to be explored in the Caribbean region?

A more knowledgeable consumer is more empowered to have an impact on the direction of business growth. Entrepreneurs should lead from the front, be open and adapt to this change, by producing better products and services in line with the more informed consumer's demand.

Technology development has created many opportunities for businesses to produce solutions tailored to our Caribbean environment, I believe we will soon see more local-focused apps that transform the way we shop, stay healthy and entertain ourselves.

6. Having recently exited the education system in the US, what do you think needs to be changed to develop the education systems in the Caribbean region? How do you view us now given the student populations that you were exposed to and do you agree with the notion that in order to be successful migrating out of the region is necessary?

At FIRST, we have team members who have been educated at tertiary institutions around the world - Florida, New York, Minnesota, London, Scotland, Cambridge, Australia, Barbados, Jamaica and Trinidad and Tobago, to name a few. And we have found that the contributions made by each and every one of them, regardless of where they received their degree, are equally valuable. There are some noted differences in the strengths of those who were educated internationally, however this produces a healthy mix of ideals and approaches to find solutions to the problems we have undertaken.

Living and studying internationally has helped me to appreciate the ability many Trinidadians have to relate to different cultures, given our own history and diverse demographics. It has equipped us to think of solutions to problems multi-dimensionally.

Success is hinged on many varying factors; and while I do not believe that migration out of the region is a pillar for success, I think that travel and the immersion into various cultures empowers people to think more holistically about the solutions we create and their true impact. Problem solving is about looking at the rubik's cube from its many faces.



Competitive Central America By SIECA General Secretariat

In the last few years, Central America has achieved significant progress in the sphere of economic integration in order to capitalise on its production and cost benefits and improve regional competitiveness within the global economic environment.

In the area of commercial integration, the region has continued to advance in the improvement and expansion of the free trade zone with the recent incorporation of Panama into the Central American Economic Integration Sub-system, the establishment of the Central American Customs Union and the strengthening of commercial links with its main partners (the U.S and European Union) through compatible or common agreements. Additionally, large scale projects which seek to improve electrical connectivity, road infrastructure, security and border control in the region have been executed.

Despite the progress in these areas, the region's growth remains below that of its competitors in Latin America and Asia. Poverty continues to be a great challenge even as Panama and Costa Rica show significant development as the leaders in economic growth and poverty reduction in the region. If Central America expects significant and sustained growth, the region must considerably improve its productivity vis-a-vis other participating economies in international markets in order to generate employment and wealth for its people.

With regard to growth and development, Central America is a homogenous region on account of its notable lack of natural resources in comparison to other countries in the Western Hemisphere. Conversely, it is heterogeneous with respect to its living conditions. According to figures from the World Bank, in 2012 Costa Rica and Panama had a GDP per capita between \$13,320 and \$16,946, while El Salvador, Guatemala, Honduras and Nicaragua had a GDP per capita of less than \$7,575.

In terms of production and exports, there is a degree of homogeneity among Central American countries, resulting in productive development concentrated in a small number of sectors such as commodities, food and manufacturing, despite the fact that Costa Rica has made considerable progress in the production of high-value goods. Although to date, these efforts have contributed to the growth of the regional economy and the attraction of Foreign Direct Investment (FDI) has added, to some extent, to diversification, the statistics show that Central America needs to make a greater effort to become competitive in the area of exports. This can be achieved by aiming for higher productivity and value, diversification of its products and target markets, as well as actively participating in a large number of lucrative global networks.

Countries have tackled this situation by implementing strategies such as increasing exports, promoting investments and introducing national reforms to facilitate trade. However, the programmes implemented have failed to include a key element; a shared regional vision regarding competitiveness on which a consensus-based strategy based on public and private dialogue can be devised. This regional focus would provide the following benefits: i) an improved utilization of existing trade agreements; ii) greater use of the region's leaders with respect to creation or consolidation of lucrative networks, quality and use of technology for knowledge sharing and development of products with greater sophistication; iii) promotion of the region's supply chain with large international networks; and iv) encouraging regional public policy reforms in order to facilitate strategic foreign investment and improve the trade environment.

Within this context, the following questions arise: Is there room to establish a regional competitiveness plan? Would this plan complement regional initiatives so that improved levels of productivity can be achieved thus

allowing the countries of the region to compete with other developing economies such as those in Asia or Latin America? And if this space exists for a regional competitiveness plan, which areas should be its focus?

An analysis of the requirements not dealt with by the different projects and the evidence which shows the need for coordination of the different initiatives being executed at the national level, it can be concluded that the region requires a regional programme which addresses the aforementioned shortcomings. In light of this the Central American Economic Integration Sub-system (SIECA) together with the IDB and other strategic partners are currently establishing the Central American Competitiveness Project which seeks to encourage collaboration among governments, the region's private sector and key players in the international community such as international funding organisations and bilateral groups. This collaboration is aimed at promoting measures to increase commercial productivity in the region, encourage growth, improve the business climate and facilitate trade. The project is also poised to design regional programmes which take into account the needs of Central American countries with a focus on the existing degree of diversity or heterogeneity and the capacity of some of these countries to spearhead lucrative networks or transfer best practices to the other members of the group.



NOTE: Adapted from the Concept Paper on Central American Competitiveness

**The Innovation and Intellectual Capital Systems of Businesses:
An Approach to the Dominican Case**
By Victor Gómez-Valenzuela, Ph.D.

This study is part of the project: "Intellectual Capital Management and Industrial Property in the Dominican Republic: Incentives and Institutional Articulation of the National Innovation System", a joint effort by organizations in the public and business sectors and civil society of the Dominican Republic, including the National Office of Industrial Property (ONAPI), the National Competitiveness Council (CNC), through the project "Capacity Building for Sectoral Policies in the Area of Competitiveness," funded by the European Union, the Atabey Innovation Center and the Association of Industries of the Dominican Republic (AIRD).

It seeks to explore the influence that the dimensions of intellectual capital (IC) have on business performance. A series of questions included in surveys for businesses were designed to establish the role of intellectual capital in the Dominican Republic and, based on the findings, support the design of better public policies on competitiveness and innovation. The elements of IC considered in this study were analyzed from a context-specific point of view, that is, they were considered as inputs to businesses' value-generating processes.

For purposes of this study, intellectual capital may be defined as a combination of human capital, structural capital and businesses' relational capital (Sánchez, 2008), and also the capacities and different types of knowledge (and its levels of complexity) owned by each company, including experience as a level of knowledge, and the codification and use of these forms of intellectual capital (in manuals, procedures, trademarks or patents) depending on the institutional reality of each business and the dynamics of articulation of the different elements of Intellectual Capital (Ochoa Hernández, Prieto Moreno, & Santidrián Arrollo, 2007).

Considerations on Intellectual Property

The Dominican ONAPI granted 177 invention -patents between the years 2000 to 2012, and among them, only 8 patents were granted to Dominican residents, which is less than one per year. Therefore, 95.5% of patents have been granted to foreign nationals and/or companies. Dominican Republic nationals have been granted only 16 Patents by the United States Patent and Trademark Office (USPTO) for the period 2000-2012 (USPTO, 2013). Compared to Central American countries partners to CAFTA-DR, the Dominican Republic is outpaced by Costa Rica (77), and also by other countries in the region such as Cuba (62) and Panama (22). During the same time period ONAPI registered 40,723 trademarks, of which 34,390 were registered to foreign nationals (equivalent to 84.3% of all applications) and only 18 percent to residents of the Dominican Republic.

The Dominican Republic's national innovation system provides for three main types of incentives for innovation: regulatory incentives, as provided in Law 20-00 on industrial property; insolvency funds or direct transfers (FONDOCYT of Law 139-01); and, fiscal incentives, based on tax exemptions codified in Law 392-07 (Rivas Sánchez, 2008; Scotchmer, 2004). Despite having these incentives, stakeholders do not take advantage of these opportunities because existing legislation does not create the mechanisms and interfaces to drive the public-private dialogue on matters of innovation policy. To highlight the dimension of this problem, for instance, it is worth mentioning that of 167 projects approved by FONDOCYT between 2005 and 2012, only two initiatives were private sector-driven, that is, only 1.1% of projects. In terms of direct financing for private R&D initiatives, approved projects represent a sum of little more than RD\$ 5.9 million, approximately 0.7% of the total financing approved up to 2012. FONDOCYT is one of the most important sources

of support for the Dominican Republic's scientific community. FONDOCYT should be strengthened and deepened, but in a way that is more attuned to the competitiveness and development policies of the Dominican Republic and connected to the productive sectors' needs of innovation and knowledge production.

Results: Characterizing Businesses

69% of businesses concluded that they were very familiar with the concept of Intellectual Capital. However, when asked if they have implemented any IC management tools, 65.4% of all businesses answered that they have not implemented any whereas only 34.6% have done so. Regarding specific modalities of IC tools, the most popular is the "Modelo Intelecto" (16.1%), followed by the "Balanced Scorecard" (5.1%), the "Directrices Meritum" (4.2%) and in equal proportion (1.7%) the tools "Nevegador Skandia" and "Intellectual Assets Monitor."

Final Considerations

The results show that, in general terms, the different IC components acceptably explain that businesses drive their performance on matters of business and innovation (Low & Kalafut, 2002). There are at least three analytical lines to guide future actions: 1) the relevance of the components of Intellectual Capital in driving the innovative and competitive capacity of businesses; 2) the need to overcome the vague and unrealized approach of innovation processes; and 3) the development of a programme that contributes to the strengthening of the innovative profile of Dominican businesses. More specifically, in the Dominican case, as far as the results of innovation are concerned, the structural capital components have greater weight than the human capital components. The weight of Intellectual Property (IP) management on the structural capital case has been highlighted, and this is probably related to the intense activity of registered trademarks in ONAPI. The factor of Relational Capital participates in the innovation dynamic of businesses due to its role as a source to bring new technologies and knowledge inputs.

The results obtained show that it is difficult to recognize R&D as a formal activity within the surveyed businesses. This may be an indication that while businesses may seem aggressive in the development of products and/or services, they do

not register these efforts in their accounting as an R&D expense and they do not measure the value of informal lessons derived from the daily interaction of workers with production technologies (W. M. Cohen & Levinthal, 1989). Connections of businesses with other actors (universities, research centers) to support the development of products/services are very limited.

To strengthen the innovative profile of Dominican businesses, it is necessary to deepen the commitment of public policy makers to a private agenda anchored in the management of knowledge and innovation as a source of new competitive advantages for Dominican enterprises. This constitutes an opportunity to begin a structural change in the Dominican model of growth to lead the country along a new road much more intensive in the use of knowledge; a true investment in the development of Intellectual Capital countrywide. A change of this nature should be a gradual process that will take at least a generation in the context of the National Development Strategy 2030. In the interest of strengthening the innovative profile of businesses and thus of building structural competitiveness capacities, a programme is proposed based on four groups of strategic actions derived from the exploration of the IC of businesses: 1) the transfer of Intellectual Capital management tools; 2) the visibility of R&D and spending on innovation; 3) the reorientation of the framework of existing tax and non-tax incentives in the country; 4) the improvement of the learning environment.

Finally, with respect to the improvement of learning environments in businesses, a first step would be the creation of a formal system of accreditation of professional competencies. Such a system would contribute to the enhancement of the human capital of enterprises. The accreditation or official recognition of knowledge, skills and other abilities constitutes a key step. The training of certified and accredited engineers is key in attracting direct foreign investment to high-technology sectors and to increase and improve the innovative capacity of the economy (Furman et al., 2002), which has proven effects on the improvement of the intellectual capital of businesses (Subramaniam & Youndt, 2005), as well as on their technological absorptive capacity. (Wesley M. Cohen & Levinthal, 1990).



Gender Equality for Innovation and Competitiveness By The Inter-American Commission of Women (CIM)

The competitive advantage of an economy or business today depends increasingly on innovative ideas and intangible services. According to the World Economic Forum (WEF), we are moving from capitalism to "talentism". The low-cost production model promoted in the region in recent decades is obsolete and for a country to be able to compete, a transition towards a knowledge society centered on human capital is required. In this endeavor, it is necessary to include more women under conditions of equity and equality. Women constitute half the human potential available in the economies – a source of talent and hard work, imagination and creation, whose efficient use is essential for competitiveness and development.

Research conducted by McKinsey & Company (2007) suggests that companies that have a strong representation of women in their boards and in senior management positions also perform better. This is not necessarily due to the greater number of women, but to the possibility of having greater diversity and plurality in management and decision-making. There is evidence of the positive impact of increased participation by women in the workplace also at macroeconomic level. A study by Goldman Sachs (2007) shows that if employment parity between men and women were reached in the United States, the country's GDP would increase by 9%; this indicator would be 13% in the EU and 16% in Japan. While these estimates depend on many factors and are not necessarily linear, they serve to demonstrate that increasing equality benefits not only women, but also society as a whole with major impacts on sustainable development and competitiveness.

In this framework, the traditional concept of competitiveness associated with trade and economic performance has value only to the extent that it serves the broader goals of national productivity, improving living conditions of the population and as an opportunity to guarantee people's full exercise of their economic, social and political rights. Overcoming this vision of economic efficiency and comparative advantage

strategies implies using the notion of social competitiveness as an expression of an economy based on efficiencies, and which is accountable for the retributions it can provide to society as a whole.

The Region's economic growth in recent years and the advances in gender issues and women's rights in different areas, backed by legal and institutional frameworks and by programmes that promote gender equality, have not been sufficient to mitigate the inequalities in the region. Nor have they been able to reverse the generally low level of competitiveness in Latin America, all of which reflects the need for structural reforms and investments that can ensure higher levels of productivity and growth with equity and equality.

From an educational point of view, the region has never before had as many highly qualified women. In Latin America, women under 30 have surpassed men in educational attainment and enrollment at all levels and in virtually all countries of the region, with the exception of Bolivia, Haiti and Guatemala. 22.8% of women have 13 or more years of education, compared to 16.2% of men. However, a significant gap still persists between women's educational attainments and their status in the labor market.

Women's participation in the labor market in Latin America and the Caribbean increased by 35% since 1990, higher than the global trend, thus contributing to keep the poverty rate in the region 28% lower than it would be otherwise. Although women represent 51.2% of the total population and 52.1% of the working age population, they are overrepresented among the unemployed (71.7%), usually work in far more vulnerable jobs than their male counterparts and are subject to persistent gender gaps in labor force participation, wages, occupational segregation, precarious and informal work conditions, low participation in decision-making positions and power, and the double work day, among others.

This level of exclusion is also found in senior management positions. In the region, even though five women hold the highest office in their countries (Presidents in Argentina, Brazil and Chile, and Prime Ministers in Barbados and Jamaica); on average, only one in four parliamentarians are women - a trend that is similar in other branches of government. Women in senior management positions also have very low participation in public enterprises. Since February 2014, the powerful Petrobras is led by a woman (Maria das Graças Silva, Executive Director), possibly the only woman to head a corporation of this category in the region.

The main barriers facing women with regard to competitiveness include limited access to credit, corruption, unfair labor regulations and difficulties entering the formal market. Other factors contributing to the limitations include the education gap, gender stereotypes, legal and regulatory constraints, lack of effective implementation of existing legislative framework and weak policies to harmonize the productive and reproductive spheres. On this last factor is important to note that although women have entered the labor market almost irreversibly in recent years, this has not reduced the burden of reproductive work, including domestic work and caretaking.

In the fields of science, technology, engineering and innovation (STII), which are key to the development of innovation capabilities and competitiveness, women are also significantly underrepresented. In OECD countries, although women hold six out of ten jobs in the IT industry, only 10% and 20% of them work as engineers, computer programmers, systems designers and analysts. The vast majority of women in this sector carry out administrative work or work that is complementary to the core tasks. Also, although women obtain more than half of the degrees in OECD universities, they represent less than a third of the body of graduates in science and technology. After finishing their studies, women face discrimination when applying for research positions, programming or design. These barriers keep women away from positions of relevance, of knowledge generation, in industry and other sectors, preventing their access to better jobs, better working conditions and more employment opportunities.

According to Bonder [2013], in Latin America and the Caribbean, women represent 46% of all people working in science and technology - ten points more than a decade ago. In some countries (Argentina, Brazil, Costa Rica, Mexico, Uruguay and Venezuela), 30 and 55% of researchers in higher education institutions are women.

These percentages decrease markedly at the highest decision-making positions and becoming practically nonexistent in some countries. In Argentina for example, of 102 public and private universities and colleges, only 8 are headed by women. In the region, in general, women dominate in social sciences, medical sciences and the humanities; they are almost level with men in the exact sciences but there is a marked difference between men and women in engineering and technological sciences. In engineering, women's participation in some countries is as follows: Brazil 22%, Mexico 12%, Uruguay 27.4%, Argentina 17% and Costa Rica 19%. Beyond these figures, it should be pointed out that eight women in the region today are Ministers or High Authorities of Science and Technology (Belize, Colombia, Costa Rica, El Salvador, Guatemala, Guyana, Peru and Dominican Republic), about 24% of all countries.

Some of the factors that contribute to drive women away from science, technology and engineering include gender stereotypes; difficulties in balancing work, personal and family life; explicit and subtle discrimination; and social conceptions about science and scientists.

Within the inter-American System, the importance of gender equality in science, technology, engineering and innovation (STII)s was first addressed at a regional level at the First Meeting of Ministers of Science and Technology of the OAS (Lima, 2004). At this meeting, the highest authorities of the sector committed to take the necessary steps to integrate a gender perspective in STII policies and programmes, so as to achieve the full participation of women and men in the design, production and distribution of the benefits of a knowledge-based society; a fundamental step to improve levels of productivity and competitiveness.

In general, the recommendations adopted by the Ministers of Science and Technology (2004), were derived from consultation processes undertaken by the OAS and the Inter-American Commission of

Women (CIM) with experts from different sectors (public, academia, industry and multilateral agencies). Still valid, they focus on the following topics: (i) Institutional Strengthening and key strategies for a new commitment to society; (ii) the integration of a gender perspective in the STII; (iii) education and training; (iv) gender equality in the workforce STII; (v) building the knowledge society through equity and equality; and (vi) science and technology for economic and social development.

More recently, the V Competitiveness Forum of the Americas (2011), adopted the Consensus of Santo Domingo and its ten General Principles Competitiveness, which include gender equity among the key factors to improve productivity and competitiveness in the region.

Two of the national experiences in this Competitiveness report: Uruguay's Quality Model for Gender Equality and Peru's L'Oreal Award, represent important national efforts that reflect the above-mentioned recommendations. The Quality Model for Gender Equality, coordinated by the Ministry of Social Development (MIDES) the National Institute for Women and the National Quality Institute (INACAL) of Uruguay, has as its main objective to help integrate gender equality into the management of more than 50 public and private organizations, with a view to optimize staff competencies, increase their efficiency and competitiveness and contribute to social justice. Peru's L'Oreal Award, which also has chapters in other countries, is coordinated by the National Council for Science, Technology and Innovation (CONCYTEC), and seeks to identify and provide monetary grants to Peruvian women scientists who develop research activities to promote the production of new scientific, technological and innovation knowledge.

Addressing gender equality and equity in competitiveness, as part of the agenda of the Competitiveness Forum is essential to contribute to the exchange of experiences and the development of policies and strategies on this matter. This becomes even more important considering the role that the Forum could play in promoting a common agenda among Member States to consider the impact of gender inequality on a country's ability to successfully compete in the new economic context.

We conclude these thoughts with some additional considerations:

- Traditional variables to measure competitiveness do not take into account areas where women contribute significantly to national economies, such as unpaid domestic work and the informal economy. Therefore, it is essential to rethink the analysis and measurement of competitiveness beyond the productive sector and the formal economy.
- There is a need for an in-depth analysis of the relationship between gender equality and competitiveness, including among the issues, how the knowledge society can improve the condition of women and in what way gender equality can contribute to competitiveness and to the knowledge society.
- It is important to count on sex-disaggregated data in critical areas of competitiveness and the knowledge society, including the relationship between investment in R & D in each country, the number of professional women and men in STII; retention rates in education; patents granted. This can help to measure the impact of gender inequality in key areas to enhance competitiveness.
- In view of the continuing low representation of women in STII decision-making positions, there is a need for policies and strategies that create incentives for a greater participation of women in strategic areas to improve competitiveness and the knowledge society. This involves inter-sectoral and inter-agency collaboration.

The RIAC Task Force on Innovation and Entrepreneurship (TFIE)

One of the initiatives identified in the 2014 RIAC Work Plan was the convening of a Task Force on Innovation and Entrepreneurship (TFIE). This Task Force is comprised of regional experts and leaders from various backgrounds contributing to the advancement of the RIAC. TFIE members were invited to contribute intellectually stimulating research papers focused on innovation and entrepreneurship within the Americas, the challenges and obstacles to entrepreneurship and possible policy options and private sector initiatives that can be implemented to improve the innovative capacity and foster entrepreneurship in Latin America and the Caribbean. These recommendations and papers are a critical component of the Third Signs of Competitiveness in the Americas 2014 Report.

The meeting of the TFIE was held on Saturday May 10th, 2014, in Port of Spain, Trinidad and Tobago. It was attended by nine regional experts and chaired by the Senator Dr. The Honorable Bhoendradatt Tewarie, Chair Pro Tempore of RIAC, in collaboration with Ms. Maryse Robert, Director of the OAS Department of Economic and Social Development, as representative of the RIAC Technical Secretariat. The discussions surrounded key issues affecting the growth of entrepreneurship and enhancement of innovation capacity within the region.

Scope of Work of the Task Force

Members of the Task Force were required to undertake the following activities:

- Examine the Signs of Competitiveness Reports 2012 and 2013 to understand the key issues facing the region as discussed and highlighted;
- Produce a short research paper evaluating key macro-economic trends, assessing the effectiveness of implemented programmes and suggesting new policy options or programmes that can have a positive socio-economic impact on the region in the area of innovation and entrepreneurship; and,
- Present the summarized findings of these conclusions and papers, as part of the 2014 Signs of Competitiveness Report, in the RIAC Annual General Meeting in October 2014.

The key topics and premises considered by the TFIE included:

- How does the innovation process intersect with human creativity and social behaviour/inclusion?
- The role of networks as the key factor for innovation;

- Investing in People: Developing Talent and Mentors;
- How can human imagination, innovation and creativity improve the quality of life of the Hemisphere?
- How to connect arts, creativity and culture into the innovation value chain?
- How does the economic and business culture of Latin America and the Caribbean influence competitiveness?
- Initiatives for fostering entrepreneurial development.

KEY ISSUES RAISED DURING THE DISCUSSION AMONG THE EXPERTS

1. The Need for Education Reform

- The Education industry is in urgent need of reform and innovation. Current education systems and implemented curricula limit learning spheres. As such, they stifle imagination and restrict innovation capacities. Current curricula do not encourage entrepreneurship or instill the entrepreneurial spirit. Curricula need to be able to challenge the imagination from birth.
- Universities have become old fashioned and bureaucratic. As such students have a limited range of options for study programmes. Universities need to adapt themselves, focus on areas that students want to learn about and connect their efforts with the public and private sector. Universities need to be more innovative in the way they develop learning methods, engage students, diversity their programme offerings and enable access.
- Curricula need to be more hands-on with a focus on problem-solving. Professors and students need to be encouraged to take their ideas outside of the university environment and test them in the real world. Universities need to establish the proper support infrastructure for entrepreneurship and encourage research that will transform ideas into entrepreneurship opportunities.
- Limited investment in research leads to inventions with narrow potential. In the United States, universities are partnering

with the private sector to engage in research and development. This is needed in the entire region. Researchers within universities should have more flexibility in their work and challenge themselves and students to find solutions to real needs. Researchers sometimes are not aware of the state of the art.

- The Caribbean region in particular needs to aggressively invest in Research and Development and this should be pioneered by Universities. However, universities in the region need more financial support. Although, it is important that the Caribbean carve its own identity successful examples of the region can also be reviewed and adapted to not reinvent the wheel.
- The limited participation of students in the research process is a problem. There is a need to discuss ways to promote student involvement and internships in the research process and link this to entrepreneurship. Creating regional and local networks of entrepreneurial mentors and also the appropriate reward system for those mentors is critical.
- Trinidad and Tobago and Caribbean islands in general are 'too small to fail.' Mathematics curricula need to be improved as it is a foundation for all learning. Critical thinking needs to be integrated into the curricula.
- It is understood that learning is central to the deployment of the imagination process. It is essential to review the methodologies within the education process. Communication within collaborative learning is mandatory. Kids need to learn to communicate with each other and express their ideas in public.

2. The role of ICTs in business creation

- The Latin American and Caribbean (LAC) region does not as yet fully understand the importance of technology and internet access in facilitating business creation and development. Born-global companies are relatively new phenomena that are gaining overnight success. In fact, future large companies will be internet companies and our region needs to take advantage of this trend. While developed nations such as the USA or European countries actually use the broad

internet possibilities for business creation and expansion, the LAC focuses mainly on social media usage.

- The internet holds tremendous opportunities for people. We need to encourage people to make better use of the Internet. The region needs to move from being passive users (check email and social networks) to active users in which Internet is a tool that stimulates business growth and development.
- The availability of quality data needs to be improved and made more accessible throughout the region.

3. Challenges to business growth, innovation and entrepreneurship

- Regionally, the private sector is not dynamic, firms are not growing and they lack the capacity to innovate. As such, the region is not lacking firms but lacking firm growth. In addition, the region's mature firms are too stifled and these are the firms that need to invest in making themselves more dynamic in order to bring success to the region.
- Research has indicated that entrepreneurship in Latin America is distributed as it is in the United States. However, the issue in Latin America is that those with the potential to become entrepreneurs are not becoming them. Also, talented people with the potential to be employed by creative companies are not employed by them. Therefore a regional system needs to be put in place that will grow the entrepreneurial spirit and harness business talent.
- A lack of financing, proper infrastructure and a lack of public policies that encourage entrepreneurship are huge hindrances to the development process. Micro-financing is key to growing entrepreneurialism.
- Public policy needs to understand the difference between acceleration vs incubation. There is potential for growth in mature firms and existing companies should be an emphasis on policies encouraging acceleration of companies in addition to incubation. Society is becoming very risk-averse and current public policies encourage lower-risk projects. There are advantages in encouraging high-impact high-reward products, whether they can be high risk ventures or not.

- Governments need to expand their role by developing and more importantly implementing effective public policies – 'Productive Development Policies.' And not only effective public policies but also create an ecosystem/infrastructure for its correct implementation. The best way to do this is to utilize active examples of success and draw on support from other existing international experiences and examples. The US Government's role in the success of Silicon Valley is a good example to draw on as inspiration. We should not just copy what has worked there. Building innovation and entrepreneurship tailored to the assets, culture and vision of each country is fundamental.

- We need to inspire people. Entrepreneurs are dreamers, visionaries, and creative people. They are goal oriented, highly motivated and well connected. They are also workaholics, resourceful, pragmatic and persuasive. It is very important to develop communication skills in kids. We need to take a look of cases that have been successful in transforming spaces into innovation hubs. We should not re-invent the wheel.
- The region does not possess a historical entrepreneurial background. Therefore the mindset of the people also needs to change. We need to provide kids the right skills for the current and future challenges they will need to face in a world that changes every day at fast speed.
- Brain drain is a huge deterrent to progress. More needs to be done to discourage people from leaving and broaden them the possibilities in house to use their talent for the growth of their countries.

4. Creating an Eco-system of Innovation and Entrepreneurship

- An enabling environment needs to be created to move entrepreneurs out of the informal sector.
- A healthy ecosystem for innovation and entrepreneurship would require: Openness, access to capital, access to useful local and global networks, incubation, acceleration (growing early-stage companies with mentors, advisors, maybe also funding), access to specific tools and access to clear

exits. The difference between startups and Small and Medium-Sized Enterprises should be emphasized and they should not be treated as the same.

- It is worth understanding how creativity embraces innovation and how innovation embraces entrepreneurship.
- Cultural change is also needed. Failure should be supported rather than rebuked to encourage learning (global rate of failure of startups is 85%). Also, it is of great importance that entrepreneurs understand when they have to recognize that they have failed, and, even more significant, avoid taking a lot of time to do it. It is key to teach entrepreneurs where to stop.
- A potential idea is to attract entrepreneurial persons to the country so that they can share their experiences locally. This will improve the image of the entrepreneur among young people.
- It may be possible to build an eco-system (even though elements are lacking) with forethought and items to compliment what is lacking. If we think only from a national perspective we will take too long and lose the right direction. We need to think in a regional way, think of cooperation and development and ecosystem building in a regional way. We need to look for regional answers, have regional collaboration in moving forward and undertake regional approaches/perspectives.

5. Other issues

- The region needs to keep focus on the issue of sustainable development while in the process of encouraging innovation. The region needs to ensure that the innovation and entrepreneurship that is being encouraged is sustainable and that the products and businesses are bringing sustainable items to the table.
- The issue of Gender in the business environment is an important one that should not be neglected. Females in venture enterprises are underrepresented in the region. Research has indicated that start-ups by males are more readily funded than start-ups by females. Females need confidence in the entrepreneurial field and mentors to show them the way.

- It is important that the Task Force identify scenarios to target for impact and make changes towards innovation.

The following papers are the contributions presented and discussed
by the members of the Task Force on Innovation and Entrepreneurship (TFIE)

RIAC Task Force members on Innovation and Entrepreneurship (TFIE)

**Senator Dr. the Honourable Bhoendradatt
Tewarie**

Minister of Planning and Sustainable
Development, Trinidad and Tobago and RIAC
Chair Pro Tempore 2014



Michael Penfold

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Sherry Tross

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Dr. Marlene Attzs

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Dr. Roger Hosein

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Coordinator Trade & Economic Unit, U.W.I





SENATOR DR. THE HONOURABLE BHOENDRADATT TEWARIE



Message from the Chairman

Task Force on Innovation and Entrepreneurship

Government of the
Republic of Trinidad and Tobago



Ministry of Planning
& Sustainable Development

Creating a diversified and knowledge intensive economy is at the core of building international competitiveness, stimulating new areas of economic growth and moving up the value chain. Sustained, long-term economic growth relies on regional governments and experts providing the impetus for increasing investment, enhancing innovation levels and sustaining economic competitive advantage resulting in the creation of high-value jobs and a highly skilled workforce. In other words, innovation, high productivity levels and entrepreneurship are at the crux of national development.

Given that fundamental challenges, some of them structural, continue to constrain increased growth, productivity and sustainable development in the Latin America and the Caribbean (LAC) region, the RIAC registered the need for a Task Force, to analyse the issues affecting innovation and entrepreneurship in the region. The idea was that out of this would come proposals and implementable policy recommendations for the public sector as well as initiatives that could be private sector driven. A team of experts constituting the RIAC Task Force on Innovation and Entrepreneurship representing varying fields, and coming from different countries across the Western Hemisphere convened on May 10th 2014 in Trinidad and Tobago under my Chairmanship. There, we discussed a range of issues and we applied ourselves to crafting actionable solutions.

Educational transformation can facilitate the development of knowledge driven economies. Human and intellectual capital have now become the most sought after factors of production almost forcing our education systems to do more than teach, but instead inspire attitudes, nurture talent and create mind sets that can build entrepreneurial spirits and idea creators. The human imaginative capacity is an inexhaustible supply of creative energy and the source of all innovative possibilities. It is an indispensable asset critical for transitioning from factor-driven to innovation intensive growth.

Improving our current applications of new technology for national development rests with the introduction of policies and business strategies which facilitate innovation and entrepreneurship. Technology has produced platforms for business growth and development, evident by the proliferation of born global companies and micro-multinationals. This revolution has removed barriers geographically and has facilitated innovative business models and a new wave of entrepreneurs which we as a region must capitalise on.

Healthy ecosystems which foster innovation and entrepreneurship rely on cultural shifts to prosper. For instance, access to capital, knowledge, markets, local and international networks, infrastructure such as business incubators currently exists in silos, thus more regional collaboration is required to have these systems and processes dovetail into the productive base across borders. The LAC region is burdened by a risk averse culture which stifles creativity and innovative thinking which can lead to the birth of disruptive innovations.

The work of the Task Force on Innovation and Entrepreneurship has introduced thought-provoking ways of looking at reinventing the way we address our shortfalls throughout the region. I sincerely thank the members of this Task Force for participating in this initiative through their submissions which will undoubtedly inform and strengthen the mandate of the RIAC and by extension the Americas Competitiveness Forum. The support of the Organisation of American States must be commended for convening and participating in this Task Force. As a region, initiatives such as these are crucial. It is only through deeper regional integration and collaboration can we begin to compete on par with the more innovation-intensive regions of the world. And ideas do matter – we have done well to tap into them.

ROSIBEL OCHOA



Accelerating Innovation and Entrepreneurship through the Proof of Concept Process.

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Abstract

Proof of concept centers accelerate the commercialization of new ideas and help promote a culture of innovation and entrepreneurship at Universities. Many countries in Latin America are creating programmes to support innovation and entrepreneurship and are now looking at Universities as key players in the creation of high growth enterprises. This document presents recommendations for best practices for implementing proof of concept programmes in the region that can facilitate the incorporation of the academic world into the innovation and entrepreneurial system.

I. Introduction

In the process of product development and commercialisation all new ideas and projects need to be validated through the proof of concept (POC) process. A well-managed proof of concept process results in increased idea quality, higher ratio of ideas with commercial potential, increased ratio of commercially feasible projects, and greater engagement of researchers and technologists in the innovation process.

Universities and research laboratories are considered a key source of innovation and human talent. Today, there is a big wave around the world (Latin America being no exception) that is focused on catalyzing innovation, entrepreneurship and the creation of new enterprises. Increasingly more attention is being paid to the importance and involvement of universities and research institutes as the foundation for the creation of dynamic entrepreneurial ventures. Consequently, a number of countries in Latin America are creating programmes that support entrepreneurship and innovation focused on these institutions. However, the process of creating technology-based

companies from academic research is difficult. Very few discoveries are transferred to the private sector, which can be attributed to the unproven nature of the technology outside the laboratory, absence of an entrepreneurial team, or an unclear understanding of the market opportunity.

The more traditional model that relies on technology transfer offices as the entities solely responsible for identifying, screening, protecting, and “commercialising” technologies is no longer accepted. Corporations, investors and entrepreneurs want to reduce the risk associated with early stage technologies, and the execution of the proof of concept process mitigates that risk. Proof of concept centres not only accelerate the transfer of university technology but also assist in the creation of an entrepreneurial culture around the innovators. Proof of concept centres place the innovators at the heart of the early stage commercialisation process.

Since 2002, the von Liebig Entrepreneurism Center (the Center) at the University of California, San Diego (UCSD) has successfully implemented the proof of concept process platform at UCSD. To date, the Center has provided business mentorship, more than \$6 million in gap funding, and entrepreneurial education to more than 170 university teams, and 43 of them have launched their own startup companies. These companies have raised more than \$150 Million in private capital and created more than 200 jobs.

Over the past five years, the Center has worked with diverse groups in Latin America transferring its methodology and best practices to help academic and research organizations in the region develop their own strong innovation ecosystems. Staff and mentors from the Center have participated in the training, mentorship, and delivery of educational programmes to researchers and technology

transfer professionals from different countries in the region. For example, in the last two years, it has worked with CONNECT Bogota (www.connectbogota.org) in a programme funded by INNPULSA to strengthen the technology transfer capacity and commercialisation of technologies from universities in the Bogota region. The programme consisted of four consecutive and interrelated phases that included programme design, methodology transfer, training as well as one on one mentoring of university teams and technology transfer professionals. Using a competitive process, 8 technology teams were selected out of 47 applications from universities in the region to receive business mentoring through the POC process. Using a milestone approach, the teams conducted market research, developed and tested prototypes and designed appropriate strategies to transfer their technology to the Colombian private sector. Six of the eight teams have successfully completed their project plans. Three of them are in the process of transferring their technology into a spin-off or through a license.

In addition, the Center also delivered a 10 week customer development programme in which university teams received hands on training on customer development and lean startup methodology. Ten teams have already participated in this programme and the three most promising ones have been assigned an international mentor who will be working with them through the POC process.

Based on lessons learned from the Center's involvement in Latin America and its recent experience transferring its model to Colombia, what follows are recommendations for best practices for implementing proof of concept programmes in the region that can facilitate the incorporation of the academic world into the innovation and entrepreneurial system.

II. Elements of a Successful Proof of Concept Center

Proof of Concept Centres (POCCs) utilize an integrated approach to commercialisation that is comprised of entrepreneurial education, business mentorship, and gap funding. The impact and success of these programmes should not be measured only in terms of successful licensing or creation of a spin-off company, but on how they

are helping create an entrepreneurial culture at their respective institutions; that is, by the number of students, faculty, and researchers participating in the process.

It is important that POCCs have a broad scope that spans from the initial idea all the way to the incubation and funding stage. Without this scope built into programmes, promising projects and teams risk falling through the cracks due to neglect.

Therefore, when designing a Proof of Concept Centre, consider structuring a phased approach to the delivery of services to the stakeholders. Initiate the process by offering high level courses and workshops on the basics of technology commercialisation, innovation process, and customer development methodology; and make them available to a large number of participants. Each centre must develop a process for a sequential and gradual screening of the inventions depending on the stage of development to gauge individual teams' commitment and the potential impact in the market place. Resources should be allocated depending on the potential of the technology and quality of the team. Those teams with high potential ideas and that are passionate about pursuing commercialisation should receive more focused assistance through the assignment of an experienced mentor while the Center provides them with the financial resources needed to build functional prototypes or help protect their intellectual property.

In addition to the strong focus on education, proof of concept programmes must encompass the use of experienced mentors or advisors who are seasoned entrepreneurs that guide the teams throughout the technology validation and business model creation process. Functional prototypes together with relevant data help the teams demonstrate the viability of the technology and initiate the transition of the technology from research into development phase.

Proof of concept programmes must include close monitoring of teams' progress and assign accountability to team members. Those who demonstrate a strong commitment to executing programme activities should be recognized and rewarded.

III. Creating Novel Idea Flow and Engagement of the University Community

While education, mentorship, and gap funding are indeed essential elements in creating successful proof of concept programmes, they are not sufficient without strong institutional support.

If universities and research institutes are interested in supporting innovation and entrepreneurship, they must place them at the top of their strategic agenda. Resources needed for the implementation of entrepreneurial programmes can be allocated through the use of internal funds, government grants or philanthropic donations.

Funds should be made available to cover costs associated with patent filings, prototype development or student internships. Technology transfer offices should be staffed with personnel who are experienced in commercialisation and should be allotted the necessary resources and time to support the innovators through the process.

Institutions and governments should make it easy for faculty and researchers to interact with the private sector by establishing conflict of interest policies that facilitate consulting, startup formation and collaboration, and they should also recognize these interactions as part of the scope of their employment.

IV. Process for Early Identification of Commercialization Candidates

Although access to the POC services should be open to all faculty, researchers, and students interested in commercialisation, the selection of candidates into the programme should follow a screening process done by experts in the field that ensures that chosen technologies not only possess a level of novelty and potential market opportunity, but also that the teams are comprised of individuals who demonstrate commitment to the technology commercialisation process.

High potential projects and teams should be admitted to the programmes until they have achieved a readiness level such that the technologies can be licensed or become the foundation of a startup company within a specific timeframe (possibly one year) from entering the programme.

Regardless of admission decisions, all applicants of a successful POC center should ultimately gain a better insight into the entrepreneurial process.

V. Identifying and Training Mentors Skilled in Early Stage Commercialization

The role of the mentor in proof of concept programmes is essential. Ideally, mentors in the academic environment are seasoned executives and entrepreneurs who have experience in both technology commercialisation and in fields similar to those of the invention being commercialised. They are sometimes referred to as path masters, as they understand the culture of the university and that of the business world, so they can help guide the team through the transition towards commercialization. Time commitment for the mentor, especially in the early stages of the programme, can vary from a few hours to two full days a month. They provide a sounding board, advice, guidance, impartial feedback, access to the local ecosystem in place, and in some cases, they can be investors in the venture. Given that many of these programmes look for volunteer mentors, very few have the availability to provide the time commitment needed to support the process.

In Latin America, it has been particularly challenging at times to find mentors who fit this profile, especially if they are volunteers. One way to increase the access to qualified mentors is to provide some level of compensation for their work or leverage a network of international mentors that can assist and train local mentors in the process. For further guidance on mentor characteristics and how to develop mentor programmes for micro enterprises, Jack Savidge's guidebook serves as a comprehensive reference.

VI. Entrepreneurial Training and Team Building

One of the challenges in creating and launching a university spin-off is in forming the right entrepreneurial team that will be passionate in pursuing commercialisation of the technology. Such teams should have at least a technical contributor and an experienced entrepreneur or business executive. Graduate students and postdoctoral researchers are great candidates to serve as technical contributors since university faculty and research staff rarely leave their institution to join a company. Student participation

is also important in creating an innovation culture. In the early stages of the company, mentors may act as interim CEOs and MBA students from local universities also can be valuable resources for business development and market research.

Even if the chosen path for a team is not to create a spin-off, but rather to secure a licensing deal, it is important that there is a strong commitment of the inventor and his or her team to transfer the technology.

VII. Role of the Innovation Ecosystem in Supporting Innovation

Successful POCCs simply cannot thrive without a strong research infrastructure and an ecosystem of institutions and individuals committed to support entrepreneurial activities.

Such organizations include capital providers such as venture capitalists, angel investors, providers of professional and business services such as intellectual property attorneys, and a cadre of entrepreneurial talent and domain experts that can support early stage ventures, including helping them with access to international markets.

Graduates of the POC process are usually admitted into local incubators or accelerators where they have access to additional resources needed to continue the commercial development of their product.

VIII. Conclusion

POCCs are a great platform to promote innovation and entrepreneurship in Latin America. Success for the programmes relies on the access to great research, a good pool of mentors, strong institutional support and innovation ecosystem. As universities and regions build their own innovation infrastructure, organisations designing proof of concept centres need to create processes and metrics that are consistent with their culture and needs. They must be patient and flexible in what they deem a "success story," keeping in mind the challenges associated with early stage commercialisation.

Integration and participation of students in the process is critical to the creation of an innovation culture. Students can pursue their own ideas as well as become part of the teams that can successfully launch a spin-off.

CARDINAL WARDE



STEM Pathways to Economic Development for the Caribbean

Dr. Cardinal Warde, Professor of Electrical Engineering, MIT, Cambridge MA, USA; Interim Executive Director of the Caribbean Science Foundation, Bridgetown, Barbados

Dr. Dinah Sah, President of CADSTI-NE; Member of Governing Council of the Caribbean Science Foundation, Bridgetown, Barbados

Creative Imagination

In keeping with the theme, "The Human Imagination at Work: Driving Competitiveness, Powering Innovation", it is noted and agreed that imagination is the basis of creativity and inventiveness. According to the Oxford English Dictionary, the word imagination refers to, 'the faculty or action of forming new ideas, or images or concepts of external objects not present to the senses'.

Imagination, creativity and inventiveness are indeed the critical initial components of innovation that form the basis for change, but in themselves, these components are not sufficient. Novel concepts must be followed by reduction to practice – implementation of the concept with the resources and determination to address the inevitable hurdles that arise with new projects. Successful execution often requires leadership, planning and hard work, with dedicated team members who are passionate about and believe in the project. Teamwork is essential for the realization of complex, multidisciplinary projects, whether large or small. We need only look at colonies of ants or bees for confirmation of the value of teamwork. As we have all witnessed, when a great team works together in synergy under great leadership, novel and challenging concepts (that have resulted from imagination, creativity and inventiveness) can be implemented with astounding success, leading to tremendous progress for the human race.

Challenges Facing Caribbean Nations

Our concern here is applying the human imagination to affect change in Caribbean development. We would like to focus, in particular, on the challenges of developing a science and engineering based economic pillar

for the Caribbean. Often times this entails product and/or service development. To be successful, clearly innovation and implementation are not the end game. The product or service needs to find markets. If not enough people want to buy the product or service, the business producing the product or service fails.

It is in the implementation and marketing phases that Caribbean countries fail over and over again. So while the people of the region have consistently and correctly identified the problems facing the region, and can speak eloquently about what needs to be done to solve the problems, too often the ideas languish and no commitment is made to implement any of the myriad of suggested solutions. Lack of an adequate system to collect and parse these ideas is missing, and lack of leadership that would find creative ways to implement the best ideas is also scarce.

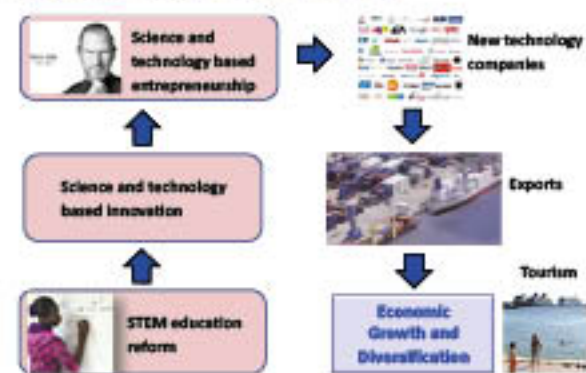
The Caribbean Region is culturally very risk averse. The fear of failure coupled with the discrimination that the society places on the failed, continues to be among the greatest deterrents to risk taking and, therefore, to entrepreneurship. Then, there is lack of vision within some government bureaucracies. Very few countries have Ministries of Science and Technology, and the same can be said for Ministries of Planning and Development. So we have to conclude that for the most part, insufficient focus is being placed on the task of developing a new economic pillar based on science and technology. In fact, there are many influential persons in the Region who are pessimistic about the possibility of developing such an economic pillar.

People in the Region frequently speak about what we should do, and not enough about how we should do it. The even greater problem is that the "we" is often not specified. When pressed, the

finger points at the government, but the government never seems to have the talent or the mechanisms in place to: (a) collect novel ideas, (b) distill out the best ones, and (c) assemble the teams and gather the resources to implement the best and most practical of the novel ideas. When “we” implies the private sector, there is even more ambiguity, as the private sector is by and large profit driven, and often not concerned with solving large societal problems that do not serve its interests directly or indirectly.

Another problem of the Caribbean Region is that a large fraction of the Region’s scientists and engineers do not reside in the Caribbean. Naturally then, the most viable solutions should involve harnessing the science, engineering, and entrepreneurial talent and expertise that resides in the Diaspora. For example, start-up companies in high tech and biotech flourish in the U.S. However, to get start-up companies of this type off the ground in the Caribbean, capital needs to be raised through networks, and know-how from those who have done it before needs to be tapped. Thus, the expertise in the Diaspora can be essential for these new ventures by facilitating connections, providing guidance, and helping to staff the new project or start-up with key leadership. Even if the Region is successful in creating new products and services, it has a slim global marketing track record, so here is another key area where the Diaspora can help to connect the Region’s entrepreneurs to new large-scale manufacturing expertise and help to open up new global markets for companies in the Region.

Approaches and Considerations



To pave the way for sustainable economic development, Caribbean countries must diversify

their economies. The figure on the left illustrates a proven pathway to the development of a science and engineering-based economic pillar that would complement the tourism pillar of most Caribbean countries, or the oil and natural gas pillar in the case of Trinidad and Tobago.

Human development, social development and economic development all go hand in hand. Questions that could be asked, in no specific order, are:

1. How can the collective wisdom in science, engineering, business, art, finance, social science, and history be combined to address the economic development problems of the Caribbean?
2. How can the Region engage the scientific Diaspora?
3. How do we go about mobilizing and motivating the people of the Region?
4. What are innovative ways to build investment capital in the Region?
5. What are innovative ways to create an army of technology entrepreneurs?
6. How can the Region get its governments to heed the call to action?
7. How can the Region build science and engineering competitiveness?
8. How can the Region implement STEM [Science, Technology, Engineering and Mathematics] education reform at the primary, secondary and tertiary levels?
9. How can we retrain our teachers in inquiry-based science instruction methods?
10. How can we get buy in for the development of a science and engineering-based economic pillar from the general public?

We will not attempt to answer all ten questions here. However, below we highlight two non-governmental organizations that are trying to tackle a few of the major challenges listed above. Importantly, these efforts illustrate what can be done, even with very limited resources, to help the Region develop an economic pillar based on science and engineering.

• *STEM Education Reform*

Imagination and innovation coupled with the implementation of a sound strategic plan are needed to develop STEM pathways for the economic development of the Caribbean. At a minimum, an adequate level of know-how in science and engineering must reside in the Region. Therein lies the need for education reform in the STEM disciplines, including the integration of entrepreneurship into curricula starting as early as age 8. We must create an army of knowledge workers. We are not advocating that everyone become a scientist or an entrepreneur, but science and technology popularization is necessary to educate the population at large so they can understand and support the new economic development plan. The “science is cool” factor also needs to be sold to children (e.g., more science and engineering programmes on TV, more science museums, and more math Olympiads and science fairs with winners celebrated more in the media).

In our schools, we must place the student at the center of the learning experience. A balance needs to be struck between theoretical and hands-on learning, as both are important. Cramming followed by regurgitation must be discouraged. Instead, there must be a strong focus on mastery of the fundamentals of science and engineering by the students. How else can we train students today for the jobs of tomorrow, many of which do not exist today? In fact, we want our students to be creating those jobs of tomorrow. Furthermore, to convince our young students of the value of a science-based education, we must expose them to the myriad of career options that are available with a STEM education, and to role models who have a STEM education and are changing the world.

STEM education reform must be multi-faceted and encompass learning both inside and outside the classroom. Syllabus updates and STEM teacher training are essential for incorporating and reinforcing basic STEM and entrepreneurial concepts and skills. STEM teacher training in inquiry-based teaching and learning methods is imperative. Resources for STEM education reform need not be expensive as the educational system can draw upon indigenous and everyday materials, and use examples from the home, workplace, school, farm and the community in its inquiry and project-based learning initiatives. Clever use should also be made of the World

Wide Web and on-line information and teaching modules, many of which are freely available. Using these electronic media, students can learn and review material at their own pace, with the teacher and/or parent clarifying concepts and answering specific questions.

A basic entrepreneurial education should complement the STEM education, and should cover basic finance, how to start a business, the various types of capital, intellectual property concepts, how to write proposals and business plans, market place competitiveness, ethics and negotiation skills. Communication skills (listening, written and oral) development must also be part of the basic entrepreneurial curriculum. At least one foreign language is necessary for today's entrepreneurs. Our education leaders should not be threatened by the proposed changes, but must instead embrace the changes.

At all levels, career guidance must be provided through the use of role models, both from the Region and the Diaspora. The breadth of technology-based career options, beyond traditional paths such as medicine, law and accounting, needs to be communicated to students from an early age, as well as to parents and teachers. Moreover, students should be encouraged at all levels to think more broadly about technology entrepreneurship careers, and to “ask not who can give me a job, but for whom can I create a job”.

Let us not forget that we must also provide an avenue for continuing education in business and entrepreneurship principles for those who have already left the school system and need help getting their businesses off the ground, or in making the transition from a prototype to a globally competitive product. Well-run public incubators can play a significant role in addressing this need.

- *Stimulation of Technology-based Entrepreneurship*

STEM education reform is also needed at the tertiary level where our universities should re-engineer themselves to play a more critical

role in stimulating technology-based innovation and entrepreneurship. Because the task may appear daunting, the Region's universities should put in place and leverage scientific advisory boards comprising business and scientific visionary leaders from the Diaspora and the Region to assist with strategic planning and implementation. More collaboration between the universities in the Region and universities and industries in the Diaspora would avoid a re-invention of the wheel and bring much needed expertise into the Region.

To accelerate the development of a STEM-based economic pillar, the Region also needs to urgently place more focus on the training of high-technology women and men engineers and scientists to rapidly fill the void. Except for very limited activity at universities in Jamaica and in Trinidad and Tobago, high-tech engineering (the big "E") is not taught, and moreover is hardly practiced in the Region. Perhaps for this reason, the language in the Region is more often about "science and technology" than "science and engineering". We want to make clear that we are not speaking of technicians who are trained to repair, copy, or install products and systems that were originally designed and built by engineers. High-technology engineers are superb physicists, chemists, biologists, computer scientists and mathematicians, who often work in R&D environments and combine these disciplines with art to design, model, simulate, develop and build innovative products and services for the betterment of mankind. They are the creators of our cell phones, pacemakers, photovoltaic solar cells, spacecraft, robots, software, microprocessors, and special-purpose materials, to mention a few. They are the group who start most of the technology-based companies in the developed world. They could do the same for the Caribbean if we would make it a priority to cultivate and highly train more of them.

Market and foreign exchange opportunities are being missed because we are not sufficiently exploiting the STEM talent in the Region, stimulating entrepreneurship, and grooming our students into the science and engineering professions. Here are three examples: the Region could begin to train electrical engineers who would develop new niche and innovative low-power circuit designs for cell phones and computers (to extend battery life between recharges) and market them to the big manufacturers of these products; our software engineers could be parsing, sorting

and preprocessing big-data for sale on the global markets; our biotechnologists could be developing more contract laboratories to provide services for biotech companies in North America and Europe. The latter is, perhaps, the fastest way to attract new biotech industries from overseas to set up shop in the Region.

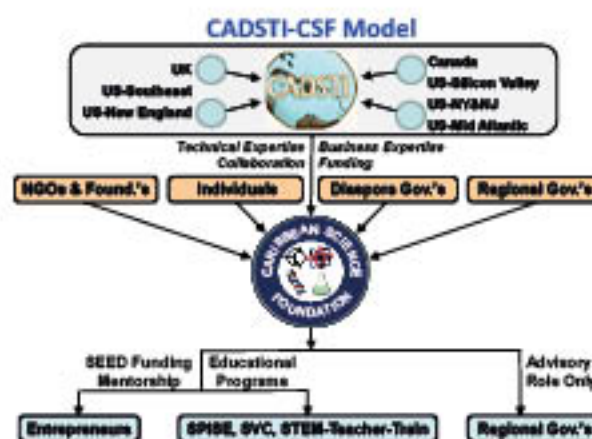
Sometimes it is one or two individuals within the university or a research laboratory (not necessarily the big companies) who come up with the next disruptive innovation (like Facebook invented by Mark Zuckerberg, his roommates and colleagues while at Harvard university, and Google started by Larry Page and Sergey Brin while students at Stanford University). Ironically, however, the first evidence of a search engine is credited to Alan Emtage of Barbados while he was a student at McGill University, but he never benefitted from his invention. Such inventions can also be hatched in our Caribbean universities if we can find ways to put an effective research ecosystem in place.

The point is that key research areas based on the needs of the Region and on the identification of technologies with low financial barriers to market entry should be prioritized through careful consideration of the probability of commercialization success. These technologies, products and services should be developed within new or existing research and development (R&D) centers of excellence in our universities or next to our university campuses. Note that both the "R" and the "D" must be present. The most competitive niche products and services emerging from these centers of excellence should be targeted for growth and development, and should be nurtured in well-run incubators.

The Emtage story above points to the fact that our students, professors and university technology transfer officers must be savvy enough to recognize the potential value of disruptive inventions, and act swiftly to seek appropriate intellectual property protection. We need technology transfer experts who can provide business, intellectual property, and commercialization advice and guidance. Such persons would have the skills to identify potentially interested companies and negotiate deals that would move university research into the private sector. The Diaspora can help with finding leaders with such experience.

Funding for the R&D centers of excellence and the incubators, and the seed capital needed by the emerging new ventures would have to be supplied jointly by the private sector, the government, NGOs (non-governmental organizations), the international community, and the Diaspora. Developing, facilitating and nurturing these relationships between all partners will be important to ensure the sustainability of the R&D ecosystem. Given the relatively level playing field in information and communications technology, if we can implement a strategic plan along the lines suggested here, it is indeed possible for the next "Google" to have its origins in the Caribbean, and such an event would help accelerate the journey toward the economic development of the Region!

Diaspora Engagement



The Diaspora wants to help with both the educational reform and the innovation and entrepreneurial initiatives. Because governments have been slow to lead for a variety of reasons, a set of Caribbean nationals in the Diaspora and the Region decided to act. In 2008, they formed the organization now called the Caribbean Diaspora for Science, Technology and Innovation (CADSTI) - <http://cadsti.org>. CADSTI established the Caribbean Science Foundation (CSF) in 2010 [<http://caribbeanscience.org>] as its implementation arm on the ground in the Region to assist with some of the challenges of the Region. As shown in the figure of the CADSTI-CSF model, CADSTI has active branches in the UK, New England, US Southeast and the US Mid-Atlantic States. Soon to be launched are branches in Toronto, Silicon Valley and the New-York-New Jersey area. The mission of CADSTI is to: (a) facilitate economic

and social development of the Caribbean region by mining and harnessing the diverse, dispersed and largely untapped talent of the Caribbean Diaspora in the areas of science and engineering, (b) connect with and catalog the key experts and resources within the Caribbean Diaspora, and (c) mobilize global financial and other resources in support of the mission and objectives of science and technology organizations of the Region, especially the CSF. Resources may include human capital, financial capital, technical and business knowhow, equipment, materials and services, advice and coaching, research partnerships and corporate partnerships.

Role of Government

TCADSTI and the CSF are grass-roots operations of the people, for the people and by the people. These two organizations are reaching globally in their collaborations to bring more visibility to the technology aspirations of the Caribbean. Their work is intended to be catalytic. The hope is that their risk-reduction efforts will embolden the governments to follow with larger and more effective STEM educational and entrepreneurship programmes, as collectively CADSTI and the CSF are too small to fully implement the large-scale societal changes needed. Therefore, while CADSTI and the CSF are doing all they can to ignite a STEM pathway to economic development, the government's role is critical.

The governments at the very least should help to create a friendly ecosystem for innovation and entrepreneurship. Roadblocks and antiquated laws that are impediments to business formation need to be removed, and incentives need to be put in place that would reward entrepreneurship and start-up business development. This includes corporate tax reform, immigration policies, rule of law and intellectual property protection, all of which need reexamination.

In addition to luring some of its scientists in the Diaspora back to the Region and welcoming them with open arms, Caribbean countries should be recruiting science and engineering talent from anywhere in the world. A bold innovative move would be to follow Chile and open up business plan competitions to anyone in the world, with the understanding that winners would have to locate their business in the Region. Furthermore, governments could assist more in helping our

universities to bring more high-profile science and engineering professors to the Region, and keeping them in the Region. The overall goal should be to assemble lots of smart people with great ideas in one place, create a friendly environment for entrepreneurship, and help cultivate much more access to capital at the same time. When all these essential elements are in place, miracles can occur, as was the case for Silicon Valley.

Summary

The strategic development of a new economic pillar based on science and engineering must include several key educational elements: (a) science popularization for the masses with the “science is cool” factor for children, (b) STEM education reform at all levels – primary, secondary, tertiary and continuing, (c) business and entrepreneurship education starting at about age 8, (d) the formation of more technology incubators within and outside the university, (e) the creation of R&D centers of excellence within the universities in key niche areas, and (f) the training of more high-technology engineers and scientists within our universities. In addition, more capital formation, public policy reform, access to foreign markets, removing cultural impediments, changing the mindset among the population, and controlling crime (a deterrent to foreign investment) will be necessary. Governments, the private sector, the international community and the Diaspora, will be key in financing, guiding and expanding these initiatives, and ultimately transforming the economies of the Caribbean.

MAYA TROTZ



"Human Imagination for a Sustainable Caribbean: Spaces for Creativity"

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"I want the smallest child or the untrained eye to reach an awareness of the beauty around them and to come to the realization of the miracle of nature in a simple rock, branch, pod and leaf." Roslyn Watson, "Roslyn: A Retrospective Exhibition," National Cultural Foundation, Barbados, December 2013.

Introduction

Like the artist who thinks that each child can recognize beauty in the natural world around them, I believe that every person can be creative and that given the right circumstances that creativity can lead to innovations that contribute to the sustainable development of our communities. According to David Kelley, founder of Stanford's School and Design and Innovation Consultancy firm IDEO, his firm helps people "rediscover their creative confidence—the natural ability to come up with new ideas and the courage to try them out" (Kelley and Kelley, 2012). Instead of the rediscovery of creative confidence for corporate entities, this paper focuses on the discovery of creative confidence of youth through formal and informal education pathways in the Caribbean Community (CARICOM). It argues for investment in spaces for creativity, especially outdoor spaces like the marine environment, and tools for creativity, including access to experts, information, and materials. The paper focuses on students in secondary school since it is the only time when there is a common curriculum in CARICOM countries, the Caribbean Examinations Council (CXC). It uses personal experience with the development and implementation of a secondary school education challenge for sustainability and Science Technology Engineering and Mathematics (STEM), the Sagicor Visionaries Challenge (SVC), to discuss this issue of spaces and tools for creativity and curricular reform needed to best use those spaces and tools. Finally, it offers

potential partnerships for transforming this education landscape.

Reality of Caribbean Secondary Schools

If you walk into any classroom in the Caribbean and ask the students if they are satisfied with their classroom and their school environment, most of them would say "No." In 2013 a private corporation, Sagicor, a non-governmental organization, Caribbean Science Foundation, a regional body, Caribbean Examinations Council, and Ministries of Education in twelve CARICOM countries, launched the Sagicor Visionaries Challenge (SVC). Students were asked to identify a challenge facing their school and/or community, propose a sustainable solution, and demonstrate how that solution used STEM. One hundred and seventy five teams entered, representing some nine hundred students from the participating countries.

Students proposed performance spaces, photography labs and even a solar powered multi media/gaming portals to visualize material covered in textbooks. The numbers of entries and results from this challenge indicate that students want cooler classrooms, healthier cafeteria food with food that they grow and process, better functioning washroom facilities with soap and toilet paper, adequate places to sit and eat lunch, updated laboratories, and improved computer, library, and sports facilities. They want cleaner environments with less air and noise pollution, less flooding, less mosquitoes, and less badly disposed of solid waste. As the Caribbean embraces STEM as a new focal point for development, it is critical that decision makers have a grounded sense of the realities the majority of students face in their daily school environment. In addition to this grounded sense of reality, decision makers

themselves must recognize the value and urgency in solving these challenges. The students quite creatively proposed solutions that can easily be implemented if only their voices were heard. The talk of entrepreneurship and investment in STEM sweeping across the Caribbean region could push decision makers to judge student work based on its massive corporate potential. Care must be taken to ensure that the work that deals with “the real and local” is not somehow undervalued due to misconceptions with what is cutting edge science and technology for global export.

Spaces & Tools for Creativity – the Solid Waste Challenge



Drain adjacent to a national museum in a CARICOM country on 9/1/14.

Solid waste management is a good theme to expand upon and one that students highlighted across the region. It directly links to the potential of informal spaces for Caribbean creativity, many of which currently collect unwanted waste. It also sheds light on the uniqueness of island contexts and why solutions could inform the world. Underfunded solid waste management departments, high levels of imported materials including many non-biodegradable products and packaging, too little waste for economically viable recycling and reuse processes in existence, are common reasons given for badly functioning solid waste management practices in islands (et al., 2014). Limited or competition for available land for landfills, the predominant management practice, coupled with the close proximity of people to landfills makes the challenges urgent. Some students were concerned with the trash on their campus and addressed their own habits that could fix that, others recognised the neighboring community that dumped refuse in the gully which

then bred rodents that infested the school, some wished to find beneficial uses for the coconut shells that clogged city drains, and all were aware of the abundance of plastic bottles and styrofoam containers that made their way into local waterways and beaches becoming pest havens and breeding grounds for mosquitoes, including those responsible for dengue and chikunguya. Highly publicized beach and community clean up campaigns, some even sponsored by foreign embassies, are common throughout the region, yet trash continues to return from land based activities. Enforced littering fines and financial incentives for recycling definitely contribute to reduced litter, but is there another pathway for the islands to stop this trend? The next section presents that marine environment where much trash eventually ends up and discusses a pathway to rediscover that marine environment as a space for, and with the tools needed for creativity. The underlying premise being that if carefully designed, this rediscovery will significantly add value to the resource and therefore motivate persons to protect them through upstream interventions, namely innovations in solid waste management.

For the most part, not many Caribbean students are accessing spaces such as beaches, parks and coral reefs. In many islands one cannot help but see the ocean/sea, yet there is no curricular requirement in their formal education that takes them to experience these spaces and grasp the possibilities that can be derived from and with the resources there. How can reef environments inspire architecture, material design, and food security? How can ocean waves inspire power generation, steel pan symphonies, and transportation services? How can mangrove forests inspire water reuse mechanisms, performance space, and climate change mitigation? These are the types of questions that Caribbean youth can and should ask and answer. When they start to contemplate these things, it should change the entire dynamic of the interaction between people and spaces in the Caribbean from one of disengagement to one of pride, protection, and sustainable development. Doing this properly requires investment in the spaces and in the tools that harness the experience of those spaces. With beach tourism an economic driver for decades, infrastructure like restroom facilities and lifeguard stations already exist on many beaches throughout the region. As do dive shops and local fishermen who access the sea's

resources. Basic infrastructural investment for this space is low compared to the investment needed for tools to harness the creativity inspired by that space. Tools include educational models, materials, and design/innovation labs located at the space, away from the space, and even virtually. There is currently no requirement in CXC curricula for a student to experience the marine environment, much less access a dive site or diving expertise. The CXC is currently developing a Green Engineering syllabus that includes the concept of biomimicry. Biomimicry, nature inspired solutions for human problems, is quickly evolving as the pathway towards more sustainable designs with training institutes and global design challenges (e.g. biomimicry.net) for all ages. Biomimicry is not just limited to engineering design, as it manifests in the arts as well and marketed as such. Unlike the student in a New York public school who lives far from the coral, the Caribbean student can watch a video and see the reef system in person, share its story, and learn about it from local communities that use it in diverse ways. Investment would be needed to train people and create materials that show how that underwater experience can be translated to other disciplines like music, architecture, medicine, mechanical engineering, materials science etc.. This biomimicry exercise can also be tailored to address solid waste management challenges. Does it inspire a student to create improved packaging designs or complete systems that eliminate waste generation? It is possible that the reef inspired solutions for solid waste management are the same as those derived from sitting in a classroom without ever having visited the reef, but suppose they are not? The opportunity to access natural spaces filled with beauty, science, culture, and history is critical to Caribbean development regardless of the answer to that question.

Partnerships to Support Spaces and Tools for Creativity

The SVC was open to any student in a Caribbean secondary school. Though there was discussion on the use of the student projects for formal evaluation in examination grade assignments this has not happened. The challenge remains an activity that is in addition to the in class requirements. If designed properly, the Green Engineering curriculum could integrate the SVC as a formal deliverable for evaluation. Some

unique partnerships with the SVC include the team mentors who are either local or virtual and who provide feedback on the student ideas. There is a surprisingly large Caribbean diaspora and people who like, visit, and/or work in the Caribbean who are more than willing to mentor students and contribute to the sustainable development of the Caribbean region. Many of them have expertise in the various areas discussed above that are linked to biomimicry. This model succeeds if the engagement is meaningful, transparent, and honest in its end goal. The ideal platform for engagement is yet to be developed as are the mechanisms to share mentor expertise and the progress of the mentoring experience. Frameworks like the CXC's Notesmaster online learning portal could potentially host these materials. Partnerships with national trusts, business owners, governmental and non-governmental agencies are needed to develop and maintain the outdoor spaces. Though written with a strong emphasis on STEM, these must be interdisciplinary and trans-disciplinary spaces that promote engagement with the cultural and art industries and business sectors. The Green Engineering course under development was just one example of a course that addresses biomimicry, but one can imagine others that are even more interdisciplinary and more appropriate for younger Caribbean students.

Partnerships are also needed to develop the design labs which could be at the school, the local university or polytechnic, the outdoor space, or an artist's studio to name a few. The Maker Movement (makerfaire.com) in the US reaches into libraries and community spaces where people gather to make stuff. From a Caribbean context, people need to be engaged at all levels to best decide where these design spaces should be and what they should look like. Because of all of the things that make islands unique, the "making" would be with purpose and guided by the goal of sustainable development so the purpose is simply not just to sell product for profit. The Arthur C. Clarke Center for Human Imagination at the University of California, San Diego, aims to help society become more effective at harnessing imagination by bringing together the inventive power of science and technology, with the critical analysis of the humanities, and the expressive insight of the arts. Can formal partnerships be established with centres like those as well as traditional spaces for creativity like museums of art and

science that allow students to see what others are doing? Appropriate persons in the Caribbean who can lead and benefit from those partnerships need to be supported and encouraged to do so.

There are also many local, regional, and global opportunities for young people to expand their educational exercise and creative idea into something that receives even more feedback and potential funding. Some examples include the IADB's Greenovators (www.iadb.org/greenovators) challenge, the Biomimicry Design Challenge (www.biomimicrydesignchallenge.com), the Caribbean Innovation Challenge (www.youthin-cic.net), etc.. Private sector partnerships are needed to support some of the initiatives to grow Caribbean creativity. Continuing on the solid waste theme and the rediscovery of outdoor beach/marine environments, one can imagine engagement with the shopping center conglomerates that influence very much what people purchase. The RBC Young Leaders and the Sagcor Visionaries Challenge are two regional challenges for secondary school students in the Caribbean. While a start in the right direction, more investment is definitely needed by companies who see value in changing the educational landscape of youth. This can be done either through direct support to the educational organizations like the CXC or Caribbean Science Foundation or through the corporate labeled challenges that align with today's marketing strategies.

Summary

"But we in the Caribbean need to remember that emancipation from the enduring obscurities of the past half-a-millennium depends primarily on the people of the Caribbean themselves. None but ourselves can indeed free our minds of that lingering self-doubt, that lack of self-confidence and that paralysis of will consequent on such afflictions."
Rex Nettleford, "Re-engineering Caribbean Cultural Enterprises/institutions: Agenda for the future," The William G. Demas Lecture, Tobago, May 11, 2004.

Twenty years after the Barbados Programme of Action for Sustainable Development of Small Island States (SIDS), the world assembled in September 2014 for the 3rd plenary on Sustainable Development in Samoa to focus on partnership building to support SIDS. Size, remoteness, limited resources, climate vulnerability, and small scale provide multiple opportunities for

the creation of communities that lead the world down a sustainable pathway. The Latin America and the Caribbean (LAC) grouping offers a ready made institutional framework for transforming sustainability innovations developed in the islands to continental populations. Sustainability innovations from the islands, however, must depend on the creativity of island populations, and rethinking of the role and use of space to do so in its own way contributes to more livable, likable, and healthy communities. It is through this lens of island sustainability, specifically those of CARICOM, that this paper focused. In the face of globalization CARICOM countries must value their human capital and invest in a quality education that develops Caribbean creativity and creativity spaces with Caribbean experiences, history, and socio-cultural contexts. It used the marine environment as an example of a creativity space to demonstrate opportunities for its rediscovery and reevaluation in the context of educational reform. Without access to places of beauty, both physically and mentally, one is not inclined to protect them or see value in them. For the Caribbean islands, however, it is these same spaces that provide unique opportunities for human imagination to soar. Based on my experience with the SVC, the partnerships established there attest to the power of the Caribbean community to innovate in non-traditional ways for STEM education and sustainability. Post Samoa requires more of these partnerships to strengthen the educational foundation upon which island communities are built.

GUILLERMO FERNÁNDEZ

Key Topics on Innovation and Entrepreneurship for the Americas

Guillermo Fernández de la Garza – CEO United States-Mexico Science Foundation (FUMEC)



Innovation and Creativity- Social Behavior

- Innovation is highly related to the mastering of business and technology practices.
- Creativity has to be linked with understanding: markets, processes human interactions, etc.
- Creativity alone is hardly an innovation asset.
- The Social Behavior needed is based on respect, appreciation, team work, sharing visions and building trust.

Role of Networks

- Innovation Networks are tools that succeed if there is a strong leadership that builds a clear understanding of common objectives and articulate the key players in effective programmes.
- Innovation Networks are local and require linkages with national and international networks to broaden their vision and the spectrum of allies and opportunities.

Developing Talent and Mentors

- In relation to Innovation and Entrepreneurship, talent has three perspectives: Scientific and Technical talent, Business talent, Government talent.
- Within the three of them, there is a need for talent development programs that have a common base: cognitive skills and team work – 21st Century Skills.
- Building high impact businesses is basically an “intellectual challenge” (George Kosmetsky).
- Scientific and Technical Talent: with emphasis on conceptual understanding and trans-disciplinary problem solving aligned with key technologies are important for the success of business.
- Mentors require in depth business experience combined with management of effective business development tools.

Connect Art, Creativity and Culture with the Innovation Value Chain

- Creativity, to shift and develop paradigms, to understand trends and in depth motivations of consumers, as well as to bring elements from different fields and cultures.

- In sectors like digital media, art and culture, creativity are essential for developing innovative products.
- In general art and culture are important for enhancing the human elements that are essential to build a strong innovation culture based on communication, understanding and broad perspectives of the opportunities and challenges for the company.

Influence of Economic and Business Culture in Competitiveness

- Very often the local business -technology ecosystems are not mature enough to provide the support that local companies require to compete globally and to compete locally with foreign companies in an open economy.
- Business culture that involves sustained leadership and close cooperation among the quadruple helix players is crucial to develop adequate local business -technology ecosystems and more competitive business.
- Economic culture to learn and grow from Direct Foreign Investment (DFI) is crucial for competitiveness. It is a culture that promotes DFI migration to higher value activities (engineering, R&D, etc.) and facilitate in depth interactions of DFI with the local businesses and organizations to make them more competitive.

Initiatives for Fostering Entrepreneurial Development

- Success breeds success. Ensure well thought out, carefully designed initiatives to accelerate the growth of existing high impact companies and make them the spearhead of larger programs.
- Ensure professional mentors have business experience to help potential high impact new businesses.
- Facilitate networking and sharing of experiences and opportunities with co-working and communication spaces.
- Outreach University and High School students with practical experiences of successful new ventures and with the business and technology tools needs for similar initiatives.

KEVIN FRANKLIN



Developing a “Smart Americas”

By Kevin Franklin, Executive Director, Institute for Computing in the Humanities, Arts and Social Science (I-CHASS), University of Illinois, Fernando A. Hernandez, Senior Research Fellow at I-CHASS, University of Illinois, and Simon J. Appleford, Assistant Professor of History, Creighton University, Nebraska

The production and consumption of knowledge drives competitiveness in the global economy. As a result, nations and geographic regions that desire to succeed in a new interdependent and rapidly changing world must become “Smart”. They need to collect, process, and analyze data to both develop knowledge and act with increasing efficiency to make decisions that will strengthen their government, business, and education sectors and improve the quality of life of their citizens. There are already a number of national data integration and analysis efforts underway— including the National Data Service, led by the University of Illinois National Center for Supercomputing Applications, and Europe’s EUDAT research data initiatives—that offer potential models for others to follow as they forge academic and industry partnerships (Harmon, 2014).

In 2009, the World Bank identified four cornerstones of Knowledge Based Economies (KBE). These were:

1. An economic and institutional regime that provides incentives for the efficient use of existing and new knowledge and the flourishing of entrepreneurship;
2. An educated and skilled population that can create, share, and use knowledge well;
3. An efficient innovation system of research centers, universities, think tanks, firms, consultants, and other organizations that can tap into the growing stock of global knowledge, assimilate and adapt it to local needs, and create new technology; and
4. Information and Communication Technologies (ICT) that can facilitate the effective communication, dissemination, and processing of information. [The World Bank, 2011; World Bank, 2009]

The report concluded by declaring that “Making effective use of knowledge in any country requires

developing appropriate policies, institutions, investments, and coordination across the four abovementioned functional areas” (Ibid.) These four cornerstones can guide the countries of the Americas to become a “Smart Region”.

There are strategic benefits for a nation to have access to both open access data repositories and open-source technologies. Indeed, it is clear that institutions of all types benefit from access to the free flow of information and knowledge. At the same time, however, provisions are needed to allow individuals and industries to recoup costs and profit from research and development activities that contribute to these open access capabilities. As a result, governments in the Americas should identify and implement regional open-source and intellectual proprietary policies that work in tandem with coordinated cross-border investment programmes for near-term, mid-term, and late-term business and nonprofit start-up ventures.

Geographic borders no longer restrict creative and innovative entrepreneurs as developments in Information and Communication Technologies (ICTs) allow them to launch regional or global enterprises from the start. Government policies and financial investment approaches need to be coordinated regionally to take advantage of this new reality. Countries within the Americas must work together to balance open access and proprietary concerns, while also increasing support for data sharing and funding for collaborative cyber-infrastructures such as the Latin American High Speed Network RedCLARA (RedCLARA, n.d.).

To implement this, policy, academic, and industry leaders in the Americas will need to coordinate across national borders to establish new goals, objectives, and programmes that prepare their citizens as traditional jobs are superseded by automation. A study of 702 current jobs in the US estimated 47 percent of these jobs are

expected to be automated within the next decade or two [Frey & Osborne, 2013]. Most at risk are workers in logistics, transportation, clerical and administrative support personnel, and production workers. They state, "Our findings thus imply that as technology races ahead, low-skill workers will reallocate to tasks that are non-susceptible to computerization – i.e., tasks requiring creative and social intelligence" (Ibid).

As a result, employers are increasingly seeking workers who have high levels of cognitive, critical thinking, and social skills. Additionally, this new knowledge workforce will need to "learn-how-to-learn" and become flexible and adaptable as technologies take hold that require new skills. Efforts already underway in this area include the Connected Learning Alliance and the Digital Media and Learning Competition, which is supported by the Humanities, Arts, Science and Technology Alliance and Collaboratory (HASTAC) and the MacArthur Foundation. These initiatives place the needs and experiences of learners at their center and leverage creativity and critical and innovative thinking skills within the context of these learners' virtual networks (HASTAC, n.d.; MacArthur Foundation, n.d.).

Recommendations for Creating a Smart America:

- Establish an Organization of American States (OAS) Task Force to develop a "Smart Region Plan" for the Americas. The Singapore 10 year Smart Nation Plan can be used as a reference document (IDA, n.d.; iN.SG, n.d.; Yu, 2014).
- Develop policies that strengthen collaboration across various sectors of the economy to create intelligent communities of interest by fostering institutions that are data-driven open, inclusive and diverse.
- Establish personalised learning systems that go beyond reliance on institutionalised education by:
 - a. Developing and training educators to have a strong understanding of technology; stimulating students to leverage learning networks, become more self-directed and use big data to enhance their knowledge and understanding,
 - b. Increasing the numbers of under-represented peoples in science, technology, engineering and math (STEM);

leveraging programmes that effectively support women and the economically disadvantaged, and

c. Blending the strengths of the liberal arts with STEM to prepare a workforce that can address grand challenges facing the region. (Hernandez, Franklin, Washburn, Craig, & Appleford, 2013).

- Strengthen regional e-science and cyber-infrastructures by:
 - a. Sharing advanced technology resources including high performance computing and high-speed networks to increase the capacity for using big data.
 - b. Making Information Communication Technologies available to all citizens.

In conclusion, nations in the Americas can no longer persist in looking inwards they must work together more effectively and become a "Smart Region". Developing cross border business and nonprofit startup funding programmes and sharing technologies including e-science, cyber-infrastructure and big data can enable nations to deliver greater prosperity, growth, transparency, justice, education and address other grand challenges that will improve the quality of life of their citizens and gain a competitive advantage for the Americas.

HORACIO MELO



The Five Pillars of Building an Innovation and Entrepreneurship Culture within the LAC Region

By Horacio Melo, Former Executive Director of Start-up Chile and Founder of Solarity Company

Within the Americas, a revolution is needed to dramatically elevate the human imagination and foster innovation, entrepreneurship & creativity. Together, these elements can systematically work together to not only improve the region's competitiveness but also improve social wellbeing and livelihood. However, to successfully harness these elements, a culture of innovation and entrepreneurship needs to be nurtured while embracing technological developments, the education system and capital availability.

This document focuses on the Five Pillars necessary to successfully build an innovation and entrepreneurship culture for the Latin American and Caribbean region.

It is important to understand that the ultimate goal is to improve people's lives and that, in order to do that, economic development and equality of opportunities are two key factors.

Fundamentals & Definitions

It is not possible to tackle opportunities if we do not understand the issue or what we want to achieve. One of the first steps in creating a culture is to define the role of creativity, innovation and entrepreneurship within the national framework. In the case of Chile, and principally because of Start-Up Chile, entrepreneurship is an important mechanism allowing equality of opportunities for those that want to start an organization.

On the other hand, a clear definition (and separation) between different types of entrepreneurs is essential to design and execute different but necessary public policies. **Small and Medium sized Enterprises and startups** are two completely different efforts that have very diverse needs and it is mandatory for governments to understand this and develop differentiated efforts for them.

Ecosystem

Even though they are difficult to build and maintain, healthy entrepreneurial/innovative ecosystems are mandatory for stimulating the human imagination and creativity and, as a consequence, access to opportunities, economic development and well-being. Healthy ecosystems should provide easy access to capital, useful networks, mentors, advisors, and successful stories. As such, Universities, as the main source of talent (but not the only one), early stage investors, big corporations and entrepreneurs together with policy makers are the key players shaping the health of the ecosystem.

When the objective is to build a new ecosystem, **having a critical mass of entrepreneurs is essential**. This is a model one hundred percent based on people and their talents. Large numbers of entrepreneurs would attract an increased number of investors which in turn creates a ripple effect through the economy. Increased investment creates business growth signaling the need for big corporations to form partnerships with or act as a venture capitalist for startups. Universities play an important role in that they provide useful tools to their students that eventually will become entrepreneurs.

Culture

Stimulating culture change can be even more difficult than building the right ecosystem. Creating culture change requires: **Mindset change** - Nations need people that think with no fear, people that think big enough to lead disruption and challenges that may seem impossible but can impact national development.

Supporting failure - If a culture does not support failure, the number of people starting high risk companies will be significantly lower than cultures

in which failure is a part of the success. Failure to be useful creates important learning for the entrepreneur and encourages cost minimization. As such, cultures need to embrace failure as a crucial part of the learning process if progress is to be achieved.

Basics

Considering the fact that the LAC region is a few steps behind in education quality, Internet access and the establishment of necessary government regulation, the solution and implementation of any effort that seeks to generate improved competitiveness becomes even more complicated.

Education today is not just a problem of access but also **quality** given increased rates of knowledge transfer through technological developments. Students are not adequately prepared to deal with the real world, a world where technology is a formidable driver of development. For example, entrepreneurship & startups demand high quality engineers and there will be a lack of engineers in the near future in our region because education centres are not focusing on this issue. Innovation needs more R&D, but R&D is useless if stays in the lab and innovative solutions never reach the market. Today, there is a dangerous disconnection between R&D labs and the private sector in the LAC region.

The **Internet** provides equality of opportunities for the region. Chile is the country with the biggest Internet penetration rate of approximately 55% while the US has a rate of almost 85%. This indicates that the LAC population remains isolated from the knowledge revolution and does not possess the opportunity to take advantage of the Internet as a mechanism for growth and development. Even worse, those with access to Internet in the region are using it for social networking activities rather than business development, knowledge creation or value added activities.

[De] Regulation is at the base in the pyramid of these elements but if it becomes a barrier for creativity and entrepreneurship, programmes designed to foster R&D, innovation and entrepreneurship become pointless. High levels of regulation obstruct the creation of disruptive solutions for old and inefficient industries and as a consequence maintain the status quo with no improvements to the quality of life and standard

of living. As such, it is fundamental to allow new technologies/solutions/businesses to solve basic socio-economic problems in an easier and cost effective manner.

Coordinate Efforts

The LAC region provides an abundance of rich resources including skilled people with a lot of potential. More and more countries in the region are creating programmes to embrace cultural shifts, support the creation of new ventures and foster innovation & entrepreneurship. However, a coordinated effort is needed to merge individual programmes into one collaborative plan for the whole region.

The VIII ACF and Annual meeting of the RIAC provide the perfect opportunity to initiate a feasible plan to coordinate these different efforts, find complementary advantages and share best practices across the hemisphere. There are different sets of plans and programmes within each country that can be integrated to work complementarily to achieve regional goals. This will allow countries to take advantage of their strengths while overcoming their weaknesses.

The Americas Competitiveness Exchange (ACE) on Innovation and Entrepreneurship

First ACE, The United States of America



The First Americas Competitiveness Exchange on Innovation and Entrepreneurship (ACE) was a high-level visit and cooperative exchange organized by the U.S. Government and the OAS through the Inter-American Competitiveness Network (RIAC). It was held from March 31 to April 4, 2014 in urban and rural American cities such

as Atlanta, Greenville, Conover, Kannapolis and Charlotte. This event represented the first activity under the RIAC's Work Plan for 2014 to deepen the exchange of the more than 100 successful experiences that countries have shared through the network.

The ACE consisted of visits to centres of advanced technology and innovation, as successful examples of investments and public-private partnerships, including research and development centres in the medical, agro industrial, manufacturing and automotive industries in the States of Georgia, South Carolina and North Carolina. Several of the projects visited had been previously presented by the United States as part of the experiences in the Signs of Competitiveness in the Americas Report of 2012 and 2013.



Learning about the automotive industry at Clemson University International Center for Automotive Research in Greenville, South Carolina.

Over 50 government officials, chief executives, entrepreneurs and leaders of universities from 20 countries in the Americas had the opportunity to see the results of economic development initiatives and meet high level authorities, leaders of private sector associations, public and private universities with research and innovation centers, looking to explore and expand the links between our economies and key stakeholders. The participants came from Argentina, Bahamas, Barbados, Belize, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Peru, Trinidad and Tobago, and the United States. All of these leaders were able to promote high-value regional development, and built on mutually beneficial cooperation opportunities.



The Exchange was made possible thanks to the RIAC Chair Pro Tempore 2014, Senator Dr. the Honourable Bhoendradatt Tewarie, Minister of Planning and Sustainable Development of Trinidad and Tobago; the United States Government through the Department of Commerce's International Trade Administration (ITA) and Economic Development Administration (EDA) and the U.S. Department of State; with the assistance of the OAS Executive Secretariat for Integral Development (SEDI). Financial support for this activity was provided by the Government of the United States and the Government of Canada through its Department of Foreign Affairs, Trade and Development (DFATD).



The final survey of the participants indicates that 95 percent of the respondents expressed that the Exchange fulfilled their expectations, and close to 80% considered that the activity exceeded those expectations. The multinational composition of the programme and diversity of participants was regarded as favourable to promote collaborations. Participants praised the high quality of the presentations and the balance-diversity of cities and programmes presented. 95 percent of participants shared their interest in joining future ACE programmes and suggested as possible locations including sites in the United States, Argentina, Brazil, Canada, Chile, Colombia, Dominican Republic, Ecuador, Mexico, Panama, Uruguay and South Korea. The most commonly suggested focus areas suggested for future exchanges included Agro-Industry, Manufacturing, IT, electronics, innovation services, among others.

Over 50 participants learned from innovation hubs in the United States at the First Americas Competitiveness Exchange on Innovation and Entrepreneurship



Collaboration Opportunities Developed through the ACE:

First-hand collaboration between several international stakeholders from the three sectors (government-academia--business) were discussed throughout the week. Follow up contact and cooperative action has been undertaken by several participants and institutions. The following testimonials offer a glimpse of the possibilities that programmes such as the ACE can provide to RIAC members.

COLLABORATION OPPORTUNITIES THAT PARTICIPANTS WERE ABLE TO DEVELOP THROUGH THE EXCHANGE:

First hand collaboration between the three sectors, academia-public-private sectors with many meetings in which they could get to know the players in other countries.

Testimonials

Name: Claudine Tracey
Title: General Manager of Strategic Services at the Development Bank of Jamaica



This activity has been tremendously useful. It has shown how each city, how each town has its own unique approach to building its business people, using innovation, using entrepreneurship to promote sustainable economic growth for each area. So it has been extremely useful in terms of grabbing lessons that we can implement in Jamaica.

I see possible links for collaboration with other countries. I see the potential for collaboration for our small businesses and a widening of opportunities for incubation and product testing. These opportunities can ultimately promote and facilitate greater trade between participating countries. I also see collaboration at the governmental level for further interaction and further sharing of knowledge and best practices.

Name: Ana Laffie Licona
Title: Vice Principal - Unitec, Honduras



The exchange has been widely useful, especially in my industry - private higher education. In our UNITEC campus in San Pedro Sula we are beginning to develop a "smart city" concept, with technology and business parks revolving around the university. Therefore, understanding the integration of academia and industry through practical examples after our visits is very useful and productive, providing new ideas and helping us assess our progress to get to the next phase.

I see concrete opportunities for subsequent collaborative actions. For me, it was especially useful to make connections with members from other universities in order to promote our university's international programmes.

Name: Dr. Rikhi Permanand

Title: Executive Director of the Economic Development Board and Council for Competitiveness and Innovation from Trinidad and Tobago



This Exchange has been very useful as we got an opportunity to understand how large cities and rural areas have been able to transform their economies and how we can use and develop innovation to create sustainable economic development. The importance of STEM – Science, Technology, Engineering and Math - as part of the education curriculum from kindergarten to tertiary education, the transfer of technology from universities to the private sector and the importance of developing entrepreneurs through incubators and business accelerators have clearly been demonstrated as pathways for successful economic growth.

I leave the Exchange with a commitment to collaborate with my counterparts who participated in this programme as well as those who were kind enough to give of their time to showcase their initiatives in Atlanta and North and South Carolina. Specifically, I want to understand the ATDC 'Start Up Gauntlet' boot camp for start-up entrepreneurs for application in Trinidad & Tobago; to obtain the survey instrument developed for the Manufacturing Extension Programme and apply to manufacturers in Trinidad & Tobago and to review the Cabarrus PPP Economic Development model in the context of the EDB in Trinidad & Tobago.

This exchange comes at a timely moment as Trinidad & Tobago prepares to host the VIII Americas Competitiveness Forum, which will take place from October 8 to 10, 2014 in Port-of-Spain under the theme "Human Imagination at Work – Driving Competitiveness, Powering Innovation". What we have been show demonstrates that the world is changing rapidly and to stay ahead we need to innovate through collaboration between academia, private sector and public sector.

Name: Matt Erskine

Title: Deputy Assistant Secretary of Commerce for Economic Development From The United States of America



This exchange has been tremendous in terms of sharing best practices in innovation in economic development with our western hemisphere partners. We were proud to showcase the amazing work that's being done in the United States to spur innovation and create the jobs of the future. I thank our partners in Atlanta, Greenville, Conover, Charlotte, and Kannapolis for inviting us to see their projects and for demonstrating how important wide, regional collaboration was to ensuring success.

The Americas Competitiveness Exchange (ACE) on Innovation and Entrepreneurship

Second ACE, Mexico



The National Entrepreneurship Institute (INADEM), the Ministries of Economy (SE) and Foreign Affairs (SRE) of Mexico, in collaboration with the U.S. Department of Commerce, U.S. Department of State, and the OAS Executive Secretariat for Integral Development (SEDI) as the RIAC Technical Secretariat, with financial

support by the Government of Canada through its Department of Foreign Affairs, Trade and Development (DFATD), held the "The Second Edition of the Americas Competitiveness Exchange on Innovation and Entrepreneurship (ACE)", a high-level visit and cooperative exchange that took place from August 11-15, 2014, in Mexico.

The Second Americas Competitiveness Exchange, offered participants with the opportunity to interact with several key stakeholders shaping the new entrepreneurial ecosystem in Mexico. The agenda included visits to research and development centres, companies, universities, in the agro-industrial, IT, and financial industries through Mexico City, Aguascalientes and Guadalajara. The week long schedule showcased innovation initiatives promoted by the private and public sectors, allowed for exchanges to expand

international networks and to foster bilateral and multilateral collaboration to explore mutually beneficial learning and business opportunities.

The Second ACE started in Mexico City with the opening ceremony of the National Entrepreneurship Week, attendance to the Ibero-American forum on high-impact entrepreneurship, and site visits to advanced technology centres, innovation hubs, startup and incubation programmes, most of them public-private partnerships. Participants learned about several efforts aimed at supporting small and medium-sized enterprises, with access to capital and incentive programmes, to open, modernize and increase the productivity of their businesses. This visits provided information about financial literacy, digital innovation, networking and strategic competitiveness, among others.

The agenda also included presentations on the Mexico-United States Entrepreneurship and Innovation Council (MUSEIC) and the United States-Mexico High Level Economic Dialogue (HLED), a set of bilateral mechanisms to promote competitiveness and connectivity, foster economic growth and innovation, and build a partnership for global leadership by strengthening the North American high-impact entrepreneurship ecosystem.



The programme in **Aguascalientes** was hosted by the Centre of Competitiveness and Innovation of the State of Aguascalientes, a state agency tasked with planning, implementing, and overseeing policies and action in the fields of competitiveness and innovation. Its goal is to promote entrepreneurship, development of enterprises, investment, productivity and employment in the State of Aguascalientes.

The Second ACE visited Infotec, a public research and technology development centre of the National Council on Science and Technology (CONACYT) with special focus on ICTs implementation and data base with TIER III certification. The Development Centre of the Automotive Industry in Mexico (CeDIAM), located in the Monterrey Institute of Technology and Higher Education (ITESM), presented innovative initiatives and improvements in the value chain of the automotive industry, in order to raise the company's competitiveness through suppliers' development and logistics optimisation. The Technological University of Aguascalientes and its Product Lifecycle Management (PLM) Laboratory, shared its experience dealing with the adoption of 3D and PLM approach, considering eligible tools to access the 3D-EXPERIENCE. A visit to a local company, La Huerta, informed about agribusiness, focused on legumes cultivation, processing and freezing. La Huerta also offered information about its bio-plague control system developed using beneficial insects that naturally combat plague. In CIATEQ, a Research Centre, host teams presented examples of Mexican high-tech manufacturing, advanced manufacturing materials analysis, product development, processes and services with high technological development and innovation.

In **Guadalajara**, Intel, opened its largest research and development centre in Latin America and welcomed ACE visitors for a tour of the facilities. The advanced research centre, Cinvestav, shared experiences and close collaboration with local industry on electronics, telecom and control systems. Ooyala Development Centre, a fast growing U.S. Internet Company, discussed its business development in Mexico based on finding local talent to grow its presence in the Americas.

Agave Lab, a Start-up accelerator for internet companies, offered its unique approach to interact with the entrepreneur community in Guadalajara.

Some other visits in Guadalajara included in the schedule feature a wide range of facilities, including working spaces for start-ups such as MIND, the Software Centre, Continental Corporation, University Technology Park at ITESO, and the Chapala Media Park. In each case host organizations offered an overview of the capacities and best practices of the innovation and entrepreneurial ecosystem of the region.



The most commonly suggested topics to include in future events. (word sizing based on frequency of responses)

The programme had 40 participants from Brazil, Canada, Colombia, Dominican Republic, Mexico, Peru, USA, Israel, Russia, and international organizations such as the Development Bank of Latin America (CAF) and the Organization of American States (OAS). The profile of participants include practitioners, entrepreneurs and policy makers in the Americas who shared experiences in search of business and collaboration opportunities. All stakeholders had the opportunity to meet high level authorities, leaders of private sector associations, public and private universities with research and innovation.

Some of the results from a survey applied to the participants at the end of the ACE, showed that 100% of the respondents expressed that the Exchange fulfilled their goals and expectations, whereas 90% thought the activity exceeded their expectations. In addition, 100% of the respondents agreed that they would consider participating in a similar programme in the future. Among some of the countries/regions where most respondents would like to visit in an Exchange event are Canada, Central America, Chile, Colombia, Peru, and United States.



Visits and experiences that have been the most helpful to learn about. (word sizing based on frequency of responses)



Community of Practice (CoP)

VIII AMERICAS
COMPETITIVENESS
FORUM 2014
TRINIDAD AND TOBAGO



THE HUMAN
IMAGINATION
AT WORK
DRIVING COMPETITIVENESS,
POWERING INNOVATION



Organization of
American States

The RIAC-ACF COMMUNITY OF PRACTICE: A SPACE TO CONNECT, SHARE AND EXCHANGE WITH OTHERS

A Community of Practice (CoP)

Knowledge is a mixture of experience, values, information, and know-how that can all help us to make our actions more efficient and effective. A Community of Practice (CoP) is a group of people with common academic and professional backgrounds that get together to share ideas, find solutions, innovate and join efforts towards the continuous development of knowledge on a specific topic. CoPs are learning partnerships and are emerging in social science as useful tools to help people use the experiences of others as a learning resource.

The RIAC-ACF Community of Practice

As the sharing of knowledge and ideas is one of the key objectives of the ACF and RIAC, the Government of Trinidad and Tobago decided, in partnership with the Compete Caribbean Programme and RIAC, to establish a virtual RIAC-ACF Community of Practice, hosted at www.idb.org/riac-act.

In the lead up towards the VIII Americas Competitiveness Forum (held on October 8-10, 2014, in Port of Spain, Trinidad and Tobago), the Community focused on deepening the exchange of knowledge on the main theme of the 2014 ACF: "The Human Imagination at Work: Driving Competitiveness, Powering Innovation." This exchange took place through a series of dialogues centred on innovation, creativity and entrepreneurship.

To create the CoP, Trinidad and Tobago, in its capacity as host of the VIII ACF and 2014 Chair Pro Tempore of RIAC, partnered with Compete Caribbean, a private sector development program that is jointly funded by the Inter-American Development Bank (IDB), the United Kingdom Department for International Development (DFID) and the Department of Foreign Affairs, Trade, and Development of Canada (DFATD). Compete's Projects in the OECS countries are implemented in partnership with the Caribbean Development Bank. The Organization of American States (OAS), in its capacity as Technical Secretariat of the RIAC, provides support to the efforts of the CoP and the webinars.

Results to date:

- 14, 000 unique site visits
- 300 active members, including young entrepreneurs, students, academics, government officials, and members of investment promotion agencies from the LAC region.
- Hosted 2 formal e-Discussions and 2 webinars
- Developed Event Workspaces which act as repositories of Institutional knowledge for various past RIAC events.
- Created Several features available for members, including Event updates, announcements, document library, discussion spaces, coordination of webinars and event workspaces.

As a fledgling online collaborative space, the RIAC-ACF CoP has significant room for growth and as yet untapped potential. In 2015, the CoP can continue helping to bring key new players into the ACF dialogue while supporting ongoing collaboration and exchange among regional members ahead of the 2015 Forum in Guatemala. Maximizing its full potential, the CoP can serve as the main repository of knowledge for the RIAC and an essential platform for the promotion of direct interaction among RIAC members.

The Community of Practice

Aims & Audience

The CoP was conceived as an online space for knowledge sharing and information dissemination in preparation for the VIII Americas Competitiveness Forum. The community has focused on topics such as innovation, creativity and entrepreneurship with the objectives of:

- Deepening the exchange of knowledge prior to the Forum
- Providing input into the panel discussions of the VIII ACF
- Fostering collaborative experiences among the wider innovation and competitiveness community in the Americas

Activities & Knowledge Products

In 2014 the Community hosted a number of exchanges. The rich dialogue and lessons arising from these activities are captured in the Knowledge Products listed below. For full details, visit the CoP at www.iadb.org/nac-act

300 people

including young entrepreneurs, students, academics, government officials, and members of investment promotion agencies from the wider LAC region.

14,000 page views



Webinar Summary
The Human Imagination, Innovation and Competitiveness.

March 11, 2014

Lead Presentation by Senator the Honourable Dr. Bhoendradatt Tewanie, Minister of Planning and Sustainable Development of Trinidad & Tobago and 2014 RIAC Chair Pro Tempore.

Moderated by Kieron Swift, Business Unit Manager, Trinidad & Tobago Council for Competitiveness.

Key Outputs: Insights on channeling the distinct cultural experiences of Latin America and the Caribbean into competitive economic activities, as well as ideas on collaboration among countries to address asymmetries of resources and capacity to develop thriving innovation ecosystems.



Webinar Summary
Productive Development Policies in Latin America and the Caribbean: Lessons from Suriname and The Bahamas.

October 2, 2014

Lead Presentation by Daniel Artana, Chief Economist at the Foundation for Latin American Economic Research (FIEL).

Moderated by Cherran O'Brien, Country Economist, Inter-American Development Bank (IDB) Country Office in the Bahamas.

Key Outputs: An overview of Productive Development Policies, their deployment and performance in Latin America and the Caribbean. Lessons learned from the application of Productive Development Policies were identified from case studies on Suriname and The Bahamas.



e-Discussion Brief
The Human Imagination, Innovation and Competitiveness in the Caribbean: Small State Challenges and Opportunities

July 15 - August 3, 2014

Moderated by Keith Nurse, Executive Director of UWI Consulting Inc. and WTO Chair at the University of the West Indies (UWI).

Key Outputs: Proposed indicators to measure small state innovation and competitiveness, as well as a series of policies, business support mechanisms, and institutional arrangements to drive innovation and competitiveness in the Caribbean. These include augmented support for product and brand development, as well as policies to ensure SME support institutions are open to innovation.



e-Discussion Brief
Policy Options for Latin America and the Caribbean: Engaging Diasporic Entrepreneurs and Investors for Innovation and Growth

August 26 - September 14, 2014

Moderated by Claudia Stevenson, Lead Specialist at the Division of Innovation and Competitiveness of the Inter-American Development Bank (IDB).

Key Outputs: Proposed initiatives, such as (1) the creation of Observatories to map the diaspora community and gauge their interest in engaging with their origin country; (2) the creation of virtual communities to engage with and connect Diaspora entrepreneurs/investors and share information; (3) one-stop-shop support services for diasporic business activities, pooling resources regionally/sub-regionally.

The RIAC-ACF Community of Practice at a glance

AT A GLANCE: This community serves as an online space for collaboration and discussion on competitiveness and Innovation. Check out our features:

The screenshot shows the RIAC-ACF website interface with several callout boxes highlighting key features:

- Bar Menu:** A navigation bar at the top with links for Home, About Us, News, Events, Library, and Contact Us.
- Workspaces:** A search bar labeled "Can Facilitator" with a "Search" button.
- Highlights:** A large banner for "The 2014 VII Americas Competitiveness Forum" with a map of the Americas.
- Discussion:** A section titled "Join the Conversation" with a list of discussion topics and a "Filter" button.
- Latest resources:** A section with two columns: "Latest resources" (listing documents like "Finding New Talent") and "Latest Events" (listing events like "Virtual Discussion: The Human Imagination").
- Support contact:** A "More info" section with contact details for the RIAC-ACF community.
- Twitter corner:** A "Tweets" section showing recent tweets from the community.

www.iadb.org/riac-acf

Working Group of Experts Meeting on Subnational Competitiveness (GTECS)



On July 29 to 31, 2014, the Group of Experts on Subnational Competitiveness (GTECS) of the Inter-American Competitiveness Network (RIAC) met at the Catholic University of Uruguay (Universidad Católica del Uruguay), in Montevideo, Uruguay, to exchange experiences on innovation, entrepreneurship and competitiveness agendas for cities, states and provinces of the Americas. The Meeting was organized by the Institute for Competitiveness of the Catholic University of Uruguay with the support of the Ministry of Industry, Energy and Mining (MIEM) of Uruguay and in collaboration with the Organization of American States (OAS), the Chair Pro Tempore 2014 Trinidad and Tobago, with the financial support of the Government of Canada, through its Department of Foreign Affairs, Trade and Development (DFATD). In total, 43 participants from 13 countries (Argentina, Brazil, Basque Country-Spain, Chile, Colombia, El Salvador,

Guatemala, Mexico, Panama, Peru, Trinidad and Tobago, United States and Uruguay) as well as 4 RIAC international institutions (CAF, ECLAC, IICA and OAS) attended the meeting.

The Group of Experts (GTECS) was created during the Annual Meeting of the RIAC of 2012, which took place during the VII Americas Competitiveness Forum in Cali, Colombia. Since its creation, the objective of the Group has been to promote subnational competitiveness throughout the Hemisphere by sharing successful local practices; exchanging knowledge and ideas on models and methodologies available for the measurement of competitiveness at a micro-level and promoting competitiveness and innovation agendas to help the economic development of the cities, provinces, states and regions.

This year's meeting was the second official encounter of the Group of Experts (GTECS). The thematic focus of the meeting included:

- Innovation & Subnational Competitiveness;
- Competitiveness in Cities;
- Indicators & Competitiveness Indices;
- Clusters Case Studies: Impact on Regional Competitiveness;
- Institutional Competitiveness Frameworks: National and/or Regional Councils;

In total, participants shared twenty-two presentations. The main conclusions and recommendations of the meeting are as follows:

1. In many countries of Latin America and the Caribbean, there is no national Agenda on subnational competitiveness. There is a need for more coordination between the national and subnational authorities to raise awareness of the importance of subnational competitiveness for economic development. Authorities should also adopt public policies that can support subnational competitiveness according to local values, legal framework and available resources. Linking competitiveness policies with entrepreneurship development is also critical.
2. In order for the LAC region to achieve economic development, innovation has to be targeted as a priority. Innovation is a central component that has the power to help countries diversify their economies, which in turn, will help them to integrate and compete on the global market. GTECS participants recommended the continuation in 2015 of the RIAC Exchange on Innovation and Entrepreneurship (ACE) based on the positive results of the ACE in the United States and Mexico in 2014.
3. It is necessary for businesses of the LAC Region to integrate more technologies into the workplace. Technologies, such as information and communication technologies (ICT), when implemented in traditional processes can increase efficiency and productivity of enterprises while lowering costs. However, currently 51% of Latin American businesses rank between a medium to low technological intensity and 45% of all exports from Latin America to the rest of the world still consist of primary resources.
4. 4) Countries must invest a higher percentage of their GDP in Research and Development (R&D). With the exception of Brazil – who leads the charts in the LAC region with 1,16% of its GDP invested in R&D – all countries of the LAC Region invest less than 1% of their GDP in R&D. Advanced economies in the world, on the other hand, invest over 3,0% of their GDP in R&D.
5. Limited access to quality education is another major obstacle that impedes the economic development of the LAC Region and the quality of life of its citizens. It has been demonstrated that people in the right environment of knowledge and the right resources can leverage economy for global competitiveness. Therefore, strengthening capacity and capabilities in the region through better curriculums and University programs should be made a priority by local authorities.
6. To spark the economic development of cities, provinces and regions, authorities need to create better conditions for entrepreneurs. Tax Free Districts, business incubators and more public-private partnerships are a few solutions proposed by the Group of Experts.
7. Competitiveness Indices and indicators are still relevant for establishing diagnostics and comparing economies of countries with one another. However, more efforts should be put towards developing indicators that address competitiveness at a subnational level. Furthermore, more research should address how to translate indicators into efficient public policies. For future GTECS meetings it is desirable to divide the time between sharing experiences and hands-on (simultaneous) workshops on specific sectors, issues or aimed at developing a specific product, report or outcome among several countries and partner institutions.
8. Clusters are important but their efficiency can be multiplied by linking them to create networks of Clusters. Those networks can then serve to identify common problems that clusters may face and that can slow economic growth (for example, the congestion in one city's port). They can also be useful to exchange successful practices and lessons learnt by local businesses and create a directory of experts and clusters practitioners that can provide guidance for MSMEs. Future

GTECS meetings should consider inviting secretaries of economic development from several countries with the support of RIAC contact points to share practices and discuss business, research and collaboration opportunities on specific clusters or economic sectors.

9. A more consistent and open dialogue between the public and the private sector needs to take place to identify the needs of the private sector and support the growth of local businesses. MSMEs require the most attention. Promoting competitiveness inside a country (for example, in increasing sales in other provinces) is as important if not more important than promoting competitiveness outside a country. In future GTECS meetings it is recommended that leading private sector entrepreneurs and/or chambers of commerce are invited to present their views and recommendations.
10. Some mechanisms should be put in place in order to evaluate public policies that support competitiveness. For example, how do we know that one country's policy is the best out there? The RIAC should ensure that they support and encourage the most successful and efficient public policies of competitiveness in the Americas. GTECS participants also suggested enhanced efforts to document and disseminate the results and concrete collaboration among countries and institutions realized through RIAC.

In addition to these 10 conclusions and recommendations, the Group of Experts (GTECS) also shared 45 resources and tools for the promotion and measurement of subnational competitiveness.

All presentations, conclusions, resources and tools shared during the meeting are available online on the RIAC's Webpage at http://riacnet.org/grupo-de-expertos/ct_28/es/



Quick-reference Directory of RIAC Experiences collected in the 2012, 2013 and 2014 Signs of Competitiveness in the Americas Report

The quick-reference Directory of RIAC Experiences consolidates the contributions shared by countries and institutions in the 2012, 2013 and 2014 Signs of Competitiveness in the Americas Report. The experiences are organised under each of the 10 General Competitiveness Principles of the Americas. Please note that the colour in each experience represents the year in which they were published. The colour **blue** represents the year 2012, **yellow** represents the year 2013 and **green** represents the year 2014.

The original text of the experiences reported by countries and institutions to the three editions of the Signs of Competitiveness Reports, is available in full version at www.riacreport.org.

Principle 1: Promote high-quality, pertinent and timely education.

<p>Literacy Programme</p> <p>Jamaica</p> <p>Ministry of Education</p> <p>Sharing information, workshops, and expert visits to promote Universal Literacy</p>	<p>SENACYT Digital Colleges</p> <p>Panama</p> <p>National Secretariat for Science, Technology, and Innovation</p> <p>Expert visits, internships, and workshops on the improvement of education quality</p> <p>www.collegesdigitales.gob.pa</p>	<p>Task Force Education Innovation</p> <p>Suriname</p> <p>Cabinet of the President of the Republic of Suriname</p> <p>Information sharing, review of programs on renewed education coordination nationwide</p>	<p>Education Enhancement through Information Technology</p> <p>St. Lucia</p> <p>Ministry of Education, Human Resource Development & Labour</p> <p>Site visits and training workshops on strengthening primary education and libraries through ICT</p>
<p>Basic Education Enhancement Project (B.E.E.P.)</p> <p>St. Lucia</p> <p>Ministry of Education, Human Resource Development & Labour</p> <p>Site visits, training workshops and information sharing on improving education at primary and secondary schools</p>	<p>Public-Private Partnership Engineers Success for Elementary Education In impoverished Neighbourhood</p> <p>United States of America</p> <p>A. J. Whittemberg Elementary School of Engineering</p> <p>Conference calls, technical and experts visits and information sharing on public-private partnerships that could leap-frog the current educational challenges and deliver breakthrough results for 21st Century learners</p> <p>www.greenville.k12.sc.us/~jhw</p>	<p>Young Scientists Programme</p> <p>Panama</p> <p>National Secretariat of Science, Technology and Innovation</p> <p>Conference calls, video conferences and information sharing on a programme to activate children's interest for science and technology</p> <p>www.senacyt.gob.pa</p>	<p>Caribbean Youth Empowerment Project (Phase 2)</p> <p>St. Lucia</p> <p>National Skills Development Centre</p> <p>Conference calls, videoconferences, workshops, technical and experts visits, and information sharing on the improvement of vulnerable and conflictive youth in Saint Lucia through education and proper skill training</p>
<p>Creation of a Virtual Education Programme "Pan Online": Pilot Project at Success-Laventille Secondary School</p> <p>Trinidad and Tobago</p> <p>Sanch Electronix Ltd</p> <p>Conference calls, videoconferences, workshops, technical and experts visits, network building and facilitation learning application and information sharing on the incorporation of Information & Communications Technology (ICT), indigenous rhythms and national cultural instruments designed to train and enhance the skills of people in the music industry</p>	<p>Inter-Institutional Programme for Academic Talent Follow up (FISTA)</p> <p>Panama</p> <p>National Secretariat of Science, Technology and Innovation</p> <p>Conference calls, videoconferences, technical and experts visits, information sharing on identification, development and mentorship to talented children through a school enrichment programme</p> <p>www.senacyt.gob.pa</p>	<p>II Virtual-Educa Caribbean Conference Trinidad and Tobago 2014</p> <p>Trinidad and Tobago</p> <p>Virtual Educa</p> <p>Workshops, technical and experts visits, information sharing on innovative projects that aim for inclusion and sustainable development in education</p> <p>http://www.virtualeduca.org/en/centros/caribbean/2014/</p>	<p>8th International Conference of the Humanities, Arts, Science and Technology Alliance and Collaboratory (HASTAC)</p> <p>Peru</p> <p>Ministry of Culture, Ministry of Education, Organization of American States, University of Illinois, HASTAC and RedCIARA</p> <p>Teleconferences, videoconferences, workshops, technical and experts visits, information sharing on an academic community to promote multidisciplinary research through exchange of appropriate research, collaboration, files, scholarships, among others on a Web platform</p> <p>www.hastac.org/</p>

Principle 2: Foster the establishment of effective institutions responsible for promoting competitiveness with public-private partnerships.

<p>"Buy Colombian" Programme</p> <p>Colombia</p> <p>Ministry of Commerce, Industry, and Tourism</p> <p>Technical assistance, technical tours, and expert participation to share information on technological gaps, sectoral innovation, regulations, and product certification</p> <p>www.mincit.gov.co www.yo.comprocolombiano.com</p>	<p>Competitiveness Model of the Brunca Region</p> <p>Costa Rica</p> <p>Ministry of the Economy, Industry and Commerce, and the United Nations Joint Programme (UN - Habitat, FAO, UNDP, UNOIC, IOM, and ILO)</p> <p>Information exchange, videoconferences, and workshops for the development and implementation of a competitiveness model</p>	<p>Digital Review of Construction Plans</p> <p>Costa Rica</p> <p>Ministry of the Economy, Industry and Commerce</p> <p>Share experience and offer remote or in-person support (through prior coordination) to conduct procedures for the construction sector</p> <p>www.habitatcostaricagob.org/index.html https://epc.cofrecon.gov.ec/webF_login.aspx</p>	<p>National Procedures Catalogue</p> <p>Costa Rica</p> <p>Ministry of the Economy, Industry and Commerce</p> <p>Assistance, remote or in-person support to carry out procedures in Public Administration agencies or bodies</p> <p>www.mec.gov.cr</p>
<p>MEmpresa (2012, 2013, 2014)</p> <p>El Salvador</p> <p>Ministry of the Economy</p> <p>Information sharing, expert visits, videoconferences, workshops on the facilitation of business procedures to start, operate, and close an enterprise</p> <p>www.MEmpresa.gob.sv</p>	<p>Productive Development Fund FONDEPRO</p> <p>El Salvador</p> <p>Ministry of the Economy</p> <p>Sharing of information, technical human resources, and technical meetings to stimulate financial inclusion by facilitating MSME credit access to formal and microfinance banking</p> <p>www.fondepro.gob.sv</p>	<p>Sectoral Cells Programme</p> <p>El Salvador</p> <p>Office of Innovation and Technological Development</p> <p>Knowledge sharing, hosting country missions, and making an expert available to help create and speed up business innovation and technological development of vital economic sectors</p> <p>www.tuhventas.com</p>	<p>Policy of Innovation, Science, and Technology</p> <p>El Salvador</p> <p>Office of Innovation and Technological Development, Ministry of the Economy</p> <p>Share best practices on scientific and technological research that contributes to sustainable development and social well-being</p> <p>www.tuhventas.com</p>

Institutionalisation of Competitiveness Tables

Guatemala

Presidency of the Republic

Information sharing, workshops, and/or videoconferences on key steps that lead to electronic government

www.guatemala.reg.guatemala.org

Jamaica Competitiveness Enhancement Programme

Jamaica

Planning Institute

Share experiences on competitiveness by expanding access to credit and lowering business costs

<http://www.ploj.gov.jm>

Public-Private Partnerships for Road Development in Mexico

Mexico

Ministry of Communications and Transport

Sharing information, particularly on the implementation of models of public-private partnerships for the development of road infrastructure in Mexico

www.sct.gob.mx

National Competitiveness Forum

Panama

National Competitiveness Center

Information sharing, workshops, and expert visits to promote a high-level public-private dialogue to identify obstacles that limit improvements in competitiveness in the country

www.ncp.panama.org

The 2012-2013 Competitiveness Agenda as a Tool to Promote Competitiveness Reforms

Peru

National Competitiveness Council

Share information via videoconference or workshops on effective competitiveness agenda linked to a results-based budget and conditional transfer incentives policy

www.cnc.gob.pe

Second Congress of Dominican Industry

Dominican Republic

National Competitiveness Council

Sharing experiences, best-practices and stories, summaries and videos on how to improve competitiveness in the industrial sector

www.2docongresoindustria.do

Preparation and Start-up of project Framework for Private Sector Development

Suriname

Competitiveness Enhancement Technical Unit CETU (Competitiveness Council)

Information sharing on frameworks to coordinate the implementation of business climate reform projects and upgrade the human resource on issues related to private sector development

Establishment of the Economic Development Board and Council for Competitiveness and Innovation

Trinidad and Tobago

Ministry of Planning and Sustainable Development

Information sharing, country visits, workshops, and video/teleconferences on development and implementation of comprehensive strategies to accelerate sustainable economic growth and prosperity

www.planning.gov.tt

Creation of the Council for National Competitiveness and Productivity

St. Lucia

Ministry of Finance, Economic Affairs, Planning and Social Security

Information sharing on public-private dialogue to enhance development and economic growth

Competitiveness Agenda 2012-2013

Peru

National Competitiveness Council

Videoconferences, workshops and information sharing on competitiveness improvement in areas such as science, technology and innovation, business development, product quality and education, internationalisation, infrastructure, information and communication technology, business facilitation and the environment

www.cnc.gob.pe

Second Congress of the Dominican Industry

Dominican Republic

National Competitiveness Council

Experts, workshops, internships, meetings and information sharing on legal and institutional reform in the industrial sector to increase exports and generate new jobs

www.2docongresoindustria.do

Intra-Provincial Programme

Cordoba, Argentina

Ministry of Industry, Commerce, Mining and Scientific Technological Development of Cordoba

Teleconferences, videoconferences, workshops, expert visits and information sharing on the increase of products and services supply within the province of Cordoba, Argentina

Intra-National Programme

Argentina

Ministry of Industry, Commerce, Mining and Scientific Technological Development of Cordoba

Teleconferences, videoconferences, workshops, technical and experts visits, information sharing on a programme aimed at all industrial enterprises within the province of Cordoba, Argentina, who are interested in marketing their products outside the province and within the country

Programme to Develop a Public-Private Partnership Policy Framework for Saint Lucia

St. Lucia

Ministry of Finance, Economic Affairs & Social Security/ Technical Secretariat of the National Competitiveness & Productivity Council

Information sharing, conference calls, videoconferences on a cooperation programme essentially shaped to provide and improve infrastructure projects around the island

BioSTL – Collaboratively Building Regional Entrepreneurial Capacity for the Continued Growth of the St. Louis Biosciences

United States of America

BioSTL

Conference calls, videoconferences, workshops, technical and experts visits, information sharing on capacity building for the continued growth of St. Louis' bioscience sector and as part of this, BioSTL organises and convenes public/private partners to speak with one voice to attract resources

<http://www.bioatl.org>

Modernising the Legal Framework for Improving Business Climate

Suriname

Inter-American Development Bank Suriname Business For Us, the ASRA Manufacturers Organization

Information sharing, conference calls, videoconferences on the improvement of business climate in Suriname through strengthening an enabling business environment

www.surinamecompeto.org

Establishment of the Commercial Division of the Court, Competitiveness & Productivity Council

St. Lucia

Technical Secretariat, National Competitiveness & Productivity Council

Information sharing, conference calls, videoconferences on efficiency improvement in the court system, help create a better business environment and improve the enforcement of contract indicator

Curacao Competes: Creating Awareness about Competitiveness in Curacao, MarkSta Caribbean

Curacao

MarkSta Caribbean

Workshops, Technical and Experts Visits, Videoconferences on enhancing competitiveness in the private sector and to promote investment and exports

www.marksta.com

Principle 3: Promote a simpler, more stable and efficient institutional and regulatory framework for business and investment.

<p>Formalising Colombia</p> <p>Colombia</p> <p>Ministry of Labour and Treasury</p> <p>Conduct studies and support in the design and adaptation of methodologies and programs on Formalisation Policy</p> <p>www.colombiasseformaliza.com</p>	<p>Good Governance, Ethics, and Sustainability for the Public and Private Sectors</p> <p>Colombia</p> <p>AmCham Barranquilla – Colombian American Chamber of Commerce</p> <p>Consultancy and technical assistance, in particular in the area of good governance and ethics</p> <p>www.amchambaq.com</p>	<p>Start a Business</p> <p>Costa Rica</p> <p>Technical Secretariat, Digital Government, Ministry of the Economy, Industry and Commerce</p> <p>Sharing of experiences and providing remote or in-person assistance (through prior coordination) on the creation and launching of new businesses</p> <p>www.creanempresas.go.cr</p>	<p>Design of the Production, Trade, and Investment Code</p> <p>Ecuador</p> <p>Ministry of Coordination of Production, Employment, and Competitiveness</p> <p>Knowledge sharing, technical tours, video conferences on regulation of the productive process in different stages</p> <p>www.produccion.gob.ec</p>
<p>Business Ethics in Sectors of Export Interest to APEC Small and Medium-Sized Enterprises</p> <p>United States of America</p> <p>International Trade Administration, U.S. Department of Commerce</p> <p>Information sharing, workshops, and/or videoconferences on code of ethics promotion, particularly to three industry sectors: medical device, biopharmaceutical and construction/engineering</p> <p>www.apec.org</p>	<p>Improving Competitiveness: Business Climate Reform</p> <p>Jamaica</p> <p>Ministry of Industry, Investment and Commerce and the National Competitiveness Council</p> <p>Share the experience, methodology and proposal to lead a “Competitiveness Business Climate Think Tank” where countries and institutions can share their perspectives and focus their actions to improve business climate, which can be reflected in Doing Business Report indicators</p>	<p>National ISO Quality Management System Certification Project</p> <p>Jamaica</p> <p>Ministry of Industry, Investment and Commerce</p> <p>Provide high-level expert on Certification Programs to help businesses become more internationally competitive</p> <p>www.mic.gov.jm</p>	<p>Zero-Based Regulation and Regulatory Reform</p> <p>Mexico</p> <p>Ministry of Economy</p> <p>Visit of experts and sharing of information on simplification of regulations and procedures with a logic of economic or business processes and facilitating citizen interaction with services offered by the government</p> <p>www.economia.gob.mx</p>
<p>Strengthening National Metrology Institutes in the Hemisphere</p> <p>United States of America</p> <p>National Institute of Standards and Technology</p> <p>Assistance and information sharing on the development of National Quality Infrastructure and strong regional measurement infrastructure</p>	<p>Business and Investment Climate</p> <p>El Salvador</p> <p>Ministry of the Economy</p> <p>Exchange of experts, and information sharing on business climate improvement to facilitate business operations and become more competitive internationally</p> <p>www.inec.gob.sv</p>	<p>Support for Regulatory Improvement Projects</p> <p>Mexico</p> <p>Secretariat of the Economy</p> <p>Information sharing on public policy to increase productivity</p> <p>www.ago.developpement.economique.gob.mx</p>	<p>Western Hemisphere Border Management Reform</p> <p>United States of America</p> <p>U.S. Department of Commerce</p> <p>Knowledge sharing on regional competitiveness through border management reform</p>
<p>Single Registry for Security Interests (RUS)</p> <p>Mexico</p> <p>Secretariat of the Economy</p> <p>Sharing of information on registry procedures for security interests</p> <p>www.rug.gob.mx</p>	<p>Development of a National Competitiveness Strategy</p> <p>Honduras</p> <p>Technical Secretariat for Planning and External Cooperation</p> <p>Peer-to-peer, videoconferences, work meetings and information sharing on the national competitiveness strategy to achieve sustainable economic development</p>	<p>Suriname Business and Innovation Programme</p> <p>Suriname</p> <p>Competitiveness Unit Suriname</p> <p>Information sharing, conference calls, videoconferences on formulation and implementation of a modern industrial policy to facilitate sustainable growth and diversification; the legal and institutional framework, among others for effective public-private dialogue</p> <p>www.surinamecompete.org</p>	

Principle 4: Prioritize the development of human capital and promote continuous on-the-job training and the acquisition of new competences.

<p>Georgia Tech Panama Logistics Innovation & Research Centre</p> <p>Panama</p> <p>National Secretariat of Science, Technology and Innovation (SENACYT)</p> <p>Visits of experts, technical tours, videoconferences, workshops, and peer reviews on Capacity and Performance of the Country's Logistics</p> <p>www.gbatach.pa</p>	<p>Support for Priority Technical Tertiary Education Programs</p> <p>Uruguay</p> <p>National Agency of Research and Innovation (ANII)</p> <p>Information sharing on Develop Human Capital with Programs to Improve Technical Tertiary Education in Priority Areas</p> <p>www.ani.org.uy</p>	<p>International Creativity Park</p> <p>Colombia</p> <p>International Creativity Park</p> <p>Workshops and conferences on identification of young talent to create inventions, patent them and create companies based on scientific and technological developments</p> <p>www.parkofcreativity.org</p>	<p>Supporting Inclusive Businesses in Value Chain Competitiveness</p> <p>United States of America</p> <p>Action for Enterprise</p> <p>Information sharing on improving the role of inclusive businesses in MSMEs</p> <p>www.actionforenterprise.org</p>
<p>Skills for Inclusive Growth Project</p> <p>St. Lucia</p> <p>Ministry of Education and Culture</p> <p>Site visits and workshops on inclusive growth to fight youth unemployment</p>	<p>Exportar Más</p> <p>El Salvador</p> <p>Ministry of the Economy</p> <p>Exchange of experts and best practices, as well as information sharing on tools for businesses to increase exports</p> <p>www.proeca.gob.sv</p>	<p>Programme for the Strengthening of Entrepreneurial Culture in the University Community at the Autonomous University Corporation of Narinho</p> <p>Colombia</p> <p>Autonomous University Corporation of Narinho</p> <p>Teleconferences, videoconferences, workshops, experts visits and information sharing on strengthening the entrepreneurship culture including students, academicians, graduates, among others</p> <p>http://creanauinar.blogspot.com</p>	<p>Programme to Strengthen the Competitiveness of the Tourism Industry through Product Development, Human Resources Development, Standards Implementation and Destination Marketing Support</p> <p>St. Lucia</p> <p>Saint Lucia Hotel and Tourism Association</p> <p>Conferences/calls, videoconferences, workshops, technical and experts visits, information sharing on a voluntary fund to contribute in projects and activities that will add value to the local tourism industry</p> <p>www.saintlucialed.com</p>

Principle 5: Foster the development of a modern, efficient, well-maintained infrastructure – between and within countries, and foster the rapid adoption of new technologies by economies, including information technology and communications (TICs).

<p>Construction, Launching, and Operation of the "Vale del Pacifico" Events Centre</p> <p>Colombia</p> <p>Chamber of Commerce</p> <p>Knowledge sharing and technical assistance about reaching participation of local governments, and strategies for the sustainability of the project</p> <p>www.ccv.com.co/</p>	<p>Infoplejse (2012, 2013)</p> <p>Panama</p> <p>National Secretariat of Science, Technology and Innovation (SENACYT)</p> <p>Information sharing, technical visits and workshops on Closing the Digital Divide and Democratize the Access to Knowledge</p> <p>www.senacyt.gob.pa/</p>	<p>Traceability in the Beef Cattle Sector: Information System for the Beef Cattle Industry</p> <p>Uruguay</p> <p>Ministry of Industry, Energy and Mining</p> <p>Information sharing by professionals, and experienced operators on transparent and successful traceability control system for the beef cattle value chain based on state-of-the-art ICTs</p> <p>www.inac.gub.uy</p>	<p>Inclusion of Urban Transport through Aerial Cable</p> <p>Colombia</p> <p>Vale de Abund Mass Transport Enterprise Ltda – Metro of Medellín Ltda</p> <p>Expert visits, presentations, technical assistance and consulting services on passenger transport system by air cable</p> <p>www.metrodemedellin.gov.co</p>
<p>Industrial Infrastructure in the City of Rochelle, Illinois</p> <p>United States of America</p> <p>Greater Rochelle Economic Development Corporation / City of Rochelle</p> <p>Host visits and share a short video titled "A Decade of Success" on the reinvigoration of the manufacturing sector by building infrastructure to support 21st-century industries</p> <p>www.dtyofrochelle.net</p>	<p>Development of a Modern, Efficient, and Well-Maintained Infrastructure and Information Technology</p> <p>Grenada</p> <p>Ministry of Communications, Works, Physical Development, Public Utilities & ICT</p> <p>Information sharing on stimulation of growth through TICs development</p>	<p>Expansion of the Panama Canal</p> <p>Panama</p> <p>Panama Canal Authority</p> <p>Exchange of best practices and lessons learned on the expansion of the canal to bring greater transportation efficiency</p> <p>https://micanaldepanama.com/ amplacion-del-canal-de-panama/</p>	<p>Construction and Commission of the New Metro in Panama</p> <p>Panama</p> <p>Metro Secretariat</p> <p>Information sharing through work sessions or presentations of the project</p> <p>www.elmetrodepanama.com</p>

Urban Renovation, Oumidi Project 

Panama

Ministry of Housing and Land Management

Information sharing on the urban project that provides housing, lowers crime and creates opportunities

www.mivlot.gob.pa

Developing Infrastructure in Deprived Communities in East Port of Spain 

Trinidad and Tobago

East Port of Spain Development Company Limited

Experts and information sharing on special development strategy for building physical and social infrastructure

www.espedct.com

Infrastructure Development in the Western Peninsula 

Trinidad and Tobago

East Port of Spain Development Company Limited

Knowledge and information sharing on infrastructure development to improve tourism

www.chagdev.com

St. Lucia Tourism Benchmarking and Competitiveness Strategy Project 

St. Lucia

Ministry of Finance, Economic Affairs, Planning and Social Security; Ministry of Tourism, Heritage and the Creative Industries; with financing from the World Bank

Exchange of success and failure practices, and information sharing on tourism industry transition to a more market-driven model

Port Logistics Centre, Caucaedo 

Dominican Republic

Caucaedo Development Corporation

Provision of government and private sector technicians to share information and assistance on coordination of land, air and maritime services to improve productive business mechanisms

www.caucaedo.com

Georgia Tech Logistics Innovation & Research Centre 

Panama

Secretariat of Science, Technology and Innovation

Information sharing on logistics and trade improvement

www.gtach.pa/ais/
www.gtach.pa/research/portal/

Direct Domestic Optical Fiber 

Uruguay

National Telecommunications Administration

Experts visits and cooperation

www.intel.com.uy

Bicycle Sharing in the U.S. 

United States of America

U.S. Department of Transportation

Knowledge sharing on the infrastructure of urban transportation point to point trips

www.bicyclinginfo.org/promote/bikeshareintheus.pdf

BioGenerator, Comprehensive System for Bioscience Enterprise 

United States of America

BioGenerator/U.S. Department of Commerce

Host expert visits, technical tours of its pre-incubator facility for entrepreneurs, and information sharing on scientific discoveries and testing economic growth in a city

www.biogenerator.com

Platform for the Support of Exports, PAEX 

Bolivia

Ministry for Sustainable Development and a Plural Economy MDPyP

Visits and information sharing on public services such as registration, accreditation, certification and validation closer to stakeholders

www.produccion.gob.bo

Monitoring System for Quality Brands 

Mexico

Comprehensive Port Administration of Ensenada, S.A. de C.V.

Exchange of experts, internships, seminars, courses, workshops and virtual resources on monitoring systems to identify bottlenecks and lower logistics times

www.puertoensenada.com.mx
www.marcaclidatados.com.mx

Port Security and Development 

Haiti

Haiti National Port Authority

Information sharing on strengthening business activity in ports

www.apn.gov.ht

Logistics Model for the Port of Valparaiso 

Chile

Public and private organizations, regulatory agencies and institutions in Port of Valparaiso

Exchange of experts and information sharing on the construction of an extension zone for logistics support (ZEAL)

Port Expansion Plan 

Colombia

National Planning Department, National Council on Economic and Social Policy and other government entities involved in the development of the national port system

Exchange of experts, seminars, courses, workshops, virtual resources and information sharing on the identification of port areas at a national level, public and private investment, considerations for public areas and growth

www.infraestructura.gov.co

Biological Monitoring Project in Four Pilot Ports 

Venezuela

Bureau of Hydrography and Navigation, Coordinating Office of Hydrography and Navigation, Coast Guard, Venezuela's Oil, Ministry of Foreign Affairs, Environment and Health, Socialist Institute of Fisheries and Aquaculture, National Universities of Venezuela

Exchange of experts, seminars, courses, workshops, virtual resources and information sharing on protection of marine ecology and public health

www.inea.gov.ve

National Competitiveness Council 

Jamaica

National Competitiveness Council (NCC)

Share experiences and methodology with countries, and lead a "Competitiveness Business Climate Think Tank" to improve indicators in the Doing Business Report

Innovation Depot Technology Incubation Programme 

United States of America

Innovation Depot, Inc.

Conference calls, technical and experts visits and information sharing on emerging biotechnology/life science, information technology engineering and service businesses to facilitate technology commercialization

www.innovationdepot.net

Commonwealth Centre for Advanced Manufacturing 

United States of America

University of Virginia

Conference calls, videoconferences, workshops and technical and experts visits, information sharing on how to transform applied research into business advantages and to create and apply new technologies that solve problems identified by industry

www.ccam-va.com

Programme for Software Industry Development (PROSOFT) 

Mexico

Ministry of the Economy

Teleconferences, videoconferences, workshops and technical and experts visits and information sharing on competitiveness in the information technology sector (IT), primarily by promoting the adoption of IT from an innovative, market-oriented perspective

www.prosoft.economia.gob.mx

Santa Science and Technology Park Development Corporation (SSTPDC) 

United States of America

Santa Science & Technology Park Development Corporation

Conference calls, videoconferences, workshops, technical and experts visits, information sharing on the creation of technology-based, high quality high wage, and long-term jobs

SSTPDC

<p>Southeastern Institute of Manufacturing and Technology (SIMT)</p> <p>United States of America</p> <p>Florence-Darlington Technical College</p> <p>Conference calls, videoconferences, workshops, technical and experts visits, and information sharing on how to attract, grow and retain manufacturers and businesses.</p> <p>www.simt.com</p>	<p>Building a Water Technology Cluster and Fostering Entrepreneurship</p> <p>United States of America</p> <p>The Water Council</p> <p>Conference calls, videoconferences, workshops, technical and experts visits, and information sharing on water-related assets in the Milwaukee Region to build a world hub for water research, education, and economic development.</p> <p>www.thewatercouncil.com</p>	<p>Project 17</p> <p>United States of America</p> <p>Kansas State University</p> <p>Conference calls, videoconferences, technical and experts visits, information sharing on economic improvement conditions by tackling concrete problems such as the lack of high speed internet services; the need to create a supportive entrepreneurial ecosystem; among others.</p> <p>www.bsaproject17.org</p>	<p>Programme to Develop an Online Import Monitoring Module</p> <p>St Lucia</p> <p>Ministry of Commerce, Business Development, Investment and Consumer Affairs</p> <p>Conference calls, videoconferences, workshops, technical and experts visits, information sharing about online Import Monitoring Module for the automation of the Import Licence process designed to reduce time, costs and number of procedures.</p> <p>http://www.customs.gov.lc/wardient/</p>
<p>The Complete Caribbean Programme</p> <p>CARIFORUM Member States</p> <p>Inter-American Development Bank, the United Kingdom Department of International Development and the Foreign Affairs, Trade and Development Canada and operates in partnership with the Caribbean Development Bank.</p> <p>Collaboration of information sharing on fostering sustainable economic growth and enhance competitiveness in the Caribbean.</p> <p>www.comprocaribbean.org</p>	<p>Break Point, Caribbean Export</p> <p>Bahamas, Belize, Barbados, Dominica, Dominican Republic, Grenada, Jamaica, St. Kitts and Nevis, St. Lucia, and Trinidad and Tobago</p> <p>Caribbean Export Development Agency</p> <p>Information sharing and workshops on the assessment of the private sectors access opportunities while facilitating linkages to investors through CARIFORUM/CIJ Economic Partnership Agreement (EPA).</p> <p>www.cia-export.com/export-development/areas-to-visit-caribbean-break-point/</p>	<p>Oriongate</p> <p>Mexico</p> <p>Municipality of Queretaro</p> <p>Conference calls, videoconferences, technical and experts visits, information sharing on large scale free wireless connection for the entire city of Queretaro.</p> <p>www.municipio.queretaro.gob.mx</p>	<p>Wall of Wind, Extreme Events Institute at Florida International University</p> <p>United States of America</p> <p>Florida International University (FIU)</p> <p>Conference calls, videoconferences, workshops, technical and experts visits, and information sharing on understanding of hurricane impacts on buildings and other structures for disaster risk reduction.</p> <p>www.cow.fiu.edu</p>

Principle 6: Position Innovation and high impact entrepreneurship as a determining factor of competitiveness, through greater public and private investment in research and development.

<p>Start-Up Chile (2012, 2013)</p> <p>Chile</p> <p>Production Development Corporation (CORFO), Ministry of Economy</p> <p>A programme specialist visit to another country to encourage entrepreneurs make a social commitment.</p> <p>www.startupchile.org</p>	<p>"Start-Up Fund"</p> <p>Colombia</p> <p>National Learning Service - SENA</p> <p>Sharing of information and providing advice to create a fund for survival ventures.</p> <p>www.fondosemprende.com</p>	<p>INNpuls Colombia</p> <p>Colombia</p> <p>Bancolombia - Ministry of Commerce, Industry and Tourism</p> <p>Sharing of knowledge and used methodologies on strengthening of clusters with emphasis on innovation.</p> <p>www.innpulsa.com</p>	<p>National SME Fund Promotion Programme</p> <p>Costa Rica</p> <p>Ministry of the Economy, Industry, and Commerce</p> <p>Sharing of information and lessons learned on management potential, competitiveness of small and medium enterprises, and clusters in Costa Rica.</p> <p>www.meic.go.cr</p>
<p>InnovaEcuador</p> <p>Ecuador</p> <p>Ministry of Coordination of Production, Employment, and Competitiveness</p> <p>Sharing the experience to create a network in the region to promote the development of knowledge and technologies to create new products, processes, and commercialization mechanisms.</p>	<p>EmprendEcuador</p> <p>Ecuador</p> <p>Ministry of Coordination of Production, Employment, and Competitiveness</p> <p>Participation in an exchange exercise on development of national productive diversification.</p>	<p>Business Innovation Award</p> <p>El Salvador</p> <p>Office of Innovation and Technological Development, Ministry of the Economy</p> <p>Information sharing and assigned human resources from distance to strengthen trust in the joint work between universities and business to improve competitiveness of small and medium enterprises.</p> <p>www.premionovus.com</p>	<p>Global Centre for Medical Innovation</p> <p>United States of America</p> <p>Georgia Institute of Technology, Saint Joseph's Translational Healthcare Institute, Piedmont Healthcare, Georgia Research Alliance</p> <p>Hosting hours and meetings on medical device development and commercialization in other countries.</p> <p>www.devices.net</p>

Mexico Ventures

Mexico

Nacional Financiera (NAFINSA), Ministry of Economy

Advisory services, consultancy participation in events, guided visits, hosted events in Mexico on potential areas of growth with respect to the financing of companies in the Mexican market

www.fondodefondos.com.mx

Science and Technology Programme FINCYT (Financing for Innovation, Science and Technology)

Peru

National Competitiveness Council

Information sharing through presentations on finance scientific and technological research and business innovation activities

Idea 2 Innovation Competition (2012, 2013, 2014)

Trinidad and Tobago

Council for Competitiveness and Innovation, Ministry of Planning and Sustainable Development

Information sharing and details of the I2 initiative are available through the council's Website on Innovation Competition Rewards Business Creativity that Serves the National Community

www.cci.gov.tt

Internationalizations of the Productive Specialization

Uruguay

Ministry of Industry, Energy and Mining

Expert visits, technical missions, and workshops on development of technical and innovation capabilities in the sectors of Biotechnology, Nanotechnology, Software and Electronics, and their value chains

www.piap.org.uy

Comprehensive Support for Entrepreneurship

Guatemala

Ministry of Economy

Information sharing on fostering entrepreneurship to consolidate emerging businesses

Enterprise Development Centre to Support MSMEs

Trinidad and Tobago

Caribbean Industrial Research Institute

Host trips to observe the facility and information sharing on the Centre to transform "ideas" into viable businesses

www.cairi.com

Rutgers Food Innovation Centre

United States of America

Rutgers, the State University of New Jersey

Information sharing on value-added enterprises to create viability in food and agriculture industry

www.foodinnovation.rutgers.edu

Manufacturing Solutions Centre, North Carolina

United States of America

The Manufacturing Solutions Centre

Experience sharing, both positive and negative, on creating and retaining manufacturing jobs

Centre for Entrepreneurship and Technology, Northern Arizona

United States of America

Northern Arizona Centre for Entrepreneurship and Technology Incubator Building

Information sharing on promoting commercialization of local technologies

www.nacst.org

Clemson University International Centre for Automotive Research

United States of America

Clemson University

Information sharing virtually and face-to-face, about fostering a knowledge economy that benefits local companies

www.ciaicr.com

Science and Technology Programme

Peru

National Competitiveness Council

Presentations and information sharing on capacity building for research, development and technological innovation.

www.fincy.gov.pe

Laboratory of Multimedia Innovation, TELESUR

Suriname

Telecommunication Company Suriname (TELESUR)

Information sharing on Innovation Lab Spurs development of multimedia applications

www.tmsi.sr

<https://www.youtube.com/user/Telesur888>

University Research Evaluation Programme

Chile

National Commission on Research, Science and Technology

Teleconferences, videoconferences, expert visits and information sharing on innovative entrepreneurship in Chilean universities promoting Science and Technology

<http://www.conicyt.cl/fondos/>

FINNOVA

Mexico

Ministry of Economy

Information, teleconferences, videoconferences, workshops and technical and experts visits on innovation in Mexico through total or partial grants for innovation-oriented projects

www.economia.gob.mx

University of Wisconsin - Milwaukee Innovation Campus

United States of America

City of Wauwatosa, Wisconsin

Information sharing, conference calls, videoconferences, and technical and experts visits about public/private partnership designed to create a place to launch intellectual property for the new Century

<http://www.wisconsinstatefoundation.org/innovationpark/default.aspx>

Engineering Services and Business Consulting to Support the Western North Carolina Region

United States of America

Western Carolina University, Cullowhee NC

Conference calls, videoconferences, workshops and technical and experts visits and information sharing on a suite of prioritizing services for investors, entrepreneurs, project sponsored to stress partners

<http://www.wcu.edu/academic/departments-schools-colleges/online/index.jsp>

Innovative Solutions for Invention Collaboration (ISI)

United States of America

Austin BiolInnovation Institute in Alton (ABIA)

Conference calls, videoconferences, workshops, technical and experts visits, and information sharing to increase innovation and minimize the time from idea to commercialization of new technologies

www.abiakron.org

Pilot Programme: Innovation for Firms in Suriname

Suriname

Competitiveness Unit Suriname

Information sharing, conference calls and videoconferences on innovation and development of local firms, particularly SMEs by strengthening their integration into value chains

<http://www.surinamecompeto.org/>

Capacity Building for Innovation and Business Creation/Expansion

Trinidad and Tobago

Caribbean Industrial Research Institute

Conference calls, workshops, technical and experts information sharing, and technical visits about business advisory support services to individuals and enterprises willing to take innovative ideas and projects through the incubation process to commercialization

www.cairi.com

University Programme to Support Patent Filing and Technology Transfer

Mexico

Banamérita Universidad Autónoma de Puebla

Teleconferences, videoconferences, workshops, tours and experts visits, information sharing on patent filing and technology transfer in Puebla

www.ditico.buap.mx

Principle 7: Improve access to capital for economic actors, especially MSMEs and entrepreneurs, and promote public-private mechanisms to increase financial inclusion.

<p>Financing Public Transportation Micro-Enterprises</p> <p>Costa Rica</p> <p>Banking System for Development (SBD)</p> <p>Videoconferences about banking access to two drivers for renewals of vehicles and thus reaching specific requirements</p>	<p>National Institute for Entrepreneurship</p> <p>Mexico</p> <p>Secretariat of the Economy</p> <p>Sharing of successful practices, participation by federal entities, and information on financing, marketing and quality to promote rise of new entrepreneurs</p> <p>www.niedem.gob.mx</p>	<p>GRACES NPY/MES</p> <p>El Salvador</p> <p>Ministry of the Economy</p> <p>Information sharing on investment and growth of MSMEs</p> <p>www.minec.gob.sv</p>	<p>Fund for Small and Medium-Size Businesses</p> <p>Suriname</p> <p>Ministry of Finance and the Central Bank of Suriname</p> <p>Information sharing on funds to contribute to strengthen capacity and production in SMEs</p> <p>www.vdbbankar</p>
<p>Fund of Funds</p> <p>Mexico</p> <p>Ministry of Economy</p> <p>Participation in conferences, work meetings, advice and consultancy on venture capital funds with an international focus</p> <p>www.fondodefondos.com.mx</p>	<p>One-Stop Window for Construction Work in the Municipality of Guatemala</p> <p>Guatemala</p> <p>Ministry of the Environment and Natural Resources and the General Land Ownership Registry</p> <p>Information sharing on official assignment of the requirements and procedures to obtain building permits, reducing costs, time and the number of visits to other agencies</p> <p>www.mina.guatemala.gob.gt www.mingob.gt www.rgp.org.gt</p>	<p>Microcredit Programme</p> <p>Suriname</p> <p>Women's Business Group Foundation - Micro Krediten Unit, Ministry of Finance</p> <p>Information sharing on the programme. An acronym relates entrepreneurs with little or no access to financial products of financial institutions</p> <p>http://mbu.cottage-it.com</p>	<p>Design Export</p> <p>Brazil</p> <p>Brazilian Trade and Investment Promotion Agency (Apex-Brasil)</p> <p>Videoconferences, teleconferences, workshops, experts visits and information sharing on stimulation of sales and innovation potential of Brazilian industries as a way of gaining competitiveness, thus better positioning of Brazilian products on international markets</p> <p>www.designexpert.org.br</p>

Principle 8: Foster equity, inclusion, social entrepreneurship, the adoption and application for corporate social responsibility principles, sustainability, shared value and gender equity.

<p>Inclusion of Women in Ports-Related Work</p> <p>Peru</p> <p>TISLR</p> <p>Exchange of experts, internships, seminars, courses, workshops and information sharing on training women to increase efficiency in port operations</p> <p>www.tislr.com.pe</p>	<p>Trinidad and Tobago Foresight and Innovation Network</p> <p>Trinidad and Tobago</p> <p>NEXT Caribbean</p> <p>Information sharing, workshops and technical and experts visits on the development of an online social network to engage and connect champions of innovation, critical thinking, creativity and entrepreneurship</p> <p>http://www.tifn.net</p>	<p>Entrepreneurship Reality Television Game Show - The Big Start, Office of Private Sector Relations</p> <p>St. Lucia</p> <p>Office of Private Sector Relations (OPSR)</p> <p>Conference calls, videoconferences, workshops, technical and experts visits, and information sharing on a TV Show to approach a wide audience and educate them into having proper business management and motivation to have their own business</p> <p>www.thebigstartshow.com</p>	<p>Development Centre for Micro and Small Enterprises</p> <p>El Salvador</p> <p>Ministry of Economy through National Commission of Micro and Small Enterprises (CONAMYPE)</p> <p>Videoconferences, workshops, technical and experts visits, information sharing on SME growth production and strengthening giving them participating and advisory services</p> <p>http://www.conamype.gob.sv/index.php?see=tbls/guia-de-ser-vicio/variacion-orden</p>
<p>Model Quality with Gender Equality</p> <p>Uruguay</p> <p>National Institute of Women - Ministry of Social Development</p> <p>Workshops, technical and experts visits, information sharing on public and private organisations of more than 30 people to integrate elements of gender equality into its management</p> <p>www.inmujeres.gub.uy/temasports/pe/pece/vs/ www.fest/cv/label_con_sujebad_gd_guano</p>	<p>LOREAL UNESCO-CONCYTEC Recognition for Women in Science</p> <p>Peru</p> <p>National Council of Science, Technology and Technological Innovation</p> <p>Information sharing on grants awarded to Peruvian women conducting scientific research in the areas of life sciences, biological sciences and health sciences</p> <p>http://portal.concytec.gob.pe/index.php/fondocyt-becas/pe/areas/grants-lore-al-unesco-concytec-pe-2014-ni-grant-es-13-clasica-2014.html</p>		

Principle 9: Promote trade and integration, trade liberalization and improve the competitiveness and productivity of industry, giving special priority to our MSMEs.

<p>Productive Transformation Programme</p> <p>Colombia</p> <p>Ministry of Commerce, Industry, and Tourism</p> <p>Sharing the experience about macro business conferences</p> <p>www.ptp.com.co</p>	<p>Central American Border Management Reform</p> <p>United States of America</p> <p>U.S. Department of Commerce</p> <p>Cooperation between the project partners and RIAC members to improve the potential for coordination, partnership, and resource sharing on improving systems, regulation, and infrastructure required between borders</p>	<p>National Market Leaders Programme</p> <p>Mexico</p> <p>Ministry of Economy (Undersecretariat for SMEs)</p> <p>Facilitate contacts with the owners of the various supplier methodologies and share information on closer links between MSMEs and large firm leaders, in coordination with government authorities and businesses</p> <p>www.empresartractores.com</p>	<p>Quality to Compete Programme</p> <p>Dominican Republic</p> <p>National Competitiveness Council</p> <p>Workshops and meetings about quality management systems to strengthen SMEs' productive and export capabilities</p> <p>www.calidadpe.competir.org</p>
<p>Más PYMES (2012, 2013)</p> <p>Dominican Republic</p> <p>National Competitiveness Council</p> <p>Government and private sector technicians provision to share information on SMEs programme to strengthen competitiveness and innovation among businesses</p> <p>www.maspymes.com.do</p>	<p>Business Ethics In Export Sectors Relevant to APEC Small and Medium-Sized Enterprises</p> <p>United States of America</p> <p>International Trade Administration, U.S. Department of Commerce</p> <p>Information sharing on corruption combat in SMEs sectors</p> <p>www.icapec.org</p>	<p>Growth for the Support of Micro and Small Enterprises</p> <p>El Salvador</p> <p>Ministry of the Economy</p> <p>Exchange of experts, information sharing on the decentralization of business services to improve support to MSMEs</p> <p>www.comany.pe.gob.sv</p>	<p>Rapid Business Openings: FORTA</p> <p>Mexico</p> <p>Secretariat of the Economy</p> <p>Webconferences, work tours, and information sharing on transactions related to the opening and setting in motion of businesses</p> <p>www.tuempresa.gob.mx</p>
<p>Digital Sandbox KC – Kansas City's Proof of Concept Centre to Spur Startup Entrepreneurship</p> <p>United States of America</p> <p>University of Missouri – Kansas City</p> <p>Sharing of information including process manuals, workshops and technical experts visits, conferences calls, and videoconferences on proof-of-concept Centre to serve as the connection point for large businesses, emerging enterprises and university research community</p> <p>www.digitalandsandbox.com</p>	<p>Advanced Manufacturing and Prototype Centre of East Tennessee</p> <p>United States of America</p> <p>Technology 2020</p> <p>Conferences calls, workshops, technical and experts visits, information sharing on job-growth acceleration and development in the region</p> <p>www.amptn.com</p>	<p>Component – Entrepreneurial Development Thrust – Micro and Small Enterprise Website</p> <p>St. Lucia</p> <p>Office of Private Sector Relations</p> <p>Information sharing, conference calls, videoconferences, workshops and technical and experts visits about the website designed and developed to gather practical information to support and promote micro and small businesses</p> <p>www.entrepreneurstlucia.com</p>	<p>Toolbox for MSMEs</p> <p>El Salvador</p> <p>Ministry of the Economy</p> <p>Videoconferences, teleconferences, workshops and information sharing on a knowledge management platform to provide information to MSMEs about the European market to foster business between regions</p> <p>www.miec.gob.sv/cjademercanietasa/</p>
<p>TechHelp – Programme to Develop and Grow Idaho Manufacturers</p> <p>United States of America</p> <p>TechHelp, Boise State University</p> <p>Conference calls, videoconferences, workshops and technical and experts visits, information sharing and webinars on technical and advanced training to grow revenues, increase productivity and performance, and strengthen global competitiveness</p> <p>www.techhelp.org</p>	<p>Small Business Network of the Americas: Expanding the Small Business Development Centre Model to LAC Markets for SME Development and Trade</p> <p>United States of America</p> <p>University of Texas at San Antonio on behalf of U.S. Department of State</p> <p>Conferences calls, videoconferences, workshops and technical expert visits, research building and information sharing on model expansion to improve SME competitiveness, generate new trade opportunities, and promote the economic integration of the region</p> <p>www.sbsnetglobal.com/index.php?international=tdc-can.html</p>		

Principle 10: Promote energy efficiency and development to foster environmental, social and economic sustainability, including the vision to become low carbon economies.

<p>National Sustainable Energy Policy</p> <p>Barbados</p> <p>Division of Energy and Telecommunications, Office of the Prime Minister</p> <p>Expert visits and presentations on solar energy</p> <p>http://www.energy.gov.bb</p>	<p>Energy for Sustainable Development</p> <p>Belize</p> <p>Ministry of Energy, Science and Technology and Public Utilities</p> <p>Information sharing on energy policy framework to guide sector development in the next 30 years</p> <p>www.epu.gov.bz</p>	<p>Development of Renewable Energy, Energy Efficiency, and Electrification</p> <p>Suriname</p> <p>Ministry of Natural Resources</p> <p>Information sharing on renewable energy technology to help provide electricity to remote areas</p>	<p>Universal Access to Energy (LPG) for Vulnerable Populations, Social Compensation and Promoting Access to LPG</p> <p>Peru</p> <p>Energy and Mining Investment Watchdog</p> <p>Teleconferences, videoconferences, workshops, expert visits, technical tours, information sharing on the consumption of gas improve health and life quality of Peruvian households in vulnerable situations.</p> <p>http://www.fies.gob.pe</p>
<p>Energy Production and Infrastructure Centre (ERIC)</p> <p>United States of America</p> <p>University of North Carolina at Charlotte</p> <p>Conference calls, videoconferences, workshops, technical and experts visits, information sharing on a multidisciplinary effort to unite the academic and research expertise of the University with the great wealth of energy engineering talent</p> <p>https://eric.uncc.edu/</p>	<p>Fraunhofer Centre for Sustainable Energy Systems</p> <p>United States of America</p> <p>US Department of Commerce's Economic Development Administration</p> <p>Conference calls, videoconferences, workshops, technical and experts visits, information sharing on fostering economic development through the commercialization of clean energy technologies for the benefit of society</p> <p>www.fraunhofer.org</p>	<p>Houseboat to Energy Efficient Residences</p> <p>United States of America</p> <p>Kentucky Highlands Investment Corporation</p> <p>Information sharing and conference calls about the programme on pairing graduate students of Design Architecture with Student engineers to design modular residences that incorporate readily available energy efficient technologies into their designs</p> <p>www.uky.edu/design/indev.php/</p>	<p>Sustainable Northern Communities Centre</p> <p>United States of America</p> <p>US Department of Commerce, Economic Development Administration</p> <p>Sharing building plans, construction manuals, detailed instructional videos and integrated design among others on the collaboration platform to reduce construction costs, create healthy living environments in Oconomowoc district</p> <p>www.cchcc.org/</p>
<p>Closed Looped Cycle Production in the Americas Programme</p> <p>Colombia, Panama and Trinidad and Tobago</p> <p>Department of Sustainable Development, Organization of American States</p> <p>Conferences/calls, videoconferences, workshops, technical and experts visits, information sharing on how to increase of productivity, improve energy efficiency and environmental performance in the industrial sector</p> <p>www.oas.org/en/sect/ind/Energy/CLCP.asp</p>			

The following section, inspired by the main theme of the VIII Americas Competitive Forum, **The Human Imagination at Work: Driving Competitiveness, Powering Innovation**, showcases more than fifty five experiences shared by fifteen member countries of the RIAO. These initiatives are provided for promoting the competitiveness agenda in each country, in order to reach the goal of working together and help each other become a more innovative, productive and competitive region.

The experiences are mainly focused on Innovation and Entrepreneurship and seek to complement the 10 General Competitiveness Principles. They are organized into five subsections: (i) SMEs, Innovation, and Entrepreneurship; (ii) Development of Human Capital; (iii) Regulatory Framework, Business Climate, and Trade; (iv) Energy; (v) Institutions and Programmes. In addition, the summary of each experience showcases collaboration opportunities for countries and include what each institution is willing to offer to replicate such experience.

The original text of the experiences reported by countries and institutions is available in the full version of the 2014 Signs of Competitiveness in the Americas Report at www.rtaereport.org.



2014 Experiences on Innovation and Entrepreneurship



SMES, INNOVATION AND ENTREPRENEURSHIP

Note: for further information on the complete versions of interviews, contributions, and experiences shared by RIAC members, institutions and programmes (including footnotes and citations) please visit www.riacreport.org



Trinidad and Tobago Foresight and Innovation Network

Trinidad and Tobago
2005 - Present
www.ttffi.net

Coordinating Institution:
NEXT Caribbean



Since 2005, The National Institute of Higher Education, Research, Science and Technology (NIHERST) and NEXT Corporation have worked together to support the development of an online social network to engage and connect champions of innovation, critical thinking, creativity and entrepreneurship in Trinidad and Tobago. The network has over 600 registered members today ranging in age from 15 - 85 years. Over the years members of the network have participated in a number of progressive initiatives that have contributed towards enhancing competitiveness, innovation and creativity in the country. The network has been operating for nearly nine years now and the level of interest and interactivity is at its highest today.

Results:

NIHERST Sector Best Bet Business Investment Projects supported 11 initiatives in total;

The National Generation Y project has helped 15 - 28 years olds develop critical thinking skills and a ten year personal future vision;

The T&T Entrepreneurship and Innovation Club was established and now has over 1,320 members;

Organisation of several entrepreneurship and innovation networking sessions supported by CARIRI and

Numerous sponsors provided contributions towards setting up the CARIRI Centre for Enterprise Development business innovation and development programmes.

Offer:

Information sharing, workshops and technical and experts visits.

Contact Information:

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Design Export

Brazil
2013 - 2015
www.designexport.org.br

Coordinating Institution:
The Brazilian Trade and Investment
Promotion Agency (Apex-Brasil)



Design Export is a programme that supports Brazilian export-oriented companies that develop innovative products and services with a differentiated design. Some of its main goals are to raise companies' awareness on the importance of design to enhance the value of their products and services, thus better positioning Brazilian products on international markets. The programme leverages innovative, entrepreneurial initiatives and creates conditions so that small companies can reach foreign markets in a more competitive way, allowing cost reduction, access to new markets and an increase in the value-added of their products. Companies supported by the Design Export Programme are current exporters that also participate in various trade promotion initiatives supported by Apex-Brasil, such as international trade fairs, roundtables, trade missions and others.

Results:

Raising awareness: 97 companies were informed about the use of design as a way to add value to their products and services, and increase their exports;

Stimulating the use of design tools: 70 companies registered for the program, from which 69 companies are already using design as an innovation tool through management design consultancies;

Cost reduction: at least 10 companies have already reported cost reduction in their production process and

Increasing companies' exports: so far 10 companies have developed new products or services that are currently being introduced to international markets through Apex-Brasil's export promotion initiatives.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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University Research Evaluation Programme

Chile
2011 – Present
www.conicyt.cl/fondef/

Coordinating Institution:
National Commission for Scientific and Technological Research - CONICYT



The Programme fosters a culture of innovative entrepreneurship in the university community, based on the evaluation of research conducted in Chilean universities by undergraduate and postgraduate students. The program seeks to promote science and technology as drivers of innovation process in addition to developing a capacity for entrepreneurship to transform research results into productive or social ends. Participants include businesses and other stakeholders that help to identify development priorities or high-impact problems where projects by young researchers can be integrated as high-value inputs and contribute to solving a specific problem or fill a specific need.

Results:

More than 250 projects have applied in the last 3 years, more than 150 have been approved to develop their business plans. Among these, close to 90 projects have moved forward to the execution and implementation stage;

A new mechanism for financing innovation has been validated, one that drives and promotes science-based entrepreneurship in Chile, and the scope of internal IP regulation has been expanded with regards to participation by students and former students in the processes of innovation and

After a qualitative evaluation, improvements were made to the component involving training and delivery of tools for entrepreneurship, balancing the component based on sciences with that based on businesses.

Offer:

Information sharing, teleconferences, videoconferences, technical tours and expert visits (beginning in November 2014).

Contact Information:

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University Research Evaluation Programme (VIU - FONDEF)
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Digital Sandbox KC – Kansas City's Proof of Concept Centre to Spur Startup Entrepreneurship

The United States of America
2012 – Present
www.abiakron.org

Coordinating Institution:
University of Missouri
Kansas City



The Digital Sandbox KO proof-of-concept Centre is a central hub created in 2011 in Kansas City to serve as the connection point for large businesses, emerging enterprises and the university research community, to evaluate and develop new products and services. By partnering with large corporations such as Sprint, Hallmark, VML, Cerner and UMB, the Sandbox provides early stage concepts with critical access to capital, as well as mentoring relationships to assist with idea development and finding critical connections. An average of \$20,000 in technical assistance is available per project as well as in-kind resources from industry and other partners. The Sandbox also provides other resources such as market validation, legal support, and prototyping. Once past the proof-of-concept funding level, entrepreneurs can still have access to the Sandbox network to seek advice and continue to expand their company.

Results:

Digital Sandbox KO surpassed its goals six months ahead of schedule. Originally designed to help 10 start-up companies secure follow on funding during a two-year grant cycle, the program has helped twice that many companies raised more than \$7 million;

22 new KO-based companies were created;

Funded companies provided 125 area jobs;

7 proof of concept projects were funded for area technology start-ups and

Provided an average of \$20,000 as proof-of-concept investment.

Offer:

Information sharing, including process manuals, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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University of Missouri – Kansas City Innovation Centre
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Programme for the Strengthening of Entrepreneurial Culture in the University Community at the Autonomous University Corporation of Nariño
 Colombia
 2006 – Present
www.creaunsunar.blogspot.com

Coordinating Institution:
 Autonomous University
 Corporation of Nariño



The programme seeks to strengthen and drive the culture of entrepreneurship within the university community, comprising of students, faculty, administrative staff and graduates of the Autonomous University Corporation of Nariño. Its objectives include creating spaces that stimulate the entrepreneurial spirit, training professionals ready to lead and manage their own businesses or enterprising projects and strengthening entrepreneurship in vulnerable communities in the department of Nariño. The project is in a process of growth through two initiatives: the Regional Centre for Entrepreneurship and Business Undertakings, Autonomous University of Nariño; and articulation with different regional government and non-government groups so they may in turn finance and support these undertakings.

Results:

In total, some 600 students in different academic programmes have been trained in an entrepreneurial and business-oriented mind-set;

Five projects have benefitted from resources from the strengthening of such initiatives, of these, one is already a functioning business and the other four are under construction and

Prototypes and machinery have been developed to meet the needs of real productive sectors such as: guinea pig peelers, onion sprayers, coffee roasters, among others. These machines have in turn benefitted local farmers.

Offer:

Information sharing (from November 2014), teleconferences, videoconferences, workshops (between February and June 2015), technical tours and experts visits (during all of 2015).

Contact Information:

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Innovation Depot Technology Incubation Programme
 The United States of America
 1987 - Present
www.InnovationDepot.net

Coordinating Institution:
 University of Alabama at
 Birmingham (UAB)



The Innovation Depot is a technology centre and business incubation program that focuses on developing emerging biotechnology/life science, information technology, engineering and service businesses to facilitate technology commercialisation. It strives to diversify the local economy and be the catalyst for sustainable economic development in the Birmingham region through successful development of high-growth technology companies. Innovation Depot is the "hub" of all technology entrepreneurial activity and hosts the largest networking events for technology entrepreneurs in the Birmingham region. The programme is sustainable through a combination of self-generated programme income, private donations through annual fundraising, and committed funds from partners such as UAB.

Results:

The results over the last 5 years include:

Over 45 graduate companies;

Current clients and graduates had an employment impact of over 1500 jobs in the Birmingham region;

Over \$1.2 billion dollars in economic impact generated by clients and graduates;

93 high-growth technology companies are currently housed at the Innovation Depot;

67% of all recent University-based technology companies have been (or currently are) located at the Innovation Depot and

Current client companies operate in all 50 states and in over 40 countries.

Offer:

Information sharing, conference calls and technical and experts visits.

Contact Information:

Thomas Devon Laney
 President & CEO
 Innovation Depot, Inc.
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info@innovationdepot.net



FINNOVA
Mexico
2010 - Present
www.economia.gob.mx

Coordinating Institution:
Ministry of Economy



FINNOVA is a Joint Trust of the Ministry of Economy and the National Council for Science and Technology that seeks to promote innovation in Mexico through full or partial grants for innovation-oriented projects. Its objectives are to increase the pool of innovative companies in Mexico; to encourage the development of public goods or projects with high positive externalities that can drive innovation in the country; and to strengthen the link between the private sector and knowledge-generating institutions. On July 1, 2014, FINNOVA issued five new calls for proposals: innovation vouchers; vouchers for knowledge transfer; promoting the innovation ecosystem; fostering the skills to innovate, and support for the innovation projects of the companies who won the National Technology and Innovation Award. The calls will be completed at the end of this year.

Results:

To date, 183 Knowledge Transfer Offices have been created;

At the moment, there are 163 approved projects for the development of Public Goods to strengthen the innovation ecosystem;

There are 99 productive biotechnology projects and

There are 309 projects linking industry and academia (innovation vouchers; knowledge vouchers).

Offer:

Information sharing, teleconferences, videoconferences, workshops and technical and experts visits.

Contact Information:

Claudia Ivette García Romero
General Director for Innovation, Services and Commerce (DGISC)
Ministry of the Economy
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**University of Wisconsin -
Milwaukee Innovation Campus**
The United States of America
2010 - Present
www.uwmrealestatefoundation.org/innovationpark/default.aspx

Coordinating Institution:
City of Wauwatosa,
Wisconsin



UWM Innovation Campus is a public/private partnership designed to create a place where business and industry meets academic research to launch intellectual property for the new century. One of the main objectives has been to work together to create an economic development engine that not only provides jobs, but also a place to live, learn, work, and play. The Campus provides a setting for approximately 800,000 square feet of new development, while minimizing the environmental impact on the surrounding area. As a "third generation" research park, Innovation Campus offers technology transfer and business incubation services and incorporates the academic and research enterprise of the university directly into the development of a private sector park. As a big part of the Campus' focus, infrastructure construction utilizes sustainable best practices including: bio-filtration basins to prevent storm water run-off, LED street lighting to conserve energy and reduce night sky light pollution, traffic calming techniques, bike and pedestrian lanes; planting 219 trees; and restoring a natural prairie.

Results:

The estimated value of the projects currently underway, including the Innovation Accelerator, ABB headquarters, an apartment complex utilizing a portion of the historic Eschweiler buildings, and an extended stay hotel to accommodate Campus visitors, is almost \$61.3 million;

Total project value is estimated to exceed \$120 million and

The Campus will also create over 1,000 jobs for the region and will produce more than \$2.8 million in annual tax revenue.

Offer:

Information sharing, conference calls, videoconferences, and technical and experts visits.

Contact Information:

Paulette Enders
Development Director
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Component – Entrepreneurial Development Thrust – Micro and Small Enterprise Website

Saint Lucia
2009 – 2010
www.enterpriseslucia.com

Coordinating Institution:
Office of Private Sector
Relations (OPSR)



Enterpriseslucia.com is a website designed and developed to gather practical information to support and promote micro and small businesses (MSE) in Saint Lucia. The goal is to encourage MSE entrepreneurship and to increase competitive export products, therefore impacting in a positive way the national economy through the creation of employment and an increase in the national income. The OPSR was in charge of launching the initiative. Once it became successful, it was moved to the Small Enterprise Development Unit (SEDU) of the Ministry of Commerce to ensure its sustainability.

Results:

The main result has been the positive response and general collaboration that businesses and institutions provided by sharing the advantages and benefits of using the resources available on the website, consequently, after reaching out to the MSE sector, making the interaction possible.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Office of Private Sector Relations
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Suriname Business and Innovation Programme

Republic of Suriname
2014 – 2017
www.surinamecompete.org

Coordinating Institution:
Competitiveness Unit Suriname



This programme aims to formulate and implement a modern industrial policy to facilitate sustainable growth and diversification, to improve the business climate and the legal and institutional framework and to strengthen institutions and processes for effective public/private dialogue. Its objective is to increase the participation of the private sector in the economy and enhance its value added. A modernised legal and institutional framework will promote private-sector led growth, diversification and innovation and an adequate business climate with strong institutions will attract investors and lead to private sector activity and growth. The implementation, capacity building and reforms will be carried out within the framework of a development plan.

Results:

Stronger stakeholder collaboration;
Knowledge sharing and
Legislation drafted and submitted to Cabinet.

Offer:

Information sharing, conference calls and videoconferences.

Contact Information:

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Engineering Services and Business Counselling to Support the Western North Carolina Region

The United States of America

2012 - Present

www.wcu.edu/academics/departments-schools-colleges/Kimmel/index.asp

Coordinating Institution:

Western Carolina University,
Cullowhee NC



Through the Centre for Rapid Product Realisation, the Kimmel School at Western Carolina University (WCU) offers a full suite of prototyping services, including 3-D printing using a large variety of materials — including plastics and metal — for inventors, entrepreneurs, project sponsors and business partners throughout the Southeast and beyond. As a not-for-profit university centre, fees for service are set at the lowest possible rates so that the services may be available to all businesses and entrepreneurs. The Centre is focused on helping entrepreneurs develop and launch new products, resulting in economic growth through job creation and retention. The Centre also assists the clients with marketing planning and commercialisation strategies. The project is realised in partnership with the College of Business and the North Carolina Small Business and Technology Development Centre (SBTDC) and is partially funded by the Economic Development Administration (EDA).

Results:

From July 2013 to June 2014, the Centre reported results that exceeded the targets established for the region;

The Centre received 149 requests and counselled 85 clients;

Completed 55 projects and launched 16 new products;

223 jobs were created or retained and

The Centre received \$673K in new investment.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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pgardner@email.wcu.edu



Toolbox for SMEs

El Salvador

2012 - Present

www.minec.gob.sv/cajadedeherramientasue/

Coordinating Institution:

Ministry of Economy



The Toolbox is an information platform that seeks to become a knowledge management medium for the SME entrepreneur, to provide him or her with practical and necessary information on access to markets in the European Union, with the goal of generating potential businesses between the two regions. The platform receives committed support of top-level authorities, coordination with the SME-specialized private sector and with other government institutions, among others. With the economic support of the Central American Bank for Economic Integration (CABEI), work is underway towards updating the products that have been analysed on the web portal and on the relaunching of the initiative, combined with an impact evaluation process with similar platforms in other Central American countries.

Results:

This initiative is sustainable due to a number of national and international public institutions that collaborate on its implementation and have achieved effective inter-institutional coordination and

Coordination has been carried out with the SME-specialized private sector and with other government institutions.

Offer:

Information sharing, teleconferences [in 2014], videoconferences and workshops [in 2015].

Contact Information:

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Ministry of Economy
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seaman.jorge@gmail.com



Coordinating Institution:
Austen BioInnovation
Institute in Akron (ABIA)



The Innovative Solutions for Invention Xceleration (ISIX) is a project that aims to increase innovation and minimise the time from inception of ideas to commercialisation of new technologies by bringing together world-class scientists, physicians, engineers, researchers and entrepreneurs in the biomedical device/product and polymer science industries of Northeast Ohio. The goal of the ISIX project is to develop a collaborative entrepreneurial ecosystem among five institutions in order to increase the number of inventions commercialised and companies formed. As a metric, the ISIX process increased the number of invention disclosures from an average of three per year to about 100 per year among the three hospitals. The sustainability of the coordinating institution, Austen BioInnovation Institute in Akron (ABIA), comes from a mixture of membership, fees for service and grants.

Results:

ABIA has contributed to the creation of over 450 jobs over five years and

Invention Disclosures from the three hospitals have increased from an average of 3 per year in the previous decade (2001-2009) to 100 per year (2010-2013).

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Idea to Innovation (i2i)

Trinidad and Tobago
2012 - Present
www.i2it.com

Coordinating Institution:
Council for Competitiveness
and Innovation (CCI)



Funded by the Government of Trinidad and Tobago, the i2i Programme provides business and financial support, mentorship, and networking with other like-minded new entrepreneurs and experienced business people. Its objective is to facilitate the transformation of innovative ideas with commercial potential, or socially impactful ideas with potential to be economically sustainable, into demonstrations of real-world feasibility that can be moved on to create value. The programme provides grant funding via the Innovation Financing Facility (IFF), to allow people who otherwise would have great difficulty accessing funding at the pre-commercialisation stage. The target audience is adults in the 18-30 age range, although applications from the general public are accepted. Engaging with partner agencies and obtaining the support of high-level sponsors have been key to the success of this initiative.

Results:

Over the 2 year history of the programme, 103 projects have been awarded TT\$10.4 million in total grants:

- 2012 - 50 projects (from 400 applications) at TT\$4.7million
- 2013 - 53 projects (from 471 applications) at TT\$5.7million
- 2014 - 42 projects (from 493 applications) at TT\$4.3million

No. of awardees that have gone on to start new businesses based on their projects: 9

No. of awardees that are trying to start new businesses based on their projects: 19

No. of projects that constitute an innovative extension to an existing business: 4

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Council for Competitiveness and Innovation
kieron.swift@planning.gov.tt



TechHelp – Programme to Develop and Grow Idaho Manufacturers

The United States of America
2012 - Present
www.techhelp.org

Coordinating Institution:
TechHelp, Boise State
University



BOISE STATE UNIVERSITY

TechHelp works in partnership with the universities of Idaho to provide technical assistance and training to manufacturers, food and dairy processors, service industry and inventors to grow revenues, increase productivity and performance and strengthen global competitiveness. TechHelp uses a team-based network of experienced staff and proven partners from private industry, Idaho's Universities and the National Manufacturing Extension Partner (MEP) network to develop trusted and lasting relationships with Idaho local companies and communities. The programme provides regional manufacturers with best practices, training methods and consulting. Today, the program is funded 50% by federal and state funds, and 50% by private funds in the form of fees charged to participating companies. Each year the private sector investment in the TechHelp programme grows, which allows for investment in new and innovative services offered to help the region's manufacturers grow.

Results:

In the past two years, 200 projects were completed with over 100 companies. Over 90% of these companies reported a very high level of satisfaction with training and project assistance;

455 jobs were created and retained in the state in the past two years and

Idaho manufacturers have reported over \$1 Billion in sales, savings and investment over the past two years.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits, webinars and remote technical assistance.

Contact Information:

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TECH::HELP
SOLUTIONS FOR MANUFACTURERS



Commonwealth Centre for Advanced Manufacturing

The United States of America
2012 - Present
www.ccam-va.com

Coordinating Institution:
Commonwealth Centre for
Advanced Manufacturing



The Commonwealth Centre for Advanced Manufacturing (CCAM) transforms applied research into business advantages, bringing together manufacturers and Virginia's top higher education institutions to collaborate and deliver new "production-ready" solutions. Some of its main goals are to bridge the gap between fundamental research performed at universities and commercialisation performed in industry and to create and apply new technologies that solve problems identified by industry. The CCAM brings together industry, universities and government in a collaborative research environment with the facilities needed to demonstrate the industrial relevance and applicability of new technological developments. Its sustainability comes from long term support from corporate members.

Results:

CCAM currently has 19 industry members, 1 government member and 4 university members;

Research activities started in CCAM in 2012 and more than 20 projects are either ongoing or completed;

Three research projects have resulted in technologies that are ready to begin the process of commercialisation and

CCAM has more than \$6.5 million per year in research projects.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Programme for Software Industry Development (PROSOFT)

Mexico
2004-Present
www.prosoft.economia.gob.mx

Coordinating Institution:
Ministry of Economy



PROSOFT is a programme that aims to increase Mexico's competitiveness in the Information Technology sector (IT) primarily by promoting the adoption of IT from an innovative, market-oriented perspective. Some of its objectives are to stimulate the market by linking the demand and supply of IT products and services, to improve corporate culture on the issue of innovation and specialisation, and to stimulate the development and identification of competencies and skills for the sector. This year, the PROSOFT 3.0 Sector Agenda published along with a 10-year plan. The PROSOFT Fund includes support items aimed at generating projects which will increase the sector's competitiveness, such as training and certification, licensing and technological equipment, adoption of standards and quality models, and adoption and production of IT, among others.

Results:

Exports: The exporting companies supported by PROSOFT currently export 4 times more than other companies.

Quality: The PROSOFT-supported companies have 24% more probability of having an international certification.

Human Capital: More than half of the PROSOFT-supported companies improved up to 25% of their workforce through training and certifications; they also generated between 35 and 81 jobs.

Survival Rate: Companies supported for a period of 2 to 5 years are 26% more likely to survive than other companies.

Offer:

Information sharing, teleconferences, videoconferences, workshops and technical and experts visits.

Contact Information:

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Ministry of Economy
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Wall of Wind, Extreme Events Institute at Florida International University

The United States of America
Present
www.wow.fiu.edu/

Coordinating Institution:
Florida International University (FIU)



The 12-fan Wall of Wind at FIU is the largest and most powerful university research facility of its kind and is capable of simulating a Category 5 hurricane — the highest rating on the Saffir-Simpson Hurricane Wind Scale. This facility is advancing the understanding of hurricane impacts on buildings and other structures, while also developing innovative damage mitigation products and techniques for disaster risk reduction. FIU's Extreme Events Institute and its long standing collaboration with the USAID have also helped convene key stakeholders and promote disaster preparedness and relief management across the Americas and the world. Through continued partnerships and engagement with other countries in the Hemisphere, research at the Wall of Wind will continue and will provide more lessons in the upcoming years.

Results:

Through international consultations, FIU has assisted countries of the Americas mitigate potential loss and reduce risk of damage caused by hurricanes;

Building code provisions, particularly for the Miami-Dade High Velocity Hurricane Zone, have been revised and tightened in the last two decades based on lessons learned from previous storms;

FIU's Wall of Wind is helping to gauge how South Florida construction would fare in the face of a major storm and

By the fall of 2014, the Wall of Wind, in partnership with Miami-Dade County, will have completed tests on how well different building products hold up under different natural disaster scenarios.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Coordinating Institution:
Sandia Science & Technology
Park Development Corporation



SSTPDC was founded in 1998 to create and manage the development of the Sandia Science & Technology Park, a high-tech, pedestrian friendly business community adjacent to Sandia National Laboratories and the Air Force Research Laboratory in Albuquerque, New Mexico. SSTPDC's purpose is to create technology-based, high quality, high wage, and long-term jobs by fostering private sector investment and facilitating the recruitment of companies to the Park. Since inception, SSTPDC has been awarded federal and state government grants and in-kind contributions in excess of \$5 million. The 340-acre Park is now approximately 50% developed with 23 buildings and 33 companies and organizations occupying more than 1 million sq. ft. of office, laboratory and manufacturing space. The project is currently sustainable and is well positioned for additional continued growth.

Results:

Today, the Park is home to 33 companies and counts on 23 buildings with office, manufacturing, and laboratory space;

The Park provides jobs to 2,470 employees;

The Park also created 4,123 indirect jobs and

Since 1998, the Park has attracted over \$350 million in public and private investments.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Coordinating Institution:
Florence -Darlington Technical College



The Southeastern Institute of Manufacturing and Technology is the for-profit division of the Florence-Darlington Technical College. The objectives of the SiMT are to attract, grow and retain manufacturers and businesses in the Southeast, provide uniquely qualified students for employment and contribute to the establishment of a knowledge-based economy in the southeastern region. The SiMT offers a wide array of innovative, creative services to support businesses, for instance, rapid prototyping, advanced machining, 3D interactive production studio, advanced design engineering and much more. It also provides facilities and resources to incubate start-ups and can host conventions or other meetings in its Conference Centre. After seven years of operation, and the worst economic downturn in recent history, the SiMT is on track to generate a profit in the current fiscal year (2013-2014).

Results:

Since 2007, the SiMT has worked with more than 250 companies world-wide to enhance productivity and increase efficiency;

The Additive Manufacturing Centre added 23 new customers in 2013-14 and recently acquired a Direct Metals Laser Sintering (DMLS) machine to expand 3D printing capabilities to aluminium, stainless steel and other metals;

The potential pool of clients has increased significantly since October 2013, with the average number of visitors rising from 2300/month to 6400/month and

As of July 2014, every office space of the Gould Business Incubator has been rented to new and start-up businesses.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Entrepreneurship Reality Television Game Show – The Big Start, Office of Private Sector Relations

Saint Lucia
2010
www.thebigstartshow.com

Coordinating Institution:
Office of Private Sector Relations (OPSR)



Imagine learning how to build a business, from a TV reality show? The Big Start did just that. Trying to teach business basics to startup a company. The point of this show was to approach a wide audience and educate them about proper business management and motivate them to start their own business. The initiative was part of the Entrepreneurship Development Thrust plan that tries to stimulate the economy through new innovative businesses. Unfortunately because of the costly venture, the show only had one season. However, the episodes are used as study material for the Chamber of Commerce's Junior Achievement programme.

Results:

The Big Start game show covered 10 episodes in total, going from the selection of the participants and their idea, to the launch of the final prototype.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Office of Private Sector Relations
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Pilot Programme: Innovation for Firms in Suriname

Republic of Suriname
2014 – 2017
www.surinamecompete.org/

Coordinating Institution:
Competitiveness Unit Suriname



The objective of the Pilot Programme "Innovation for Firms in Suriname" is to support innovation and development of local firms, particularly Small and Medium Sized Enterprises (SMEs) by strengthening their integration into value chains and clusters and their linkages with bigger firms and potential investors and buyers. Through projects developed by groups of firms or clusters, the Programme aims to foster innovation, improve productivity and upgrade firms. The Pilot Program will be monitored and supervised by the Strategic Board of the Programme (SBP) that will also guide its strategic implementation and ensure coherence with the overall industrial development strategy of the country. The Programme was created within IDB loan SU-L1043, and is open to additional private and public contributions.

Results:

Improved Business Climate in Suriname;

Value Chain strengthened for the local markets;

Economic Diversification and more productivity from SMEs and

The programme is expected to receive public and private sector, as well as civil society contributions.

Offer:

Information sharing, conference calls and videoconferences.

Contact Information:

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Building a Water Technology Cluster and Fostering Entrepreneurship

The United States of America
2013 - Present
www.thewatercouncil.com

Coordinating Institution:
The Water Council



The Water Council was created to link together and leverage the existing water-related assets in the Milwaukee Region in order to build a world hub for water research, education and economic development. Its main goals are to build cross-sector and global research; develop programmes which train talent; solve the challenges within the international water space and foster new water-technology companies that would help shape the region in a world water hub. The Water Council has spawned the development clusters in the Milwaukee region with the creation of clusters focused on Energy, Power & Control as well as Food & Beverage. The Council has received strong support from the US Economic Development Administration, Wisconsin Economic Development Corporation, and also generates income from its annual Water Summit which is now in its 7th Year.

Results:

The development of the Global Water Centre is an important milestone as it established a highly visible base for The Water Council and a platform to grow Milwaukee's water technology cluster;

The Water Council has created the world's only water technology accelerator, driving engagement between seasoned water professionals, researchers, and entrepreneurs and

The Centre was developed by the BREW (Business-Research-Entrepreneurship-in Wisconsin) which is the first mentor-driven seed accelerator in the world that focuses on global freshwater challenges. The goal is to unleash unique water technology start-ups and create opportunities in the water industry for entrepreneurs.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Centre for Enterprise Development (CED), Caribbean Industrial Research Institute (CARIRI)

Trinidad and Tobago
2012 - Present
www.cariri.com

Coordinating Institution:
Caribbean Industrial Research Institute (CARIRI)



The Centre for Enterprise Development provides accommodation and technical and business advisory support services to individuals and enterprises wishing to take innovative ideas and projects through the incubation process to commercialisation. The Centre's objectives are to facilitate research, development and innovation capacity building and foster business creation and expansion through the provision of incubation infrastructure. It affords business incubator clients the opportunity to access business and marketing advisory assistance and financing, including, seed capital funding to improve capitalisation, increase productive capacity and enhance operational efficiency. Sustainability is achieved by securing sponsorship from Government and the private sector, equity participation in selected businesses that are clients and the institution of a fee structure for clients.

Results:

Establishment in 2014 of a Business Incubator Programme with 8 participants to date and a Business Hatching Programme with 13 participants to date;

Institution of a funding facility for business incubator clients, with a governance structure involving representatives from the public and private sectors;

Operationalisation of a Mobile Application Development Centre, i.e. Centre and Living Lab in January 2014, with two promotional events held to date and

Development of strategic partnerships with Digicel, Microsoft and Massey Technologies.

Offer:

Information sharing, conference calls, workshops and technical and experts visits.

Contact Information:

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Advanced Manufacturing and Prototype Centre of East Tennessee

The United States of America
2013 - 2016
www.amptn.com

Coordinating Institution:
Technology 2020



The AMP! Project is a result of a multi-governmental agency award with four partners: Technology 2020, University of Tennessee Centre for Industrial Services (UT-CIS), Pellissippi State Community College (PSCC), and the Oak Ridge National Laboratory (ORNL). AMP! provides leadership, as it has become the mechanism that connects colleges with industry, students with mentors, industries with entrepreneurs and suppliers with manufacturers to accelerate job growth and development in the region. Together with Technology 2020, the AMP! Project has assisted over 100 advanced manufacturing projects in Tennessee. They also inaugurated a prototype centre, ran three boot camps for ten small manufacturers, held the FIRST Robotics Student Competition in Knoxville and created a network of regional manufacturers (RAMP) of over 400 people, among other initiatives. Technology 2020 and AMP! received grants from the Economic Development Administration (EDA) and the Department of Education.

Results:

Creation of RAMP network of regional manufacturers;

50 teams of students participated in the FIRST Robotics regional student competition from 7 states. In total 279 volunteers, which included principals, mentors, parents, students, judges, builders, and support staff, provided more than 14,117 hours;

Pellissippi state has added new faculty and recruited new students for the additive manufacturing certificate and

Technology 2020 and ORNL have worked on at least 154 manufacturing projects. Their efforts helped to create 15 new small businesses and 33 new jobs.

Offer:

Information sharing, conference calls, workshops and technical and experts visits.

Contact Information:

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Technology 2020
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Advanced Manufacturing
& Prototyping Center



Small Business Network of the Americas, Extending the Small Business Development Centre Model to LAC Markets for SME Development and Trade

The United States of America
2013 - 2014
www.sbdcglobal.com/index.php/tn/international-ab-do-tun.html

Coordinating Institution:
University of Texas at San Antonio
on behalf of US Department of State

Institute for Economic Development
The University of Texas at San Antonio

The international SBDO model expansion throughout Latin America and the Caribbean is designed to create a hemispheric network of SBDOs that would improve SMEs competitiveness, generate new trade opportunities and promote the economic integration of the region. One of its main goals is to advance SME competitiveness and trade across LAC via adaptation, implementation and SME market connectivity by applying the Small Business Development Centre model in participating countries. Sixteen LAC countries to-date have elected to pursue SBDO model implementation, adapting the best practice and results-oriented model to their country context. ROI methodology calculates marginal sales and job growth, generating public sales and employment tax revenues exceeding public SBDO expenditures for fiscal sustainability.

Results:

30 SBDOs/ODMYPE centres operating to-date, 20 more coming on-line in 2015;

165 professional SMEs business advisors staffing 30 Centres, 42% men and 58% women, among over 900 LAC development professionals from the SMEs ecosystems trained in SBDO methodology;

Over \$18.6 million operational funding from the government and partners leveraged to-date, as compared to \$1.6 million of US cooperation for technical assistance, model transfer training and capacity-building- a positive 12-1 leverage that will grow as networks mature and sustain long-term impacts.

138 Institutional partners collaborating to host local SBDOs, 14% public, 68% private and 17% academic.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical, experts visits and network building and facilitation.

Contact Information:

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Development Centres for Micro and Small Enterprises

El Salvador

2010 - Present

<http://www.conamype.gob.sv/index.php/servicios/guia-de-servicios/servicios-cdmype>

Coordinating Institution:

Ministry of Economy through National Commission of Micro and Small Enterprises (CONAMYPE)



The Development Centre for Micro and Small Enterprises (CDMYPE, for its acronym in Spanish) is an initiative created to strengthen and promote growth of the SME and the Micro and Small Enterprises (MSE) sectors of the economy, giving them proper training and advisory services. The initiative follows a similar model from the United States called Small Business Development Centre (SBDC). The model is based on a public, private and academic partnership from which the MSE can benefit by having access to infrastructure, information, workshops, technology as well as several other benefits to support their progress. The government has given support to the CDMYPE and has provided funding from the national budget.

Results:

Financial and technical impact on business measured through several indicators such as increased sales, employment, paid taxes, etc and

The results to June 2014 have been so far: 9,438 SME Units received assistance and advisory services, national sales increased by \$15.9 millions and 4,822 new jobs have been created.

Offer:

Information sharing, videoconferences, workshops and technical and experts visits.

Contact information:

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DEVELOPMENT OF HUMAN CAPITAL

Note: for further information on the complete versions of interviews, contributions, and experiences shared by RIAC members, institutions and programmes (including footnotes and citations) please visit www.riacreport.org



Young Scientists Programme

Panama
2013 - Present
www.senacyt.gob.pa

Coordinating Institution:

National Secretariat of Science,
Technology and Innovation (SENACYT)



In Panama kids ages 13 - 17 are being taught about the correct application of the scientific method through a competition where they can carry out small, low-cost experiments while receiving expert mentoring. The goal of this programme is to activate children's interest for science and technology. A panel of judges evaluates the projects and selects the best for a special prize.

Results:

In the first call, 140 projects were presented, 43 of them came from public high schools. About 337 young students participated (173 girls and 164 boys) supported by 50 scientist who acted as mentors and helped participants with their experiments and

Projects were focused on various areas such as environmental science, health, social science, engineering, technology, mathematics, computer science and basic science.

Offer:

Information sharing, conference calls and videoconferences.

Contact Information:

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Public-Private Partnership Engineering Elementary Education in Impoverished Neighbourhood

The United States of America
2010 - Present
www.greenville.k12.sc.us/sjw

Coordinating Institution:

A. J. Whittenberg Elementary
School of Engineering



A. J. Whittenberg Elementary School of Engineering is a public school in a highly distressed urban area of Greenville, SC, which uses a unique engineering- focused curriculum to provide children with a world-class education. Intense professional development for teachers helps to assure the success of the school's Engineering Approach which guides all academic activities. Through public-private partnerships, AJW pairs businesses' needs with urban planning and public educational goals to break the cycle of poverty for children in the school. Business partners are actively courted and given visibility of programme results. The school is also constantly forming new partnerships and connections with the community. Sustainability comes from constant examination of its curriculum and programmes paired with a willingness to change, improve and adjust in order to maintain a climate of continuous improvement.

Results:

The School received the only perfect "A-100" in the entire district in the first school report card issued by the US Government as part of the Federal Accountability Act;

It consistently earns an "A" on federal rankings and the highest state ranking possible, Palmetto Gold, for achievement;

Well over 90% of students score at or above benchmarks in all core subjects;

Its fourth grade FIRST Lego Robotics League team was invited to compete internationally against students up to age 16 from 35 other countries and

AJW teachers have been honoured with the nationally recognized Milken Award, Fulbright International Scholarships and a slot at Space Camp for Educators in Huntsville, Alabama.

Offer:

Information sharing, conference calls, and technical and experts visits.

Contact Information:

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Caribbean Youth Empowerment Project (Phase 2)

Saint Lucia
2008 - Present

Coordinating Institution:

National Skills Development Centre (NSDC)



The Caribbean Youth Empowerment Project (CYEP) is a programme that helps to improve the life of vulnerable and troubled youth in Saint Lucia through education and proper skills training. The project's main goal is to contribute to their personal and professional development in order to prepare these youths to play positive roles and engage in a sustainable livelihood. The project will train 150 youngsters in vocational areas which are in demand by the labour market, expecting that at least 40% of them will find an occupation. Several institutions, in both the public and private sectors, support this programme as the Centre of Adolescent Renewal and Education (C.A.R.E), National Community Foundation and they are currently associated with the James Belgrave Micro Enterprise Development Fund Inc. (BELfund) which implements entrepreneurship projects.

Results:

The project has had a large support base in both the public and private sectors. It has been an open door to relegated youth and many companies in St. Lucia are now working in partnership with institutions involved with vulnerable youth;

The most relevant results have been the partnership of key stakeholders of the project, collaboration with public and private sectors, partnership with institutions involved with vulnerable youth, internship programmes and financial support from key agencies such as the National Community Foundation.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Creation of a Virtual Education Programme 'Pan Online': Pilot Project at Success-Laventille Secondary School

Trinidad and Tobago
2012 - 2016

Coordinating Institution:

Sanch Electronix Ltd



The Pan In Education Business Model (PIE) is a proprietary learning application incorporating Information and Communications Technology (ICT), indigenous rhythms and national musical instruments, designed for training and enhancing the skills of persons in the music industry. PETE the Panstick is an animated, self-instructional interactive Steelpan-teaching programme, delivered through a blend of traditional and virtual instruction. The Project's objectives are to offer PIE in secondary schools in Trinidad and Tobago through Pan Online and to make the programme accessible to the Caribbean and its Diaspora and all learners globally who are not able to access on-site instruction. PIE and PETE are vehicles for creating new sustainable avenues for employment in the Steelpan industry, for earning foreign exchange in the US \$30 billion global music industry and for enabling cultural innovation and business growth in the productive sector along the value chain.

Results:

Installation of equipment for Pilot Project at Success Laventille Secondary School. Project to be launched in October 2014;

Production, mastering and replication (1000 units) of the OD 'Legacy of Excellence'. This was a cross-curriculum learning lesson in musical arrangement & production, recording & mastering, technical writing, financial management, marketing & entrepreneurship for the 35 students involved in the Pilot Project. The sale of ODs will raise funds to support the Project;

'Pan Online' international Video Conference was held at the Organization of American States' VIRTUAL EDUCA 2014 Conference and

25 members of the Success Stars Pan Sounds toured Mexico in March 2014 on the invitation of the Trinidad and Tobago Ministry of Arts and Multiculturalism and its Mexican counterpart.

Offer:

Information sharing, conference calls, videoconferences, workshops, technical and experts visits and network building and facilitation.

Contact Information:

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BioSTL – Collaboratively Building Regional Entrepreneurial Capacity for the Continued Growth of the St. Louis Biosciences

The United States of America
2011 - 2019
www.biostl.org

Coordinating Institution:
BioSTL



BioSTL's core programmes build regional capacity for the continued growth of St. Louis' bioscience assets. It also organises and convenes public/private collaboration to attract resources. For this initiative, BioSTL convened partners to secure the Jobs and Innovation Accelerator Challenge (JIAC) — with the aim of bolstering St. Louis' capacity to attract and retain a quality, diverse workforce for its growing bioscience community. St. Louis' JIAC was one of only 20 projects awarded nationwide and the only one dedicated to a bioscience cluster. The programme is supported both by public and private institutions.

Results:

On-The-Job workforce training partnership with the St. Louis Agency on Training and Employment (SLATE) placed 54 individuals in new bioscience jobs with small, emerging companies;

The BioGenerator's 13 Entrepreneurs - in - Residence played an active management role in 31 companies, provided expert mentoring to 70 early stage companies and delivered major technical and business support to 17 companies and

In the first year and a half, 54 BED (Bio Entrepreneur Development) Programme participants created 35 ventures. These early stage startups resulted in the creation of 96 new jobs.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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BioSTL
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Project 17 The United States of America 2012 – Present www.twspj17.org

Coordinating Institution:
Kansas State University



Founded with political leadership and a broad coalition of over 800 citizens from 17 counties in Southeast Kansas, Project 17 is an initiative aiming to improve the economic conditions of its region. The Project tackles concrete problems such as the lack of high speed internet services, the need to create a supportive entrepreneurial ecosystem, the need for a healthier workforce, combating high substance abuse, promoting Science, Engineering, Math, and Technology education and linking the needs of businesses to the K-12 and post-secondary schools in the region to ensure that students receive an education that meets the needs of the region's employers. Project 17 enables the region to reflect on its position in a larger context, both nationally and globally. Since 2012, the region has begun to strive to level the playing field and citizens have come to understand that their future is not predetermined by their region's history or rural characteristics.

Results:

Over 800 citizens were engaged in one year;

Creation of 4 working groups, 16 task teams and one "core group" serving as a board of directors to tackle regional problems;

An Innovation Summit was held in the region;

A new technical education centre is being created for K-12 students and unemployed adults;

An event helping businesses sell products online was held;

The first community Fab Lab in Kansas was created;

The Project trained 124 leaders to be more effective when they exercise leadership in their community to improve economic conditions;

The Project received the federal Investing in Manufacturing Community Partnership Designation and

The project gave the opportunity for the K-12 education community, the community colleges in the region and the business community to come together for discussions for the first time.

Offer:

Information sharing, conference calls, videoconferences and technical and experts visits.

Contact Information:

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Inter-Institutional Programme for Academic Talent Follow up (PISTA)

Panama
2013 - Present
www.senacyt.gob.pa

Coordinating Institution:

National Secretariat of Science, Technology and Innovation (SENACYT)



Pista is a pioneer programme specially designed to identify, develop and mentor academically talented children through a school enrichment programme. The goal is to seek out talented children and provide them with tailored courses. First, Pista selects potential high-achieving students from 7th to 9th grade and offers them specially designed classes with highly qualified professionals with PhD or Master's degrees. The University of Panama together with the SENACYT are responsible for the quality of education, the selection of facilitators and mentors and designing the curricula and the required infrastructure. The programme provides each student for 3 - 4 years with grants and funding to cover tuition (100% in public schools and 70-100% in private schools based on needs assessment), transportation, meals, materials and the opportunity to learn other languages.

Results:

In the pilot programme, 227 academically talented young students (105 girls and 122 boys) participated, coming from both public and private schools. The students were supported by 20 mentors with PhD background, 12 with a masters degree and other experts. The areas covered included science, engineering, language, TICs, mathematics, arts and sports.

Offer:

Information sharing, conference calls, videoconferences and technical and experts visits.

Contact Information:

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REGULATORY FRAMEWORK, BUSINESS CLIMATE AND TRADE

Note: for further information on the complete versions of interviews, contributions, and experiences shared by RIAC members, institutions and programmes (including footnotes and citations) please visit www.riacreport.org



Programme to Strengthen the Competitiveness of the Tourism Industry through Product Development, Human Resources Development, Standards Implementation and Destination Marketing Support

Saint Lucia
2013 - Present
www.saintluciatef.com

Coordinating Institution:
Saint Lucia Hotel and
Tourism Association



The Tourism Enhancement Fund (TEF) is a voluntary fund set up by the Saint Lucia Hotel and Tourism Association Inc. (SLHTA) to contribute to projects and activities that will add value to the local tourism industry. The fund was proposed by the SLHTA Secretariat as a means of allowing them the opportunity to actively influence and play an integral role in tourism enhancement in partnership with public sector agencies involved in Tourism development. The TEF is funded by contributions from private and public institutions, as well as voluntary contributions made by guests of the accommodation sector via an additional charge of USD \$2 per room per night, added to their bill at check out.

Results:

Through the fund, the SLHTA drives a number of initiatives such as marketing support for small hotels via www.bookstlucianow.com; the upskill of human resources through an after-school support programme, foreign language training for hospitality workers and an entrepreneurship training programme for marginalised youth and

The fund has contributed to many activities such as the relocation and refurbishment of the Canaries Infant School and donations of food and supplies to make a greater impact on the local community.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Intra-Provincial Programme

Córdoba, Argentina
2014 - Present

Coordinating Institution:
Ministry of Industry, Commerce,
Mining and Scientific Technological
Development of Córdoba



The Intra-Provincial Programme focuses on increasing the supply of products and services within the province of Córdoba, Argentina. Its objective is to foster fruitful relations and partnerships between local businesses and help them identify common suppliers within the province, which in turn contributes to increasing the competitiveness of the region and facilitates the resolution of logistical and technical problems. The program enables small and medium size businesses to diversify their customer base and facilitates the development of new products. The main activity in which the coordinating institution and the Chamber of Metallurgical Industries of Córdoba collaborate is the organization of business round tables to facilitate contact between producers and potential suppliers at a provincial level. The simplicity, effectiveness and low cost of the activities carried out by the programme are fundamental to ensure its sustainability in the long-term.

Results:

The Ministry created various Round Tables and/or Chambers for each business sector of the province of Córdoba and organised business meetings for companies to explore possible avenues of collaboration.

This initiative helped to identify common objectives, thus strengthening the work relations within each sector as well as among different sectors and

The Ministry serves as coordinator and facilitator on a number of tasks that range from contacting companies and paying a group coordinator to facilitate the round tables, to the provision of a physical location for conducting business meetings.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits (from August 2014 to December 2015).

Contact Information:

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Technological Development of Córdoba
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Intra-National Programme

Córdoba, Argentina
2014 – Present



Coordinating Institution:
Ministry of Industry, Commerce,
Mines and Scientific and Technological
Development of Córdoba



The Intra-National Programme is aimed at all industrial enterprises within the province of Córdoba, Argentina, who are interested in marketing their products outside the province and within the country. Its main objective is to strengthen the supply of products and services in the province of Córdoba, by supporting the growth of trade and investment, as well as the creation of strategic alliances and the diversification of the client portfolio nationwide. In the few months that this program has been in place, there has already been an increase in the number of local companies that are making strategic partnerships with other companies in the rest of the country.

Results:

Five trade missions have been carried out in different parts of Argentina: Neuquen, Salta, Tierra del Fuego, and Zereté Comodoro Rivadavia, allowing numerous companies of the province of Córdoba to engage in relationships with companies from these provinces; and many of them have already started doing business with them;

Linkages with relevant stakeholders at a national level and

Training session on the oil industry, conducted before the mission to Neuquén.

Offer:

Information, teleconferences, videoconferences, workshops and technical and experts visits.

Contact Information:

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Programme to Develop an Online Import Monitoring Module

Saint Lucia
2013 - 2014

<http://ew.customs.gov.la/ewolient/>

Coordinating Institution:
Ministry of Commerce, Business
Development, Investment and
Consumer Affairs



The Online Import Monitoring Module is the automation of the Import Licence process designed to reduce time, costs and number of procedures. The project's goal is to improve the effectiveness and efficiency of processing goods requiring an import licence by reducing the transaction cost of importing goods by 50%. The OIMM uses ASUCYDA World software administered by the Customs Department and the system was designed by Ministry officials who are the users of the system. The initiative of automation can be improved and duplicated by other government agencies or the private sector.

Results:

The system was piloted for a few months and it reduced the number of procedures for obtaining an import licence:

-from five to two- and also cut the average time taken
-from two days to less than one;

These results are likely to impact on Saint Lucia's performance on the World Bank's Ease of Doing Business through the Trading Across Borders indicator.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Miempresa.gob.sv

El Salvador
2012 - Present
www.miempresa.gob.sv

Coordinating Institution:
Ministry of Economy



MiEmpresa.gob.sv
trámites empresariales en línea

El Salvador has launched a project focused on helping and encouraging people to register their businesses. One of the goals is to facilitate the procedures and access to information in order to increase the formalisation of enterprises. UNCTAD and other institutions have helped by designing and implementing the program supported by the National Bureau of Investment within the Ministry of Economy.

Results:

The first stage of this programme was launched on May 2012 achieving the reduction of time on specific procedures.

Due to the success of the programme a second phase was launched on April 2013, including start-up procedures for corporations and limited liability companies and

The initiative has opened to date, a total of 17 customer service offices nationwide to provide advice to the entrepreneurs and business owners.

Offer:

Information sharing, conference calls, videoconferences and workshops.

Contact Information:

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Chief of Competitive Intelligence
Ministry of Economy
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Programme to Develop a Public-Private Partnership Policy Framework for Saint Lucia

Saint Lucia
2013 - Present

Coordinating Institution:
Ministry of Finance, Economic Affairs & Social Security/
Technical Secretariat of the National Competitiveness & Productivity Council

The Public-Private Partnership (PPP) is a cooperation programme essentially shaped to provide and improve infrastructure projects around the island. This collaboration between public and private sectors will optimise their financial and technical resources towards the integral development of St. Lucia. The partnership is done through the introduction of well-defined policies and institutional frameworks for managing PPP projects in Saint Lucia. The initiative is part of the Government's plan to diversify the financing of its infrastructure.

Results:

The PPP is expected to bring results in the near future.

The island will have better infrastructure, which in turn will contribute to enhance competitiveness.

Offer:

Information sharing, conference calls and videoconferences.

Contact Information:

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Productivity Council Technical Secretariat
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Coordinating Institution:
Inter-American Development Bank,
Suriname Business Forum and the
ASFA Manufacturers Organization



By defining new laws, modernising and harmonising existing laws and engaging in stakeholder consultation, this programme aims to improve the business climate in Suriname by strengthening and enabling the business environment. The programme is two-fold, including both legal reform and institutional support. Stakeholders include the Ministry of Trade and Industry, the Ministry of Justice, the drafting team and the Competitiveness Unit Suriname. To make the Programme sustainable, its implementation, capacity building and reforms will be applied within the framework of a development national programme.

Results:

- Stronger stakeholder collaboration;
- Increased knowledge and knowledge sharing;
- Non-existing drafts were finalized and submitted to parliament and
- Involvement of private sector to define priorities.

Offer:

Information sharing, conference calls and videoconferences.

Contact Information:

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Coordinating Institution:
Technical Secretariat,
National Competitiveness and
Productivity Council



The many delays and bottlenecks associated with the legal part of commercial matters have caused the Government of Saint Lucia, in association with the Compete Caribbean Programme, to design and establish a Commercial Division in the country's Courts. The purpose of the new service is to increase efficiency in the court system, to help create a better business environment and improve the 'enforcement of contracts' indicator that according to the World Bank's Doing Business Report is continuously ranking low. The project consisted of two main phases: the design and the operationalisation of the Division. Both steps are funded and supported by the Compete Caribbean Programme, in coordination and special consultancy with other institutions.

The Government of Saint Lucia has provided support and financing for the establishment of the Court's Commercial Division. It is expected that the Division can be financially self-sustained through court fees in the future. The court is expected to be fully operational by March 2015.

Results:

The expected results from this Division are that the overall business environment can become more efficient and transparent, attracting FDI and supporting the private sector.

Offer:

Information sharing, conference calls and videoconferences.

Contact Information:

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ENERGY

Note: for further information on the complete versions of interviews, contributions, and experiences shared by RIAC members, institutions and programmes (including footnotes and citations) please visit www.riacreport.org



Energy Production and Infrastructure Centre (EPIC)

The United States of America
2012 - Present
<https://epic.uncc.edu/>

Coordinating Institution:
University of North
Carolina at Charlotte



The Energy Production and Infrastructure Centre at UNO Charlotte is a collaborative, multidisciplinary effort to unite the academic and research expertise of the University with the great wealth of energy and engineering skills in the Charlotte region. Through sponsored research, scholarships, internships, and various technical services, EPIO has aligned itself with over fifty energy-related companies nationally and internationally. It has also partnered with two business incubators to bring new technology to market. EPIO provides training for the workforce, develops and advances technology, and facilitates strategic industry-university collaboration for the global energy industry, while supporting the Carolinas' development of economic and energy security. EPIO also partners with other universities to promote collaboration and resource sharing.

Results:

EPIO's success led directly to the decision to create an Energy-Focused Early College High School on the UNO campus. The first 100 ninth graders reported to school in August of 2014;

EPIO has positioned itself to be a regional, national, and international collaborator for the energy industry and

Over 100 K-12 STEM educators from across North Carolina have visited EPIO and been provided award-winning energy-education materials.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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bguessfo@uncc.edu



Universal Access to Energy (LPG) for Vulnerable Populations: Social Compensation and Promoting Access to LPG

Peru
2012 - Present
www.fise.gob.pe

Coordinating Institution:
Energy and Mining Investment Watchdog



The Programme seeks to promote the use of LPG and replace combustibles such as firewood, dung, charcoal, among others, to contribute to the sustainability of the environment and to improve the health and quality of life of Peruvian homes in vulnerable situations. Driven by the Social Inclusion Energy Fund (FISE, for its acronym in Spanish), this programme entails the participation of the State as issuer of norms for its operation, of Electrical Distributors as those in charge of FISE management, and of LPG marketers to facilitate the delivery of discount coupons to participating homes for access to less pollutive energy. The use of digital discount coupons has been implemented through cellular banking, which means greater use of telecommunications technology and higher rates of banking.

Results:

By June of 2014, already 823,292 people had been registered at the national level and could cook their food in a healthier way;

Small businesses in the sector have been created thanks to the promotion of the creation of LPG marketers; and

With the use of technology, such as cellular banking, it was possible to involve micro-business owners in the rural and urban-rural sector in the financial system as a tool of social, technological and energy inclusion.

Offer:

Information sharing, teleconferences, videoconferences, workshops, technical tours and experts visits (beginning in August of 2014).

Contact Information:

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egarcia@osinergmin.gob.pe



Fraunhofer Centre for Sustainable Energy Systems (CSE)

The United States of America
2008 - Present
cse.fraunhofer.org

Coordinating Institution:

US Department of Commerce's
Economic Development
Administration (EDA)



Fraunhofer CSE is a non-profit applied research and development laboratory. CSE's mission is to foster economic development through the commercialization of clean energy technologies for the benefit of society. Fraunhofer, located in Boston, Massachusetts, occupies a unique niche in the economic development landscape, operating at the intersection of industry, government and academia to promote building energy efficiency. In the United States, buildings are responsible for over 40% of energy usage nationwide. Therefore, energy efficiency initiatives are key to reducing humans' impact on climate change. In 2013, Fraunhofer completed construction and moved into its Living Laboratory - a R&D centre born out of a 100-year-old building. The main objective of the Living Laboratory is to accelerate the adoption and acceptance of cutting-edge building energy technologies in Massachusetts and the United States. The Lab leverages design concepts and historic architecture alongside in-house research facilities, including a pilot solar module fabrication line, dedicated thermal testing laboratory, and extensive environmental testing resources to further promote the growth of clean energy technologies. Fraunhofer welcomes collaboration with partners from all sectors; it regularly hosts public tours of their building facilities, and welcomes visitors from all professional trade associations, international delegations and non-profit organisations.

Results:

Created over 170 direct jobs and hundreds of indirect jobs;

Provided workforce training for more than 100 young technologists and entrepreneurs;

Supported over 30 early stage clean tech companies, who have since collectively raised over \$67 million in follow-on funding;

Filed and licensed several patents;

Acted as a Research Team Leader for the US Department of Energy's Building America programme and

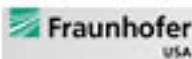
Established a Living Laboratory for building technologies and energy efficiency in Boston's Innovation District.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

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Houseboat to Energy Efficient Residences (HBEER)

The United States of America
2009 - Present
www.uky.edu/design/index.php/

Coordinating Institution:

Kentucky Highlands
Investment Corporation



The Houseboat to Energy Efficient Residences (HBEER) project was created in 2010 with three objectives: 1) revitalise the houseboat manufacturing industry in Kentucky to save and create jobs; 2) develop a potential new product line of energy efficient modular homes and 3) establish collaboration between design, financing and manufacturing partners. The project consists of pairing graduate students of UK College of Design architecture with Stardust engineers to design numerous modular residences that incorporate readily available energy efficient technologies into their designs. Students provide the design and Stardust is responsible for building the modular residences. Through this project, around 100 architecture students learned how to apply design theory and energy systems modelling to real-world design challenges. Today, the HBEER project and Stardust are considered national leaders in houseboat manufacturing.

Results:

Within four years of implementation of the project, Stardust's employment grew from 12 full-time employees to nearly 70 employees;

For the past few years, nearly half of Stardust's sales have been exports to Europe, Asia and the Middle East, which is something the company did not anticipate;

In the spring of 2011 when many architecture firms were laying off staff, 100% of UK College of Design architecture graduates who participated the HBEER project were hired because of their comprehensive, reality-based work experience and

The project attracted over \$750,000 (including a \$252,000 EDA grant) to support UK College of Design, Research and Development work related to energy efficient modular structure design.

Offer:

Information sharing and conference calls.

Contact Information:

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Sustainable Northern Communities Centre (SNCC)

The United States of America

2014-2015

www.cchrc.org/

Coordinating Institution:

US Department of Commerce, Economic Development Administration (EDA)



The Sustainable Northern Communities Centre is a collaboration platform for housing authorities, governmental entities, private sector companies and individual communities of Alaska to reduce construction costs, create healthy living environments, stimulate local economies, and ensure regionally appropriate design in Circumpolar climates. The Centre works with numerous partners, including the Cold Climate Housing Research Centre (CCHRC), to develop new cost-effective and efficient building techniques and apply them in prototypes across Alaska, from single to multiple family residences. It also provides training for professionals and the general public on the construction and operation of high-performance buildings. Through lowering energy costs, minimizing the amount of resources needed to build and heat homes and creating local capacity, the SNCC creates sustainable development not only at the economic and environmental level but also at the cultural level.

Results:

CCHRC has developed more than a dozen prototype houses throughout Alaska which provide affordable, super-efficient, climate-appropriate housing. Monitoring the performance of these homes has shown an 80% reduction in energy use and 30-50% savings in construction;

12% of Alaska's total housing stock has been retrofitted through a State programme;

CCHRC has also been instrumental in developing a housing needs assessment that informs policy and decision makers of the current condition and priorities for action and

SNCC projects also focus on retrofitting existing homes and buildings to improve their energy performance and extend their service life, which provides returns to homeowners and communities into the future.

Offer:

Information sharing including building plans, construction manuals, detailed instructional videos and integrated design; consulting including energy modelling, plan review and building recommendations; conference calls, videoconferences, workshops and technical and experts visits.

Contact Information:

Jack Hébert
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Cold Climate Housing Research Centre
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EXPERIENCES SHARED BY INSTITUTIONS AND PROGRAMMES

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Coordinating Institution:
National Institute of Women –
Ministry of Social Development



The Model "Quality with Gender Equality" (QGE) is looking for public and private organisations of more than 50 people to integrate elements of gender equality into its management. The objective of the programme is to optimise staff skills, increase organisations' efficiency and competitiveness, and contribute to social justice. This model is certifiable through annual audits and organisations may be awarded with the certification stamp of "Quality for Gender Equality". This certification was created to transform working environment structures, human resource management and the culture of organisations. The QGE counts on the support and commitment of the Government of Uruguay and the United Nations Development Programme (UNDP).

Results:

The following organisations were certified and continue to set the direction of quality systems with a gender equality perspective:

National Administration of Electricity Plants and Transmission (UTE);

Sanitary Works (OSE);

National Ports Authority (NPA);

National Telecommunications Administration (ANTEL).

In certified organisations, the following results were highlighted:

The participation of women in male-dominated sectors increased;

More presence of women in positions of increased responsibility and hierarchy and

Documented procedures and actions have been put in place to prevent, monitor and respond to situations of sexual harassment, domestic violence and gender inequalities.

Offer:

Information sharing, workshops and technical and experts visits.

Contact Information:

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Coordinating Institution:
National Council of Science,
Technology and Technological Innovation



The L'ORÉAL-UNESCO-CONCYTEC National Prizes are two grants worth up to 45,000 Nuevo Soles each, awarded to Peruvian women conducting scientific research in the areas of life science, biological sciences and health sciences. The general objective of this initiative is to promote the production of new scientific and technological knowledge in strategic priority areas defined by L'OREAL S.A. Peru and consistent with the priority areas of the CONCYTEC in its National Strategic Plan of Science, Technology and Innovation for Competitiveness and Human Development 2006-2021. Through this, the CONCYTEC also seeks to reverse the current situation in which 75% of the leaders of research projects funded by "Peruvian funds" are men while only 25% are led by women. To date, the competition has been sustainable through the contributions of all parties. The experience has been very well-received by the scientific community, and it is expected that the number of beneficiaries will increase over the years, thus generating new knowledge to enhance the competitiveness of the Peruvian economy.

Results:

Since 2008, 12 Peruvian scientific women have been awarded with the National Prize;

The projects presented have had a positive impact on problems solving, providing new insights and especially new innovations which in turn contributed to enhance competitiveness in the region and

In 2014 L'OREAL Peru will award 2 grants with a maximum amount of 45,000 Nuevo Soles. This represents an increase from the 2008 to 2013 prizes whose maximum amounts were set to 30,000 Nuevo Soles.

Offer:

Information sharing.

Contact Information:

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University Programme to Support Patent Filing and Technology Transfer

Mexico
2011 – Present
www.ditoo.buap.mx

Coordinating Institution:

Benemérita Universidad Autónoma de Puebla (BUAP)



This programme supports patent filing and technology transfer in Puebla. Its main objective is to contribute to improving the competitiveness and innovation of the production and service sectors of the region and the country, through the application and transfer of advances and innovations in knowledge; the provision of technological services; relevant, high quality studies, and the protection of intellectual property (IP) created at the university. The program includes campaigns to promote an IP and Technology Transfer culture at the University; technological mapping and forecast and calls for patent filing among academic and administrative personnel who have materials, products, designs or technological processes liable to be protected through patents

Results:

Creation of BUAP's Technology Transfer Office;

A substantive increase in the number of patents obtained by BUAP, from two in 2007 to 41 in 2012, and 21 in 2014;

Among the country's universities, BUAP ranks third in number of patents obtained, after Tec de Monterrey and UNAM and

Incorporation of BUAP as a key player in the regional innovation system.

Offer:

Information sharing, teleconferences, videoconferences, workshops, tours and experts visits.

Contact Information:

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The Compete Caribbean Programme Donor Collaboration to Support Private Sector Development & Competitiveness in the Caribbean CARIFORUM member states

2010 – Present
www.competecaribbean.org

Coordinating Institution:

The Compete Caribbean Programme is jointly funded by the Inter-American Development Bank (IDB), the United Kingdom Department of International Development (DFID) and the Foreign Affairs, Trade and Development Canada (DFATD) and operates in partnership with the Caribbean Development Bank (CDB).

The ultimate goal of the programme is to foster sustainable economic growth and enhance competitiveness in the Caribbean.

Activities

- To stimulate dynamic behaviour within the private sector. The Programme provides matching fund, grant financing of up to \$ 500,000 to firms and clusters that seek to implement innovative, replicable and scalable business models with high potential for growth, exports and employment. The Programme is currently supporting 17 innovative projects in key new and traditional sectors and value chains.
- From a business climate perspective, the Programme works with governments to enhance the environment in which firms invest and operate. The Programme has strengthened and continues to strengthen a number of private sector development institutions within the public sector – investment promotion agencies, competitiveness councils, competition agencies and others – and fosters public-private dialogue to support consensus around an agenda of reforms relevant to the private sector, as well as to aid and encourage their implementation. The Programme has also supported regulatory reforms to facilitate business activity, and has, for example, piloted Secured Transactions within the region.
- The Programme also supports research to inform a strategic agenda for private sector development at a national and regional level, and has generated previously unavailable, statistically reliable data on the characteristics of the private sector throughout the region.

Lastly, the Programme has strategically leveraged the capabilities or funding of other donors, and forged alliances to implement multi-donor action plans, while also implementing multi-donor projects such as the Caribbean Growth Forum. Other donors and/or donor programmes with which Compete Caribbean has been closely collaborating are: Caribbean Export, EPIC, PROPEL, UNDP, WWF, IDH (Dutch Sustainable Trade Initiative), Windward Industries/The Shell Foundation, CARTFUND, WB, CARCIP and the IFC, amongst others.

Break Point, Caribbean Export
CARIFORUM States: Bahamas, Belize, Barbados, Dominica, Dominican Republic, Grenada, Jamaica, St. Kitts and Nevis, St. Lucia, and Trinidad and Tobago
2012 - 2013
www.carib-export.com/export-development/access-to-finance/break-point/

Coordinating Institution:
Caribbean Export Development Agency (Caribbean Export)



Break Point is a Caribbean Export initiative for the CARIFORUM States' private sector to encourage firms to take advantage of the CARIFORUM-EU Economic Partnership Agreement (EPA). Structured as a regional business competition, Break Point took place in 2012-2013 and sought to empower the private sector to access European markets while facilitating linkages to investors. Firms participated in a series of preparatory coaching and training sessions where they were assigned a business mentor/coach, to develop and improve their business pitches. The Cave Hill School of Business (CHSB) was responsible for these sessions, which provided participants with tools to improve their presentation/pitching skills. An EU help desk was also established to provide firms with customised information on how best to take advantage of the EPA for their particular product and/or service. Regional pitches were held in Jamaica, Barbados and St. Lucia to determine the 12 finalists who would have the opportunity to present their business pitch to the international panel of investors in the UK during the 2012 Olympics. The entire process was filmed by a film and production firm to ensure that it could be broadcast throughout the region for educational purposes.

Results:

60 firms applied to participate in Break Point and 30 firms from 10 CARIFORUM States were selected based on predetermined criteria;

Following 3 rounds of regional pitches, 12 firms were selected to present their business ideas before a panel of European and international investors and distributors. The sectors represented in the finals included Agro-processing, Creative Industries, ICT, Manufacturing and Professional Services;

Forty-two percent (42%) of the finalists were female-owned/ headed firms and

Following Break Point, firms indicated that they were better prepared in pitching their companies to potential investors, had gained enhanced knowledge of the UK market and the EPA and were able to capitalise on regional networking opportunities.

Offer:

Information sharing and workshops.

Contact Information:

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Closed Looped Cycle Production in the Americas Programme

Colombia, Panama and Trinidad and Tobago
2012 - Present
<http://www.oas.org/en/sedi/dsd/Energy/OLCP.asp>

Coordinating Institution:
Department of Sustainable Development,
Organization of American States



Organization of American States

This initiative is focused on promoting, introducing and applying the concept of 'Closed Looped Cycle Production' to the productive sector, mainly to increase productivity and, improve energy efficiency and environmental performance in the industrial sector. The sustainable design is focused on an innovative technique known as Cradle to Cradle that focuses on the development of products in which the materials utilised for creating it become valuable nutrients upon reaching the end of their useful life. The OLCP programme seeks to rationalise the use of materials and resources as well as transform consumption and production patterns into circular economies.

Results:

This project was based on the project elaborated by the Ministry of Coordination of Production, Employment and Competitiveness in Ecuador together with the OLCP team, where they could demonstrate the feasibility of this concept. The most tangible results include the number of people trained on the OLCP methodologies. Up to now 200+ people including public officers, entrepreneurs, and students have been trained in the topic of Closed Loop Cycle Production.

Offer:

Information sharing, conference calls, videoconferences, workshops and technical and experts visits.

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Closed Looped
Cycle Production
in the Americas



II Virtual Educa Caribbean

Trinidad and Tobago
2014

www.virtualeduca.org/encuentros/caribbean/2014/

Coordinating Institution:
Virtual Educa



Virtual Educa was a two-day conference to promote innovative projects that aim for inclusion and sustainable development in education. The event was an opportunity to reflect on how to address challenges in educational innovation and teach how to use Information and Communications Technologies (ICTs) tools to create a proper learning environment. Organisers expect that the projects proposed during the meeting will become a sustainable reality in the near future and to keep supporting future conferences to follow up on progress achieved.

Results:

Interaction between government institutions, private and social sectors to discuss innovation in education and future action items to improve the current system;

Partnership between The Ministry of Education of Trinidad and Tobago, Samsung, and Virtual Educa to implement 21st century schools networks in Trinidad and Tobago and

The event had 16,000 visitors, among them national and international experts, teachers, students, enterprises and other stakeholders.

Offer:

Information sharing, workshops and technical and experts visits.

Contact Information:

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Virtual Educa
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Sixth International Conference of the Humanities, Arts, Science and Technology Alliance and Collaboratory (HASTAC)

Peru
2014 – Present
www.hastac.org

Coordinating Institution:

Ministry of Culture of Peru, Ministry of Education of Peru, Organization of American States, University of Illinois, HASTAC and RedCLARA



The Humanities, Arts, Science and Technology Alliance and Collaboratory (HASTAC), is an academic community founded in 2002 in the United States in order to promote multidisciplinary research through exchange of opportunities for collaboration, jobs, scholarships, conferences and call for proposals on a Web platform. Today, the HASTAC network has over 16,000 active members working on 109 projects in 20 countries worldwide. Each year, HASTAC organises an international conference, which brings together humanists, artists, leaders, academics and technologists to share ideas and spark new collaborations. In its 2014 edition, the HASTAC Conference was held at the Ministry of Culture of Peru, in Lima from April 24 to 27, under the theme: Hemispheric Pathways: Critical Makers in International Networks. The theme highlighted the importance of cross-cutting initiatives and cooperation between the countries for the economic and social development of the Americas. This HASTAC Conference was very special since it was the first take place in Latin America and the Caribbean, and the first to be held in two languages, English and Spanish, thus promoting cultural exchange and social inclusion like never before on regional issues such as culture, technology and innovation.

Results:

Documentation of 70 presentations, 14 panels, 26 project demonstrations, 3 groups of interest sessions; 2 hands-on labs; 3 workshops and 2 live cultural performances;

403 people registered and 190 gave presentations;

Presence of the Minister of Culture of Peru as well as 6 main speakers issued from the Peruvian Government, the OAS, the Mozilla Foundation and the MacArthur Foundation;

A total of 173 scholarships were offered to Peruvians to attend the conference;

Adoption of the Declaration Peru HASTAC 2014, in which the network of +16 000 members identifies priorities and makes a series of recommendations on the importance of education, research, culture, arts, science and technology;

Big media coverage: 37 articles were published in 21 different sources and

The organising institutions of the Conference are now are contemplating the possibility of creating a division of HASTAC focused on Latin America.

Offer:

Information sharing, teleconferences, videoconferences, workshops and technical and experts visits.

Contact Information:

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Organization of
American States



CRONÉCTATE

Mexico
2012 - Present
www.municipiodequeretaro.gob.mx

Coordinating Institution:
Municipality of Queretaro



**MUNICIPIO DE
QUERÉTARO**
FUNDADO EN 1531

'Cronéctate' or translated, Connect Queretaro, is an initiative (i) to provide large scale free wireless connection for the entire city of Queretaro; and, to (ii) make Queretaro a Smart City on a world scale. The first part of the project has had relevant impact and some areas of the city already offer free internet access in public areas such as squares, avenues, bus stops, and others. Three mobile apps have also been developed to support the project, one related to tourism. Academic institutions, some private institutions as well as Queretaro's Municipality have financially supported this project. Other contributions include two digital libraries donated by the Telmex Foundation.

Results:

From December 2012 to July 2014 there were more than 5 million connections to the free Internet access. There is a 93 percent satisfaction among the population with the service.

Offer:

Information sharing, conference calls, videoconferences and technical and experts visits.

Contact Information:

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**Curazao Competes: Creating Awareness
about Competitiveness in Curazao,
MarkStra Caribbean**
2012 - 2016
www.markstra.com

Coordinating Institution:
MarkStra Caribbean

Curazao Competes consists on a set of activities and actions to create awareness and understanding among Curazao executives and policy makers, about the way that Curazao can become a better partner for trade, investment and collaboration for countries in the region. Those activities include a survey, a study, secondary data and awareness workshop that can disseminate with executives and stakeholders the types of factors that enhance competitiveness in Curazao. Its aim is to reduce the relative isolation of Curazao by increasing local and international understanding of the country's position in the world.

Results:

Information about the study was disseminated to more than 1000 executives;

400 executives were exposed to the survey's concept;

80 organizations submitted applications for Curazao Competes workshop and

10 workshops have been offered thus far;

Offer:

Videoconferences, workshops, technical and experts visits.

Contact Information:

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Special Contributions

Experience Augmented Reality!

1. Visit the App Store to download and install the free DAQRI app on your smart phone or tablet. The DAQRI app has a logo that looks like this:



2. Start the app.
3. Touch the Daqri logo on the splash screen to open the camera.
4. Point the camera of your device at the target image, which in this case is the dinosaur.
5. When the system recognizes the image it will automatically download and start your experience.
6. While keeping your camera pointed at the image, feel free to move around to fully experience Augmented Reality.

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Augmented Reality and the Human Imagination



Imagine a world in which everyday objects could teach you how to use them. Imagine a world in which books come to life and allow you to see and interact physically with the characters and storyline in three dimensions. Imagine a world in which a physician could show you, on your own body, where your fracture, torn ligaments or pulled muscles are. Imagine a world in which you could see skyscrapers that haven't been built yet, appearing in the skyline of your city. Imagine a world in which you could enjoy cultural treasures that have long been lost as though they were physically present. These scenarios and many more are possible via Augmented Reality.

The advent of the World Wide Web brought the benefits of digital information to a wide variety of people all over the planet. However, in order to access those benefits, one typically has to go to a computer, sit in front of a screen and type with a keyboard or move a mouse to find the information.

In the real world, we learn by interacting with objects and entities with our whole body. That is, we can pick things up; we can manipulate and move them; we can interact with them. When we "interact" with digital information on a computer screen we lose that body interaction. Smart phones and tablets have now allowed us to access digital information wherever we are, but they still lack the physicality that we normally have with our world. They also lack a "sense of place", since the information is confined to a computer, while we are in the real world. Augmented Reality offers the promise of bringing that information out of the computer and into the real world and to regain that bodily connection with information through which humans interact and learn.

In short, although many people classify Augmented Reality as a new technology, it is actually more than that. Augmented Reality is a superimposition of digital information onto the real, physical world. It is, in fact, a medium that is supported by technology, such as sensors, processors and displays. But it is also an experience which consists of merging the digital with the physical. More importantly, Augmented Reality opens infinite imaginative possibilities, which in turn helps to generate all kinds of new products, services and innovations.

processors and displays. But it is also an experience which consists of merging the digital with the physical. More importantly, Augmented Reality opens infinite imaginative possibilities, which in turn helps to generate all kinds of new products, services and innovations.

Augmented Reality Application Areas

Augmented Reality is currently being applied in a variety of areas including: art, archaeology, architecture, education, engineering, manufacturing, medicine, entertainment and games, among others.

There is a multitude of potential ways to utilize Augmented Reality in each of these application areas. For example, in education, Augmented Reality offers the opportunity to provide laboratory exercises in which students manipulate real world objects (perhaps beakers or flasks) while the chemicals are simulated in Augmented Reality. This provides a safe environment for the students. It also offers the possibility for students in online courses to carry out laboratory exercises at home. Furthermore, Augmented Reality can be used in medical studies to help students see parts of the human body in three-dimension and practice virtual dissections and operations before undertaking real life procedures.

In the area of architecture, Augmented Reality can serve to allow a person who is contemplating building a new house to see what the full scale home will look like on a lot and determine the best position for it before construction starts. It can also be used by home owners who wish to do renovations and want to see beforehand how different furniture or floor coverings will blend with their current fixtures.

In the field of innovation and entrepreneurship, Augmented Reality can help visualize three-dimensional prototypes of objects and products, which helps to better understand product components while contributing to lower the costs for businesses. Augmented Reality is also used in a number of marketing and publicity strategies, from business cards revealing people describing their services in three-dimensions; to magazines that integrate Augmented Reality in their pages when scanned with a smartphone or tablet, or, in the future, smart eyewear.

The Future of Augmented Reality

Opportunities abound for the imaginative entrepreneur when it comes to Augmented Reality. As discussed above, Augmented Reality applications can be developed to enhance people's experiences in practically every area of their lives. As such, creative entrepreneurs could offer services building and distributing Augmented Reality applications. For those more interested in Augmented Reality in its own right, there is plenty of room to innovate by creating new and better Augmented Reality hardware, software, and services. There is no doubt that in the future, we will see better technology, especially display devices (glasses for example), as well as better and easier-to-use content creation tools. In other words, there are a lot of meaningful employment opportunities for creative entrepreneurs to fill the needs of Augmented Reality producers, customers and content creators across the world.

The future of Augmented Reality holds great promise, limited only by our imaginations. So let us unleash our creativity and dare to innovate to allow the digital and the real worlds to meet and interact in ways never seen before to solve problems, bring productive uses of technology to everyone and create the jobs of the future.

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Caribbean InTransit: Engineering a Global Caribbean

By Marielle Barrow


As a people, Caribbeans are always in transit. The force of that creative motion, rhythmic and palpitating positions us among the nations with the highest creative output per capita in the world. However, without harnessing such creativity through a dynamic marriage with economics, Caribbean innovation often propels other communities, increasing someone else's viability rather than our own. We can and must shape this motion, determine our processes of transition into new markets and innovate effectively.

As a cultural commission, Caribbean InTransit has a unique positioning within the domains of education, arts, tourism, technology and community development. It is an arts-for-social-change enterprise, an international non-profit registered in Trinidad and as a 501 (c) (3) in Virginia, United States. It seeks to create communities of value: by recognizing and activating the creative potential within persons across various professions, individuals who work toward a common vision in creating communities that facilitate social and economic growth.

Caribbean InTransit is directed by a team of scholars and artists spanning the Caribbean, the US and Europe. It develops collaborative projects by leveraging an extended community of scholars, cultural producers, students, entrepreneurs, activists, policy makers and businesses to cultivate a union between economy and artistry.

Caribbean InTransit's central tenets of access, practice, critique and sustainability respond to three major questions to harness creative imagination, innovative solutions and entrepreneurial activities:

- How do we ensure the sustainability of these models toward a successful economic future?
- What innovative development models exist?
- What does it take to create a viable Creative Industry for the Caribbean?



Biannual, open access, peer reviewed Journal provides a space for CRITIQUE through a meeting place of minds.

CRITIQUE

The Caribbean InTransit journal networks cultural practitioners providing critical understandings to policy makers in highlighting the best practices in our domain, while examining the historical, economic and political contexts of the canon.



Caribbean InTransit
Festivals:
Provide calendared
platforms for
PRACTICE where
meaning meets
money

PRACTICE

Caribbean InTransit creates platforms of practice as marketplaces for goods & services. Through festivals such as Arts InTransit, it facilitates skill sharing; exchange; selling and critique.



"This is ME"
workshop series:
Provides **ACCESS**
to networks &
opportunities for
atrisk communities.

ACCESS

"This is ME," offers arts, leadership & entrepreneurship training for atrisk communities: youth, persons living with HIV/Aids and women in the Caribbean region. Using the Arts as instruments of social outreach and self-examination, it catalyzes communities to create sustainable economic development



Google
Hangout "Talking
Arts" establishes
SUSTAINABILITY for
stakeholders by continued
knowledge sharing and expansion
of networks.
"ARTS MENU" Newsletter
establishes **SUSTAINABILITY**
for stakeholders by continued
knowledge sharing and
expansion of networks.

SUSTAINABILITY

"TALKING ARTS" is an online space to Meet, Learn, Explore and Hangout with a range of persons from different sectors. The newsletter "Arts Menu" which showcases opportunities, events, new book releases and keeps individuals up-to-date with Caribbean InTransit and its partners developments.

At the heart of Caribbean InTransit is "Art is a Lifestyle". A system of networked growth by providing critical needs of: Access/ Practice/ Critique/ Sustainability for stakeholders. As a cultural commission, Caribbean In Transit curates cultural experiences for stakeholders' needs for creativity as a motivating factor in their lives. There are opportunities for collaboration for students, faculty and artists; access to expanded networks for all stakeholders and activities to nurture critical thinking. These mechanisms of growth lead to sustainable livelihoods, solidarity and an economically sound global Caribbean. To find out more, please visit www.caribbeanintransit.com

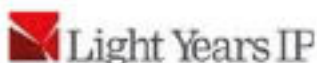
Driving Competitiveness For The People

Re-positioning for Impact on Producer Income



Prepared by Light Years IP (LYIP)
www.lightyearsip.net

Ron Layton, CEO and Dr. Margaret Brindle, Director of Education Light Years IP, Washington, DC Full version available at www.riacreport.org



The mission of Light Years IP is to re-position poor producers to capture far higher income. It starts by examining the producers' current share of the retail value generated by their high quality products in affluent markets. The share can be dramatically increased by training and enabling the producers to own the import distribution to retail stores. The gains from this common corporate business practice depend on the product being of superior quality and being presented optimally to consumers.

Light Years IP has a team of world-class brand, marketing and positioning experts, some of whom work pro bono while being senior staff members of global corporations. The team crafts different re-positioning strategies for each product and producer group based on the features of the retail market for the product. Generally the business method includes enabling the producers to own retail brands and control distribution in countries where affluent consumers demand the product.

Light Years IP conducts extensive training in how producers operate in foreign countries and how to own brands and distribution. Training is undertaken in the basics of Intellectual Property business, repositioning; stakeholder formation and organization; and how to control distribution to the retail store.

The potential gains from improved positioning can be measured by the share of retail value currently obtained by producing corporations that use positioning. Several corporations are estimated to earn 40% of the retail value of their branded coffee. If the Ethiopian fine coffee sector earned 40% of the retail value of their fine coffee, the sector would increase income from \$110 million per year to \$700 million per year. There are many other producers of fine coffee in OAS countries that could make similar proportional gains in income.

As discussed below, an additional \$200 million was gained by Ethiopia in the first phase of a re-positioning initiative designed by Light Years IP.

Re-positioning can create huge impacts on national export income and the income of poor producers, achieving social inclusivity. It is possible to:

1. Enable low-income producer groups to access skills in world- class brand identity, product development and packaging skills.
2. Enable the producers to operate in distribution directly to retail stores that serve brand- intensive consumers.
3. Train producer groups to use Intellectual Property to control retail brands and use that control to re-position.
4. Engage social investment funding to producer initiatives for re-positioning, with returns that exceed expectations.

The problem that is being solved

Poor producers and exporters of the finest quality export products together receive, on average, only 3% of the final retail value that their products generate from affluent global consumers¹. The current challenge is that although developing country farmers and producers grow and produce extraordinary distinctive products, most are sold either to exporters or their agents close to the producer's homes, or to cooperatives who sell to importers at world commodity prices. Export commodity prices are not appropriate for fine quality exports that capture high retail prices.

The retail price differential earned by quality products is called "intangible value" and accrues mainly to those who own the brand and market the product to retail stores. Producing corporations make sure they capture intangible value.

Consider companies such as Sunkist that is owned by producer cooperatives, owns a valuable brand and is positioned with distribution subsidiaries in retail markets. Sunkist now has over 800 products in 85 countries, many sold under licensed use of the Sunkist name.

Achieving competitiveness through brands and positioning both product and company are often seen as the preserve of the modern corporation, not small producers. But, our experience is that the highest take up rates for this method are among low-income producers. Even marginalized producers in remote parts of Africa, including rural women, have proven more able to grasp innovative concepts and new ways of doing business than many government development specialists.

As OAS Assistant Secretary General Albert Ramdin recently said, "...fundamental change is required to take advantage of new opportunities. Our nations must become more competitive. We cannot use the same old business models and concepts and expect to succeed. We cannot use an education syllabus of 15 years ago and expect to produce a generation that can compete globally. We cannot attract new investment, if our framework and policies are outdated.

Not being afraid to be different led five million African producers to tackle positioning. They learnt to re- position their highly desired products through quality brand identities, competitive formulation and

packaging, sales testing and pricing for success. Not afraid to re-position their business, they formed subsidiaries in Europe with exclusive management of their product right up to the door of European retail stores. If African producers can succeed in innovative business strategies that include the critical role of Intellectual Property to better create and capture income from their distinctive products, Latin America producers can certainly do so.

Poor producers (the People) do adopt and develop innovative strategies, sometimes more readily than other parties in development.

No matter how valuable distinctive products are to consumers, most poor producers have no incentive for quality improvement, a self-defeating failure of markets that needs correcting. Re-positioning enables higher income that acts as incentive to quality.



Transformational Development can be achieved by producers

Repositioning is effective for Corporations and for Producers in the Americas

Most international agencies advocate for and fund conventional strategies, advising countries to start non-traditional exports and value added processing. Moving to new export products without history and expertise is questionable if there is high intangible value not being secured from heritage exports. Processing is no longer a profitable investment, due to intense competition and global oversupply of processing capacity.

Intangible value exists where the retail consumer pays for quality, so producers need to have business strategies that reach the retailer. The middle of the value chain (transformation of the raw product into the final one) does not play as strong a role in IP value creation. International agencies should recognize the much higher returns from the re-positioning interventions, far exceeding returns from conventional strategies.”

The returns from investing in positioning far exceed returns from conventional strategies.

Growth of brand-intensive consumption in countries of the Americas

Intangible value dominates purchasing by affluent consumers who are responsive to brands, but brand- response is also seen among the growing middle class in emerging countries. As middle class incomes rise from \$5,000 per year to \$15,000 and to \$30,000 per year over the next decades, a higher proportion of each rise will be spent in brand-intensive ways. Boston Consulting Group (2013) estimates that 20 million Brazilian households will be emergent (with income \$15,000 to \$30,000) by 2020. Today, consumers are inquiring more about the origin of the product and the transparency of the supplier. This new emergent consumer will be the ideal market for producers who re-position themselves to address the growing demand for quality products with a (true) story.

The People do own heritage and true stories that attract consumers, particularly those in "emergent affluent" households.

Conclusions

1. It is time to bring competitiveness to the people of the Americas, to empower poor producers with re-positioning.
2. Focus on large groups of producers who have existing organizations that transparently represent the capability of ordinary people to respond to incentives for quality and to commit to quality standards to build brand value.
3. Enable these groups to access world-class brand identity, product development and packaging skills and to operate in distribution directly to retail stores that serve brand- intensive consumers.
4. Channel seed funding to design and train producer groups and investment funding to producer initiatives for re-positioning-- the returns will exceed expectations.
5. Implement training in repositioning and creation of long-lasting brand identities.



Message from Guatemala as RIAC Chair Pro Tempore 2015



**Juan Carlos
Paiz**

Dear colleagues of the Americas,

This year, Guatemala, located in the heart of the Americas, has the honour of receiving the Chair Pro Tempore of the Inter-American Competitiveness Network for the term 2014-2015. We are aware of the achievements reached thus far by the member countries of the Inter-American Competitiveness Network (RIAC), the result of constant efforts among the members and an ample debate in the exchange of ideas and lessons.

It is in this context that we must recognise the Organization of American States (OAS) and its ongoing work of improving the competitiveness of our region's, work through which it has successfully maintained the network that year after year generates a flood of learning for all who belong to it. It is thanks to this collaborative work that the region today is not only aware of the challenges we must overcome, but also of the achievements we have yet to reach, thus creating a more productive region through a competitiveness agenda and the efforts derived from it.

We wish to express our congratulations to Trinidad and Tobago for the excellent work conducted during its term as Chair Pro Tempore of the Inter-American Competitiveness Network for the period 2013-2014, and as host of the 2014 Americas Competitiveness Forum, tasks for which it leaves a high standard for Guatemala.

As a country, we reaffirm our commitment to continue the work undertaken by Trinidad and Tobago. Furthermore, we would like to motivate all countries that make up this block rich in culture, tradition and values to share experiences that increase our productivity and the richness of our continent and allow us to continue to discover a road of constant growth for every one of our members. It will be in this way, as we support each other, that we will continue to become a block of cooperation for competitive development.

Our region has ample potential, and it is within this potential that we must recognise the important role played by institutions that are the reflection of norms established in every one of our societies, and that give us a system to facilitate competitiveness as countries and as a region. That is why we are certain that facilitating spaces to strengthen dialogue around our institutions will allow us to find common ways to improve competitiveness starting from a base of strong institutions and the trust of our peoples in all of them.

It is in this context that I take this opportunity to invite you to accompany us next year at the IX Americas Competitiveness Forum in Guatemala. The IX Forum will have as its main objective a dialogue that promotes actions towards strengthening and increasing the trust of our people towards our institutions. Our Guatemala, a country full of culture, a millennial tradition and diversity awaits you.

We know you will enjoy our country!

Juan Carlos Paiz
Presidential Commissioner for Competitiveness and Investment
Office of the President of the Republic
Guatemala, Guatemala





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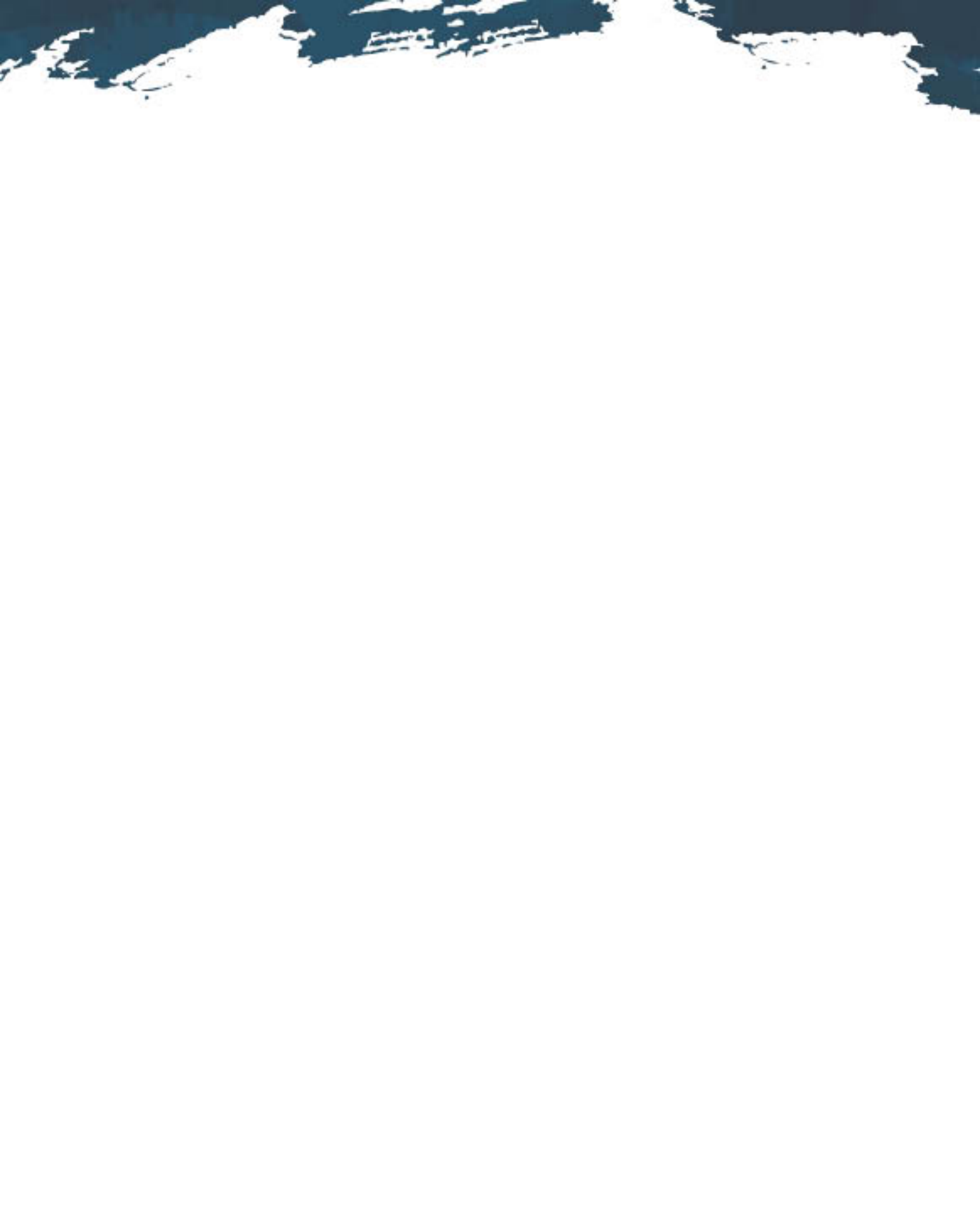
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2014

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Ministry of Planning
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