



Organización de los Estados Americanos



Organización de los
Estados Americanos

Strengthening National Systems of Innovation in Latin America

Workshop of the UNFCCC's Technology Executive Committee

Cesar Parga

- Introduction/OAS and National Innovation Systems
- National Innovation Systems
 - Trends, Objectives and Recent Developments
- Technology Transfer Infrastructure
 - Policies, laws and institutions
 - Regional initiatives/Networks
- Capacity Building
- Collaboration Projects

INTERAMERICAN COMPETITIVENESS NETWORK (RIAC)



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VIII AMERICAS
COMPETITIVENESS
FORUM 2014
TRINIDAD AND TOBAGO



THE HUMAN
IMAGINATION
AT WORK
DRIVING COMPETITIVENESS,
POWERING INNOVATION



Lanzamiento del Primer Informe "Señales de Competitividad de las Américas"
Reunión Anual de la Red Interamericana de Competitividad- RIAC
en el marco del VI Foro de Competitividad de las Américas - 24 de octubre de 2012, Cali, Colombia



www.riacnet.org

www.riacreport.org

REMCYT and COMCYT



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The Meeting of Ministers and High Authorities in Science and Technology (REMCYT)



The Inter-American Committee on Science and Technology (COMCYT)



- -Investment in R&D below 0.6 % of GDP [Developed countries 2-3%]
- -Investment concentrated in public sector (up to 80%) and in public universities
- -Mostly basic research, academic objectives (important but not sufficient)
- -Science, Technology and MARKET, evolve from basic, applied to market oriented development

Guatemala



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WEF Innovation Ranking 2012-
2013: 83

Quality of Research Institutions
106

Capacity to Innovate: 67

Patents PCT: 76
(WEF 2012)

The Case of Mexico



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14^a World Economy (IMF 2011)

10^o (OMC 2011)

WEF Innovation Ranking 2012-
2013: 56

Quality of Research Institutions 49

Capacity to Innovate: 75

Patents PCT: 58
(WEF 2012)

Output/Patent Gap



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USPTO/2010

Total Applications 2010: 490,226

US Residents 241,977 MX 295 BRA 568 Rest of LAC 408

Total Patents Granted 2010: 219,614

U.S. Residents 107,792 MX 101 BRA 175 Rest of LAC 120

Source USPTO/WIPO (2012)



14,055 Total Applications Mexico in
2011


1,065 Mexican Residents (IMPI 2011)

11,045 Total granted in Mexico 2011
245 to Mexican Residents (IMPI 2011)

Tech. Transfer 2014



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- Regional Public Policy Dialogue
 - Innovation
 - Competitiveness
 - Support MSMEs
- Basic IP  Applied IP
 - Technology Transfer
 - Entrepreneurship High Impact SMEs
(Incubation/Acceleration)



- **Trends**
- **Seeking to Capture Intangible Value or Value-Added**
- High growth of goods and services with high intangible value as a percentage of international trade
- Product niches and high consumer standards
- Our Products and Services? Place in the value chain?



- Many factors play a role, including:
 - **Strong Research Base**
 - **Legal and Policy Framework**
 - **Culture of Innovation**
 - **Tech Transfer Infrastructure**
 - **Business Development Network**
 - **Alan Bennett, U.C. Davis**
- Just one way to promote innovation, connect research to market
- IP is a means to appropriate, negotiate and monetize knowledge and intangible assets

RIAC TFIE Recommendations



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The RIAC Task Force on Innovation and Entrepreneurship (TFIE)



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

Director for Public Policy and Competitiveness Development Bank of Latin America (CAF)



Dr. Rosibel Ochoa

Executive Director at the von Liebig Centre for Entrepreneurism and Technology Advancement, University of California, San Diego



Kevin Franklin

Executive Director of the Institute for Computing in Humanities, Arts and Social Sciences, University of Illinois



Sherry Tross

Executive Secretary for Integral Development, Organization of American States (OAS)



Dr. Maya A Trotz

Associate Professor, University of South Florida, Dept. of Civil and Environmental Engineering



Horacio Melo

Former Executive Director, Start-up Chile



Dr. Marlene Attzs

Lecturer in the Department of Economics, University of the West Indies (UWI) and Deputy Chairman of the Economic Development Board of Trinidad and Tobago



Professor Cardinal Warde

Professor of Electrical Engineering at Massachusetts Institute of Technology (MIT)



Guillermo Fernández

Chief Executive Officer of the U.S. - Mexico Foundation to Promote Science and Technology (FUMEC)



Dr. Roger Hosein

Senior Lecturer, Coordinator Trade & Economic Unit, U.W.I



Canada and United States



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Ben Franklin Technology Partners



MINISTRY OF RESEARCH AND INNOVATION

LAC Innovation-Entrepreneurship



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ST>RT-UPCHILE



Innova@cuador

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Colombia

Emprend@cuador.com



GEORGIA TECH
Supply Chain & Logistics Institute
EDUCATION • INNOVATION • LEADERSHIP



i2i

Idea 2 Innovation Competition



Government of the Republic of Trinidad and Tobago



RED OTT

NOVACCI
CIET
Centro de Innovación y Emprendimiento Tecnológico

CICESE

CIAD

UACJ

CRODE
CHERILANJIA

cimav

CENTRO LAFPA DE CONOCIMIENTO, S.C.

COMIMSA

CB

IPICYT

CIATEO
Centro de Tecnología Avanzada

CIATEQ

UNIVERSIDAD HERIQUANA DE COAHUILA

st M

CIATEC

CENTRO DE INVESTIGACIONES EN OPTICA, A.C.

CRODE CELAYA

UPP

CICY

CRODE Mérida

UNIVA

PRAGMATEC

ITESO
Universidad Juárez del Estado de Durango

CIATEJ

idecaquif

SIP Innovation
Sistemas de Información y Procesos

INMEGEN

Caramellect

INFOTEC

UNIVERSIDAD DEL ESTADO DE GUERRERO

INSTITUTO DE ECOLOGIA, A.C.

CamBioTec

Startblue

UVC

norcus

AMM

UNIVERSIDAD ANÁHUAC
UNIDAD EN BOSCO MILAN

TOLUCA

UNIVERSIDAD AUTÓNOMA DEL ESTADO DE MORELOS

INERR

UNIVERSIDAD POLITÉCNICA DE PUEBLA

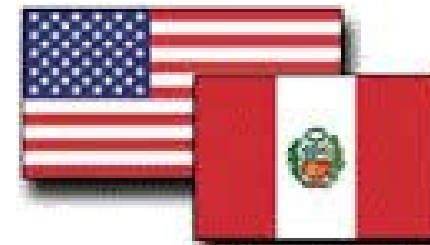
novomanía

UNIVERSIDAD DE GUATEMALA

Trade Agreements and TT



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Exchange of Experiences



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MORE COLLABORATION
MORE COMPETITIVENESS



Exchange of Experiences



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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, EPIC 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. EPIC provides training for the workforce, develops and advances technology, and facilitates strategic industry-university collaboration for the global energy industry, while supporting the Carolines' development of economic and energy security. EPIC also partners with other universities to promote collaboration and resource sharing.

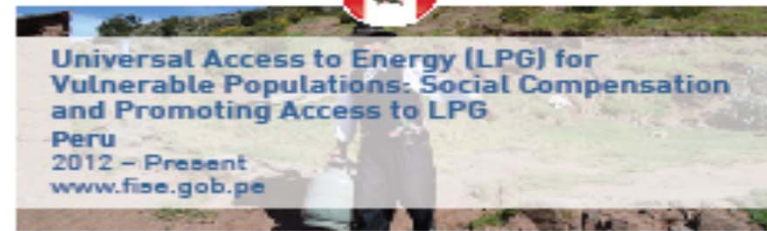
Results:

EPIC'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;

EPIC 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 EPIC and been provided award-winning energy-education materials.

Offer:



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,

Exchange of Experiences



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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



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

Experiences on ENERGY, Principle 10



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

National Sustainable Energy Policy

Barbados

Division of Energy and Telecommunications, Office of the Prime Minister

Expert visits and presentations on solar energy

<http://www.energy.gov.bb>

Energy for Sustainable Development

Belize

Ministry of Energy, Science and Technology and Public Utilities

Information sharing on energy policy framework to guide sector development in the next 30 years

www.kestpu.gov.bz

Development of Renewable Energy, Energy Efficiency, and Electricity

Suriname

Ministry of Natural Resources

Information sharing on renewable energy technology to help provide electricity to remote areas

Universal Access to Energy (LPG) for Vulnerable Populations: Social Compensation and Promoting Access to LPG

Peru

Energy and Mining Investment Watchdog

Teleconferences, videoconferences, workshops, expert visits, technical tours, information sharing on the consumption of LPG to improve health and life quality of Peruvian households in vulnerable situations

<http://www.fisa.gob.pe>

Energy Production and Infrastructure Centre (EPIC)

United States of America

University of North Carolina at Charlotte

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

Fraunhofer Centre for Sustainable Energy Systems

United States of America

US Department of Commerce's Economic Development Administration

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

Housebook to Energy Efficient Residences

United States of America

Kentucky Highlands Investment Corporation

Information sharing and conference calls about the programme on pairing graduate students of Design Architecture with State architect engineers to design modular residences that incorporate readily available energy efficient technologies into their designs

Sustainable Northern Communities Centre

United States of America

US Department of Commerce, Economic Development Administration

Sharing building plans, construction manuals, detailed instructional videos and integrated designs among others on the collaboration platform to reduce construction costs, create healthy living environments in Circumpolar climates



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Convening Institutions

FINAL REPORT

The Americas Competitiveness Exchange on Innovation and Entrepreneurship

First Edition: March 31st – April 4th in the United States

#ACXchange

- Atlanta, GA
- Greenville, SC
- Conover, NC
- Kannapolis, NC
- Charlotte, NC

A RIAC Activity towards the VIII Americas Competitiveness Forum



The Exchange was convened by the U.S. Government and the Organization of American States through the Inter-American Competitiveness Network (RIAC).

The Exchange was made possible thanks to the support of the RIAC Chair Pro Tempore 2014, the Honourable Bhoendradatt Tewarie, Minister of Planning and Sustainable Development of Trinidad and Tobago; the United States Government through the U.S. Department of Commerce and the U.S. Department of State; and the OAS Executive Secretariat for Integral Development.



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Financial support

Partial economic assistance was available for qualified nominated participants that requested support, particularly from smaller economies.

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).



Canada

ACE MEXICO



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The Americas Competitiveness Exchange (ACE) on Innovation and Entrepreneurship

Second ACE, Mexico



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.





“Technology Transfer and Commercialization Academy for the Americas”

Objective

- Develop highly qualified human resources on technology transfer and commercialization -- ideas from the lab to marketplace.
- Increase cooperation, experiences, and sharing cases of success/failure in an international context.



Program Dynamics

- Two-week advanced training led by multidisciplinary international top level professionals with extensive practical experience
- Working groups organized with 5 participants from different countries evaluated 6 technologies presented covering all the steps of the commercialization process.
- Site visits to agricultural and aquaculture sector companies, resulting from CIBNOR's technology transfer process





Program

- Intellectual Property
- FTO/Clusters in technology transfer
- Entrepreneurship
- Technology-based Business Creation
- Risk Capital and Fund Management
- Business Incubation / Financial and Economical Assessment
- Technology



**Impact: 32 Graduates
of 9 Countries**

INSTITUTIONS AND UNIVERSITIES CA/MEX



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CENTRO KAPPA DE CONOCIMIENTO, S.C.





TTO Network -- Train The Trainers



**Impact 2013 : 32
Graduates of 9
Countries**



**Impact 2014: 40
Graduates of 15
Countries**

**4 programs to date
(2011 – 2014) with 100+
participants from 30+
countries.**

“Very educational program, one of the best ever taken. All aspects were very well thought out and combined; academics, logistics, social.....”

“Overall it was a good programme with the right experts giving the talks.”

“Course was great from both professional and personal point of view...”



Future Courses

Mexico

November 4 – 17, 2013

**Centro de Investigaciones Biológicas del Noroeste, S.C. (CIBNOR),
La Paz Baja California, México**

United States

June 2 – 13, 2014

University of California, Davis California



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Coordinating Institution:

Department of Sustainable Development,
Organization of American States



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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



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Energy and Climate
Partnership of the Americas



Closed Looped
Cycle Production
in the Americas



National Quality Infrastructure



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ACTION PLAN OF PANAMA

OAS Regional Fund
Quality Infrastructure for
Biodiversity and Climate
Protection in Latin America
and the Caribbean



Our capabilities

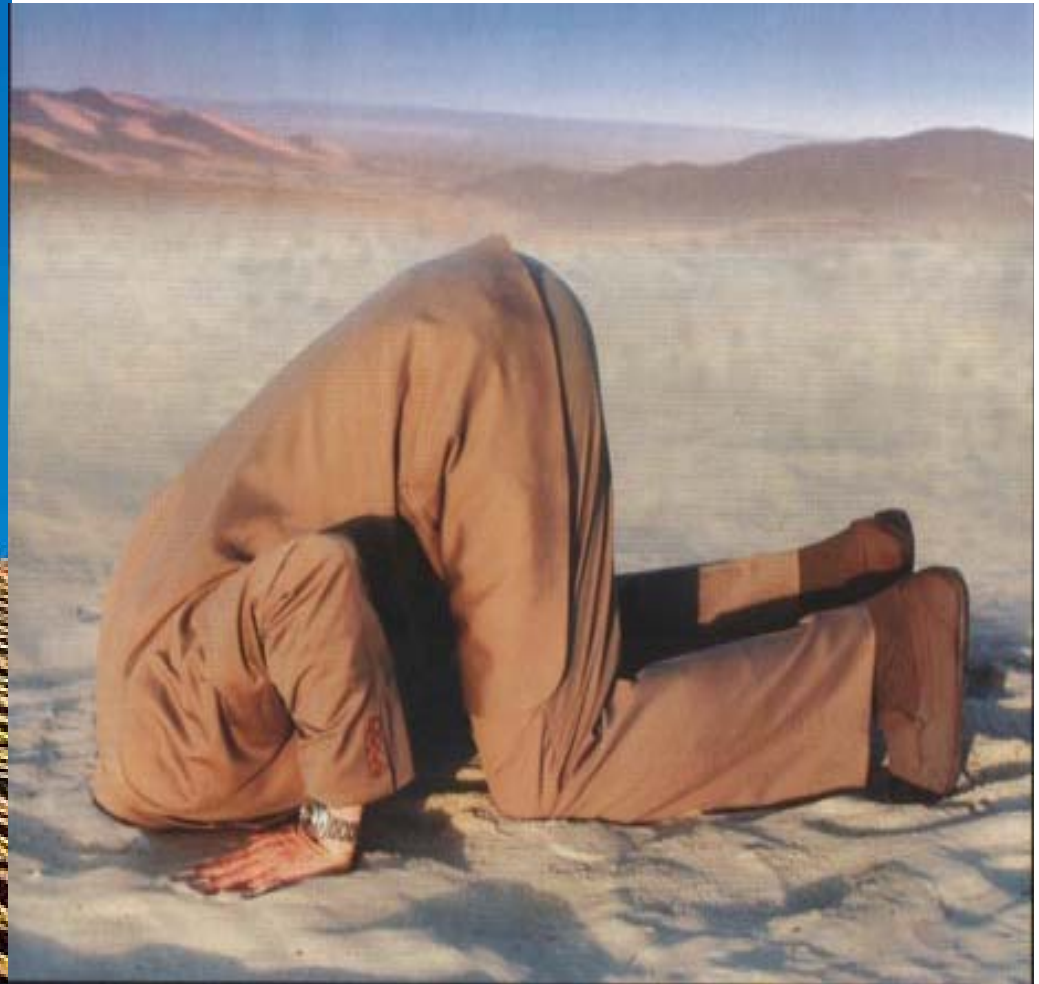
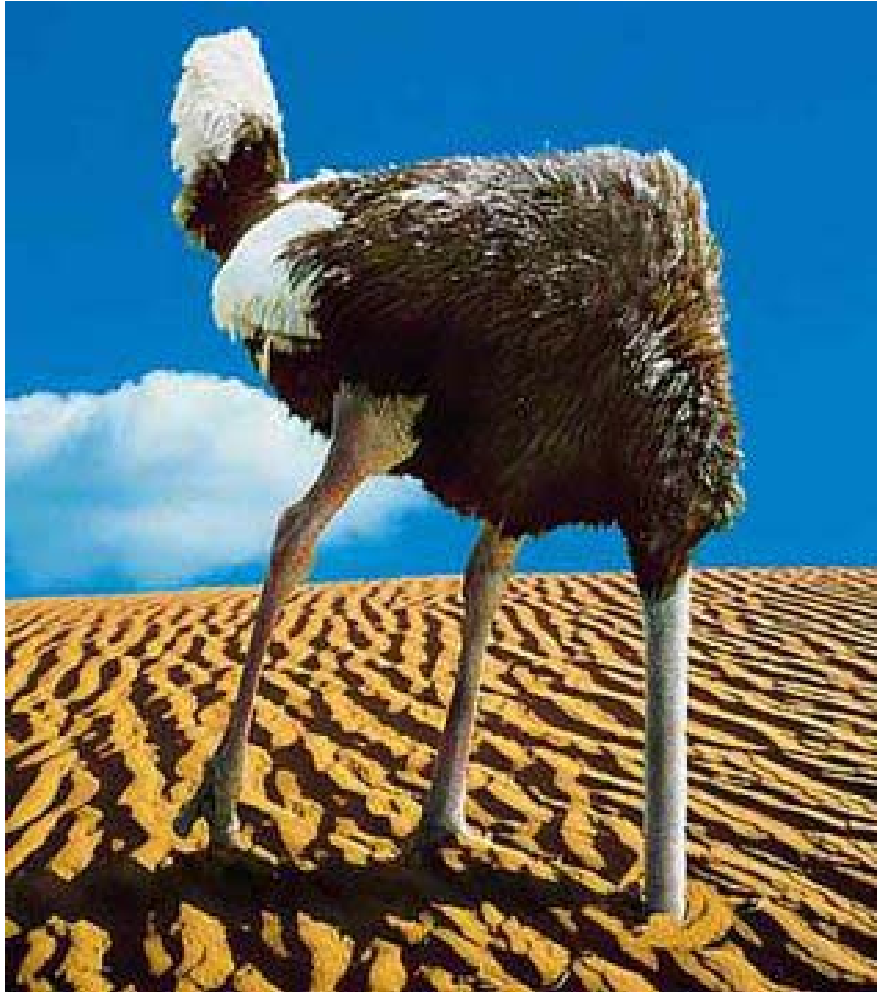


PTB measures with the highest accuracy and reliability – metrology as the core competence

UNITED STATES PRE-1980



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Courtesy Prof. Alan Bennett, PIPRA UC DAVIS

LAC 2004?



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ALC 2014?



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Elements of regional innovation agendas



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- 1) Incentives
- 2) Clear Rules
- 3) Colaboration
- 4) Benchmarks and Indicators to measure results
- 5) Diversify opportunities and risks
- 6) Strategy to prioritize objectives
- 7) Capacity to manage IP and Tech Transfer

VISION + STRATEGY

INNOVATION + COMPETITIVENESS



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