



Sistema Económico
Latinoamericano y del Caribe

Latin American and Caribbean
Economic System

Sistema Económico
Latino-Americano e do Caribe

Système Economique
Latinoaméricain et Caribéen



Innovation Funding: Case of Costa Rica

Otto F. Rivera
Executive Chief

Intra-Regional Relations

*Seminar on mechanisms to support innovation for SMEs in Suriname
Paramaribo, Suriname
11 and 12 April, 2013
SP/SP-SBF-SMSI-SMES-Di N° 8-13*

Copyright © SELA, April 2013. All rights reserved.
Printed in the Permanent Secretariat of SELA, Caracas, Venezuela.

The Press and Publications Department of the Permanent Secretariat of SELA must authorise reproduction of this document, whether totally or partially, through sela@sela.org. The Member States and their government institutions may reproduce this document without prior authorisation, provided that the source is mentioned and the Secretariat is aware of said reproduction.



CAMTIC

Innovation Funding

Case of Costa Rica

Otto F. Rivera

orivera@camtic.org

April 2013



1st dream control:



CAMTIC



When a person laughs, his/her brain releases endorphins. These are neurotransmitters secreted by the pituitary gland in the brain, which has a wing-like effect similar to opioid morphine.



Agenda



CAMTIC

- Innovation.
- About Costa Rica and it's innovation policies.
- Innovation funding actions.





Innovation is a sexy topic...





But it may lose its "power"...





Creativity vs. Innovation




CAMTIC

Creativity:

It is product of **human intellect** and it is expressed through **new ideas or alternatives** for solving a problem.

A problem, under this concept, doesn't represent a negative situation, it represents any **circumstance** that requires a **solution**.



Business innovation:

It is product of the **business gestation** and it is usually expressed **as a product, service or business model**.

A business model is how a company creates, transmits and captures value.

The innovation seal lies on two virtues:

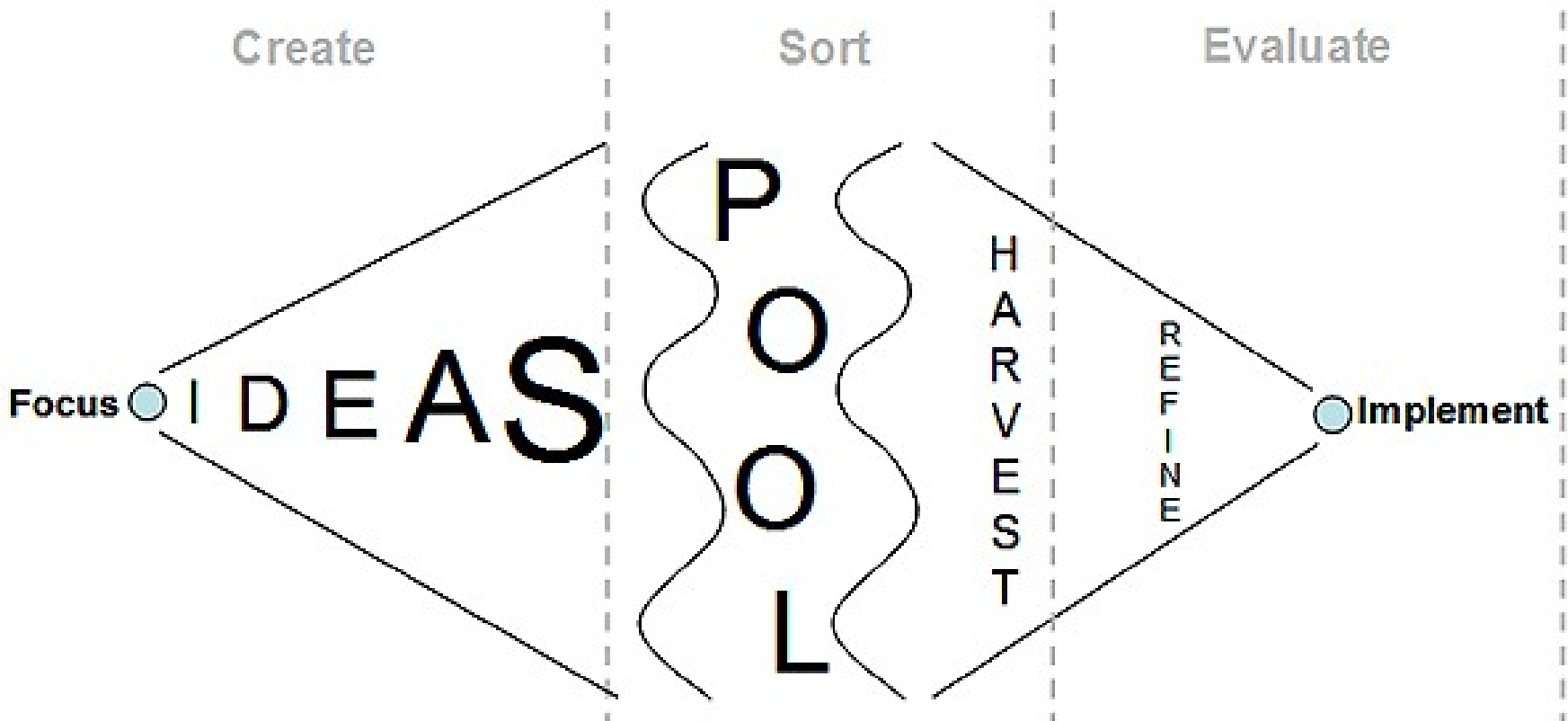
- 1- It generates **new value** for the users, and
- 2- It generates **utilities** for the company

Creativity vs. Innovation



CAMTIC

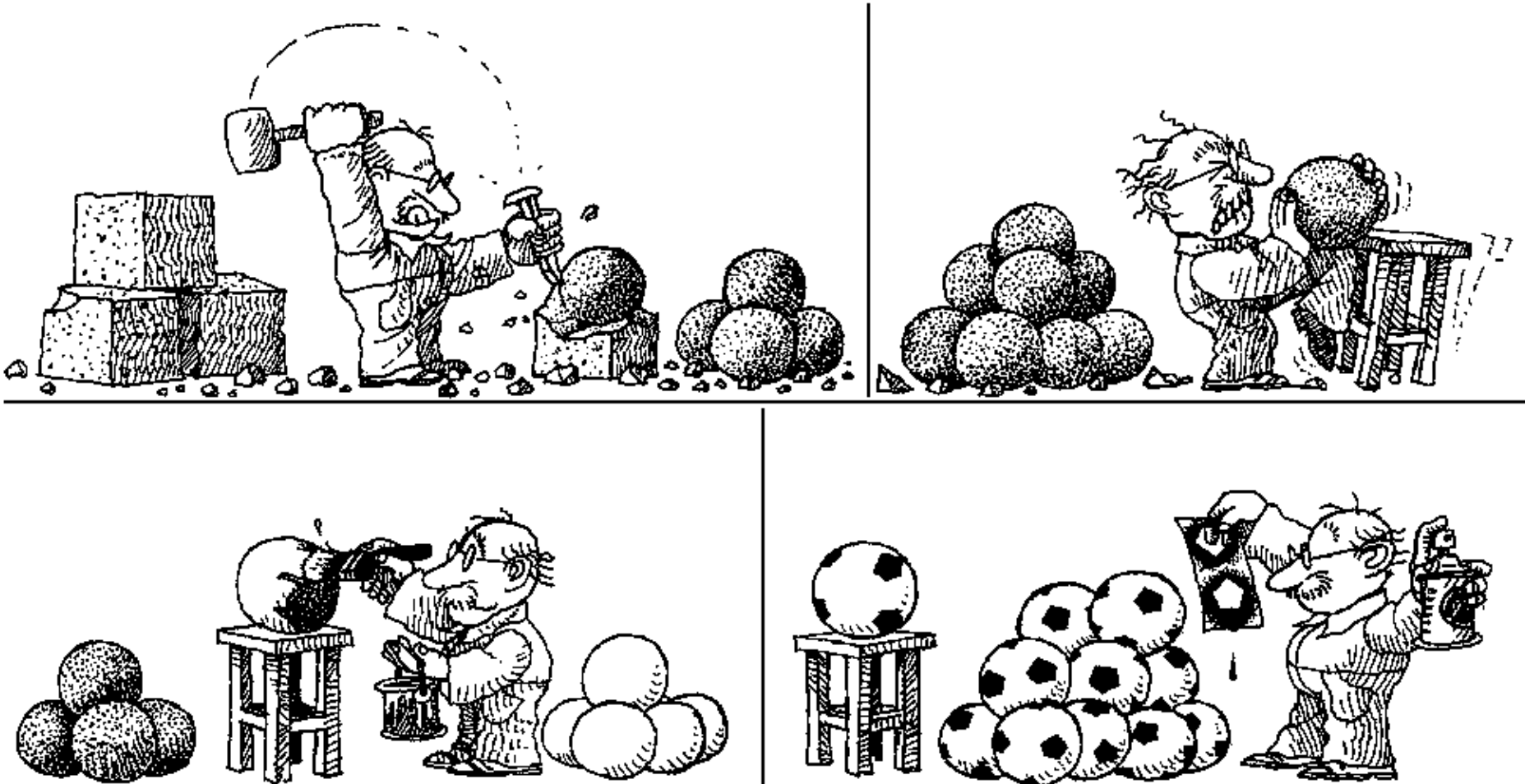
The Creativity and Innovation Flow - using The Innovator's Toolkit



Innovation is...



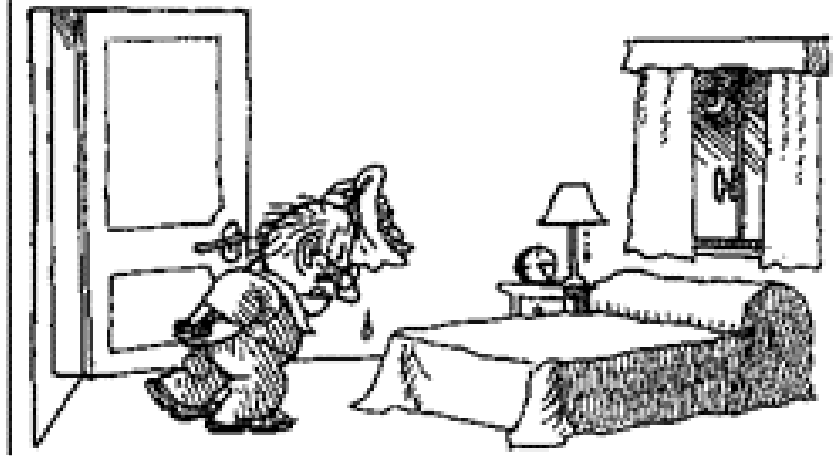
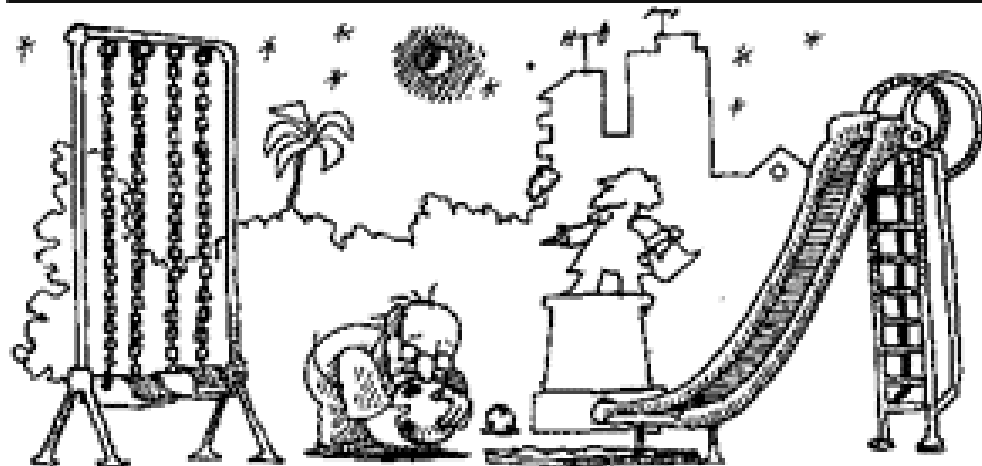
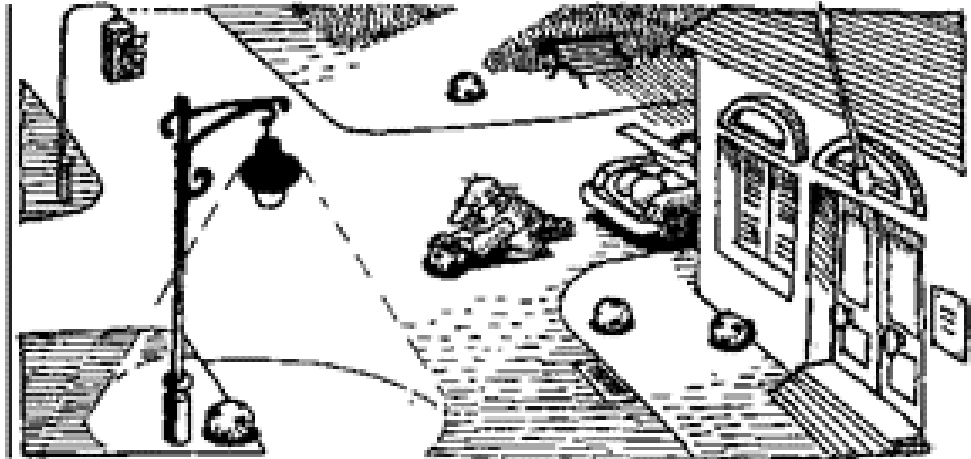
CAMTIC



innovation is...



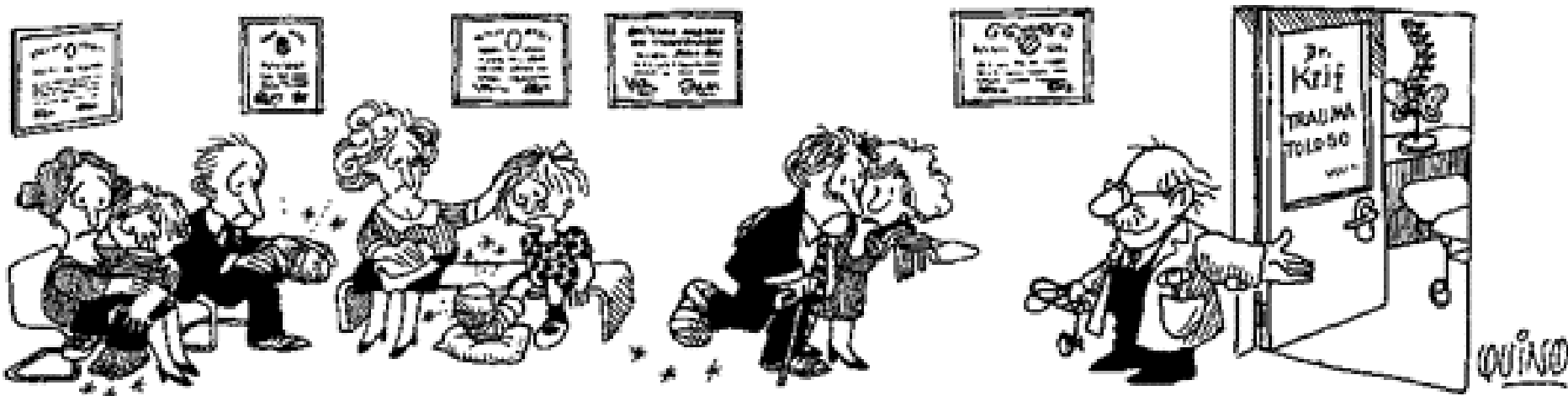
CAMTIC



innovation is...



CAMTIC

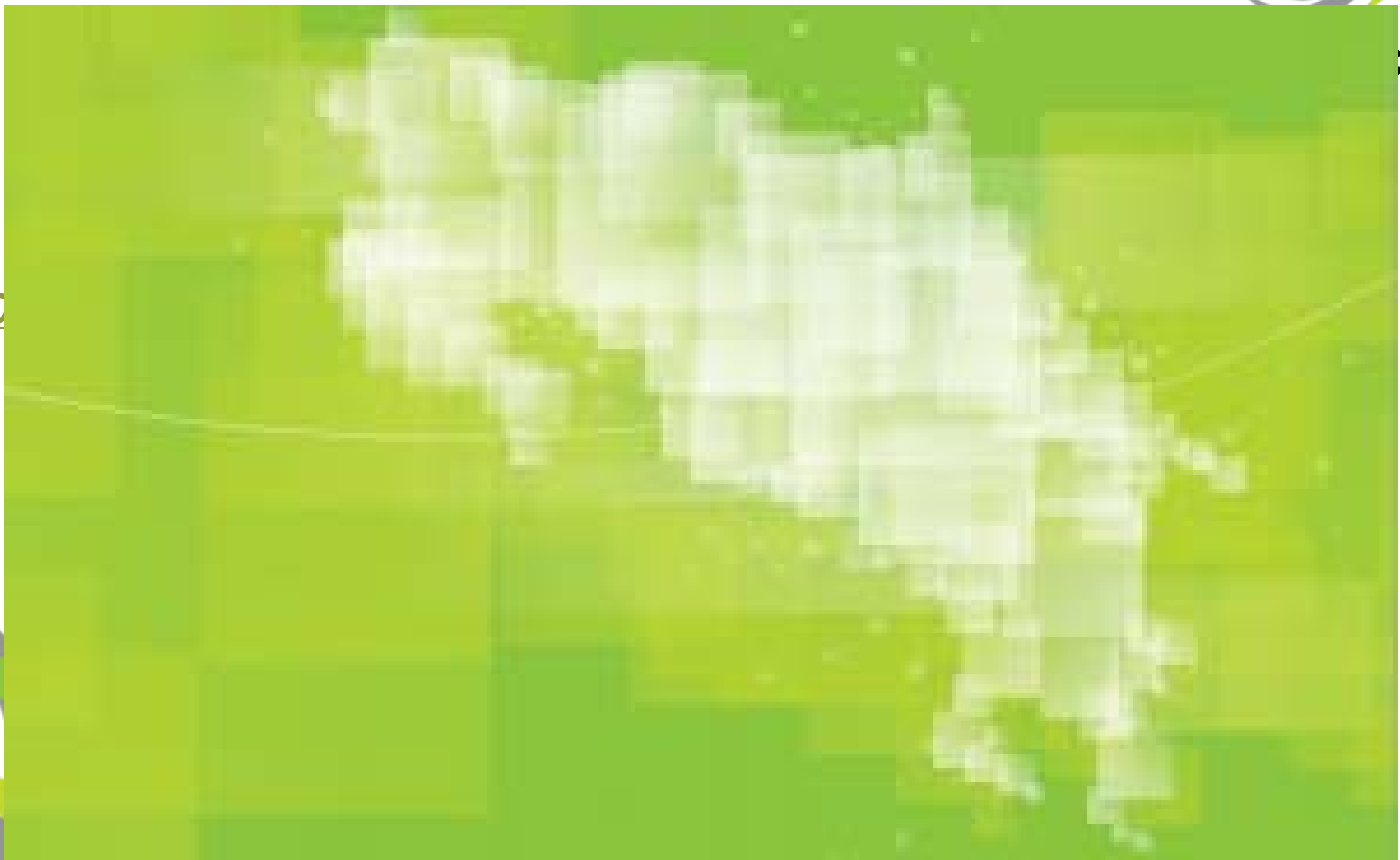




CAMTIC

About Costa Rica and it's innovation policies.

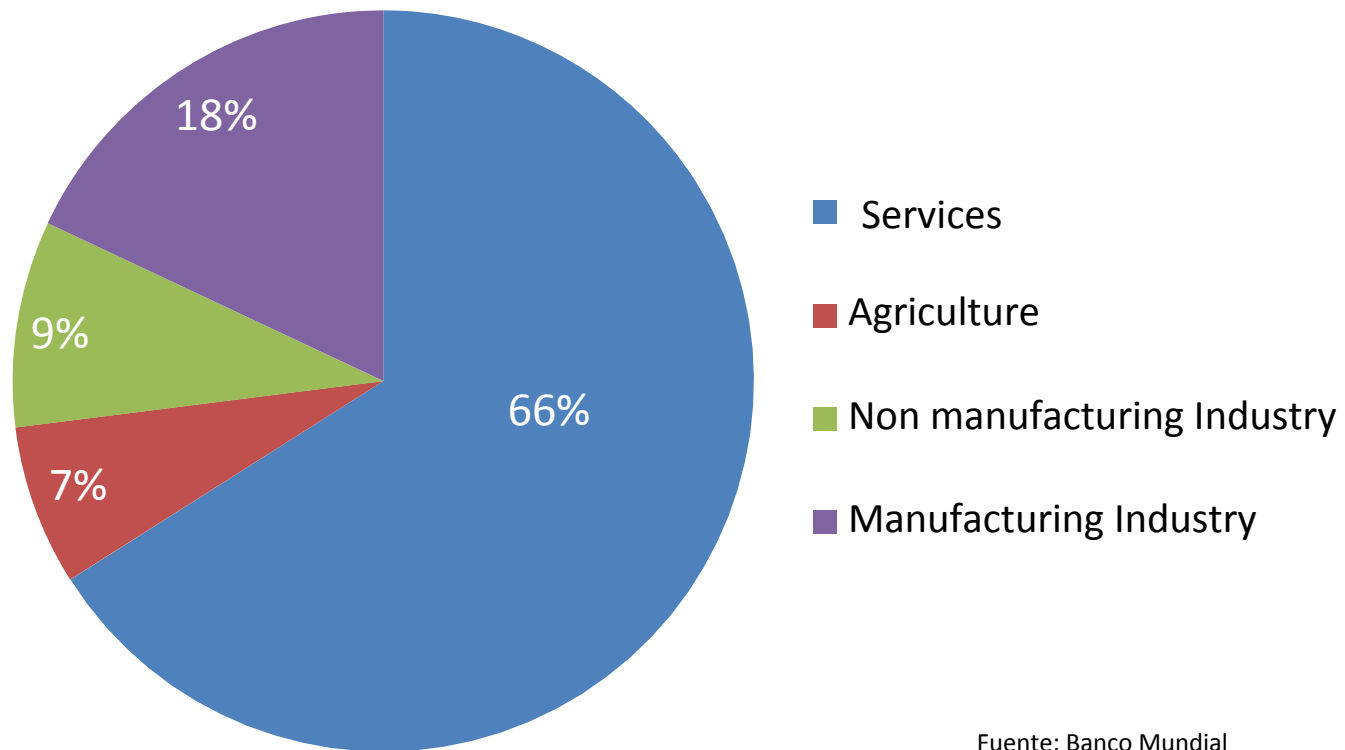






CAMTIC

Costa Rican Economy: GDP Composition



Fuente: Banco Mundial

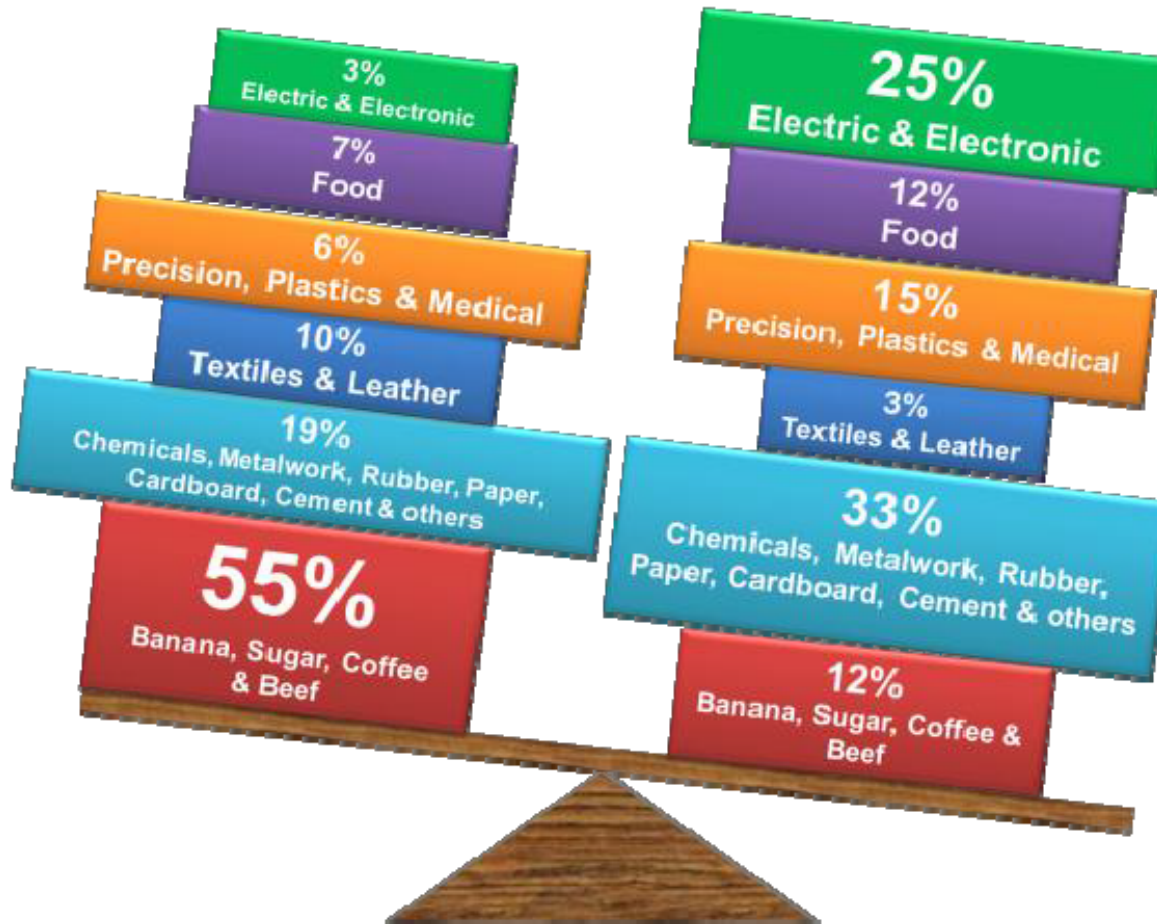
Diversification of Export Products



CAMTIC

Costa Rica: Exports, 1985
US\$ 1 billion

Costa Rica: Exports, 2011
US\$ 10.4 billion



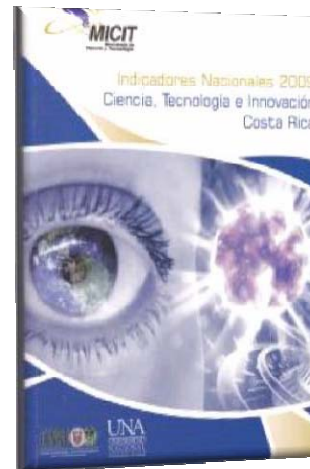
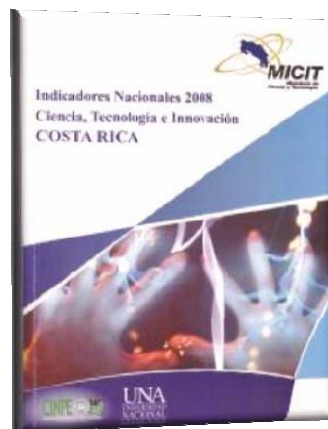
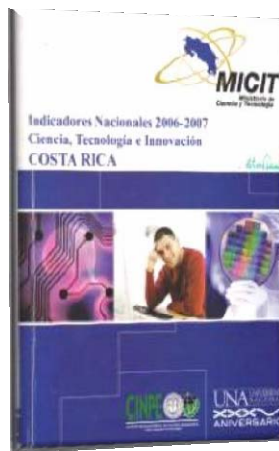
Source: CINDE, based on BCCR information



2. Science, Technology and Innovation Indicators



CAMTIC

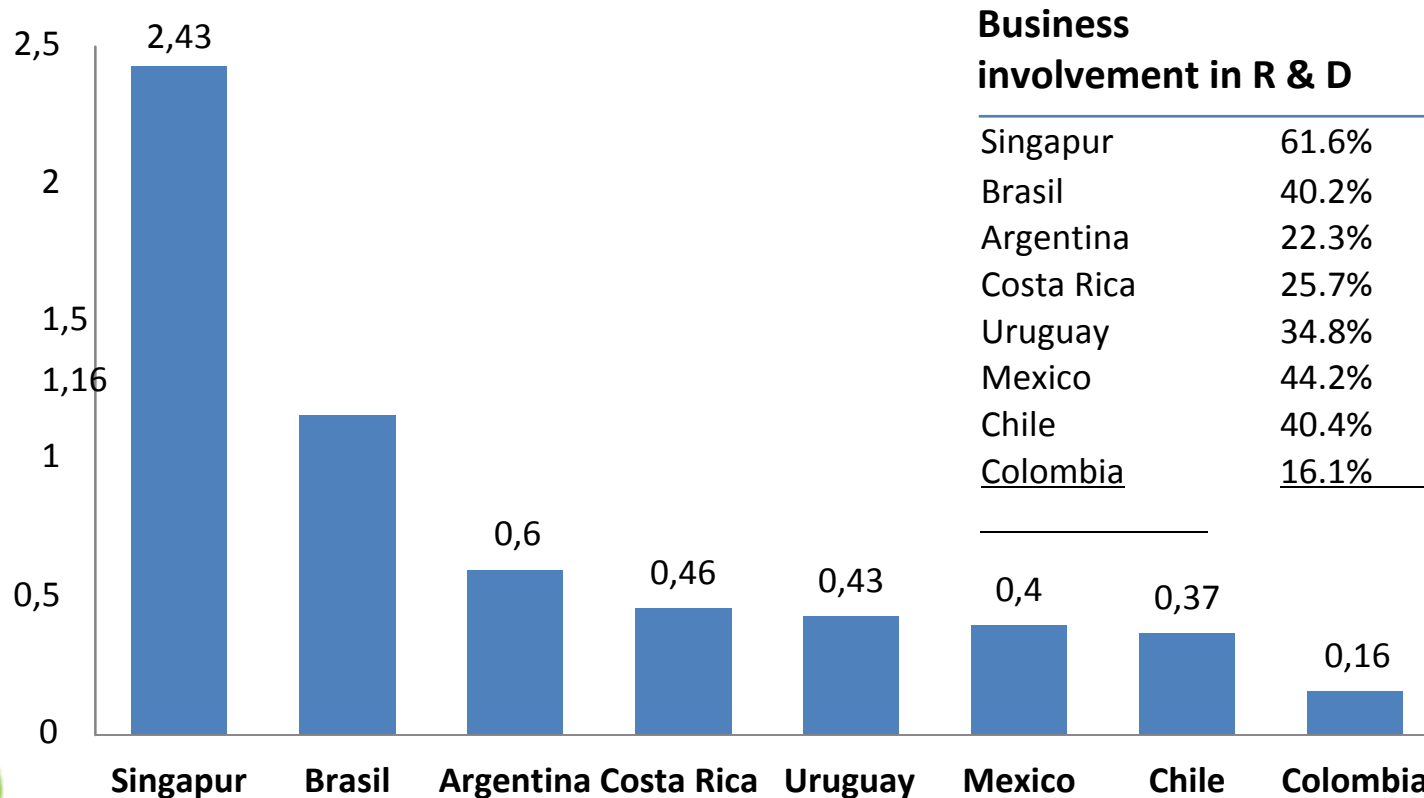




Investment in R&D as a % of GDP



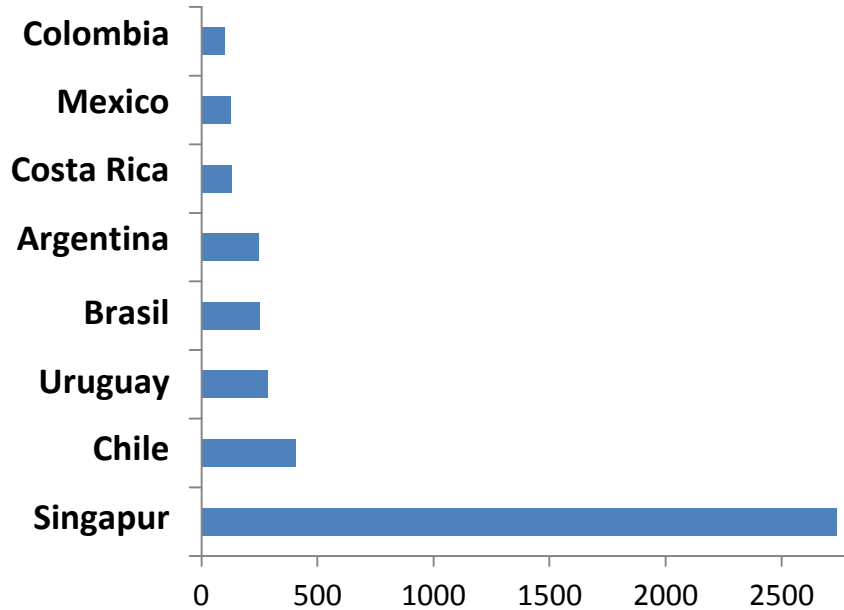
CAMTIC



Source: Database UNESCO



Scientific Publications per million inhabitants



CAMTIC

Patent application per million inhabitants

| | |
|-------------------|------|
| Singapur | 1848 |
| Uruguay | 196 |
| Chile | 159 |
| Costa Rica | 143 |
| Mexico | 121 |
| Brasil | 114 |
| Argentina | 113 |
| Colombia | 41 |

Source: Database of Scopus y OMPI 2012



Position in Global Competitiveness Index

WEF 2012-2013

| | |
|-------------------|-----------|
| Singapur | 2 |
| Chile | 33 |
| Brasil | 48 |
| Mexico | 53 |
| Costa Rica | 57 |
| Colombia | 69 |
| Uruguay | 74 |
| Argentina | 94 |

Suriname

114



CAMTIC

Position in Global Innovation Index

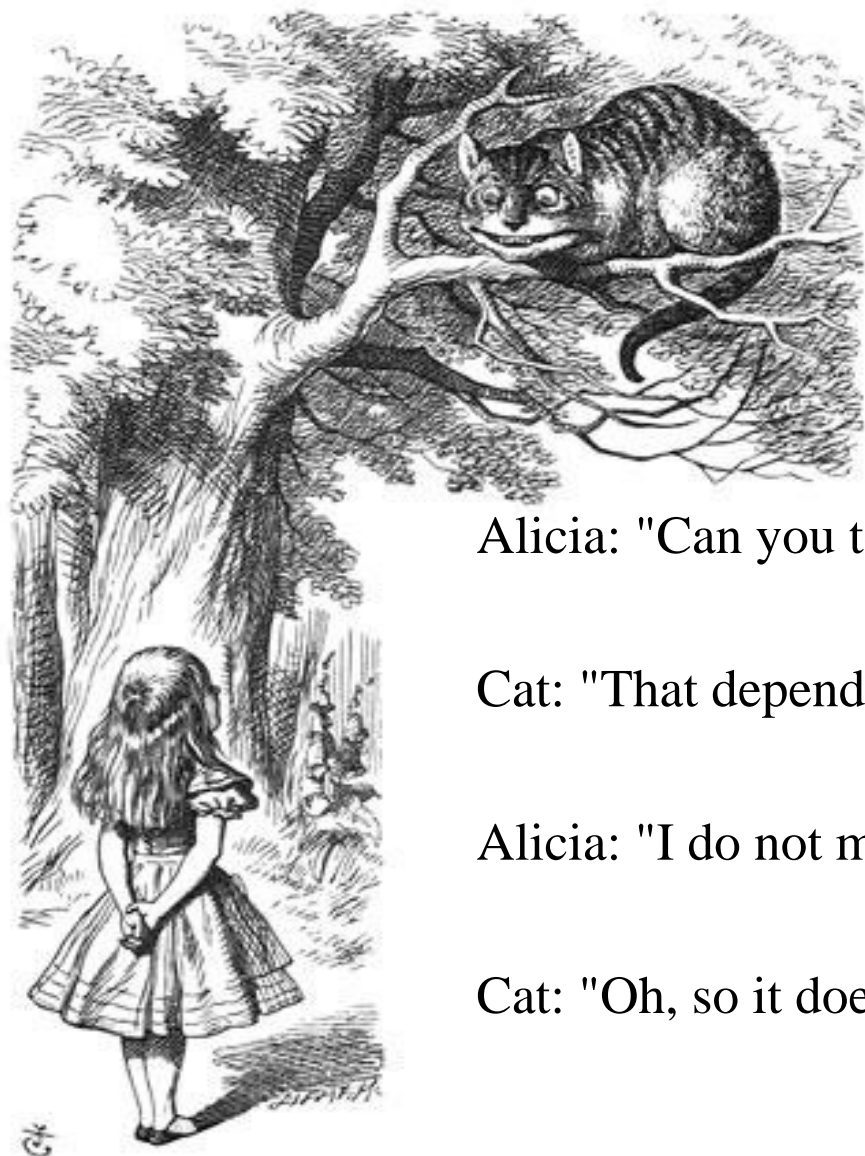
INSEAD 2012

| | |
|-------------------|-----------|
| Singapore | 3 |
| Chile | 39 |
| Brasil | 58 |
| Mexico | 60 |
| Costa Rica | 65 |
| Colombia | 67 |
| Uruguay | 70 |
| Argentina | 79 |

3. Strategic Planning of STi policies



CAMTIC



Alicia: "Can you tell me please, which way I have to go?"

Cat: "That depends on where you want to go."

Alicia: "I do not much care where."

Cat: "Oh, so it does not matter much which road you take."



Some efforts on S&T i Policies



CAMTIC



**XXI Century Strategy / Costa Rica
Green & Smart Strategy**



**Science, Technology and Innovation
National Plan 2011- 2014**



**National Indicators of S &T i 2006-
2011**



**Legal Frame: Law 7169, Law 8262,
Law 5048**

Science, Technology and Innovation National System

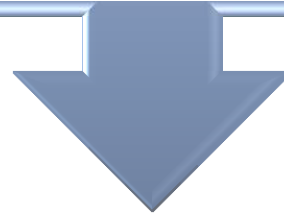
Law 7169 (August 1st, 1990)

To promote Scientific and Technological Development

Facilitate scientific research and technological innovation

Achieve greater economic and social advancement

Framed in a comprehensive sustainable development strategy



Law 8262 (May 17th, 2002)

To Strengthen Small Business

Encourage development of SMEs

Establish institutional support to SMEs

Ensure the training of highly competitive markets for SMEs

Facilitate SMEs' access to markets goods and services



National Plan of Science, Technology and Innovation 2011-2014

PLAN NACIONAL DE CIENCIA, TECNOLOGÍA E INNOVACIÓN 2011-2014



MINISTERIO
DE
CIENCIA, TECNOLOGÍA
Y
TELECOMUNICACIONES

Framework for priority actions

(Participant entities and experts)

Diagnostic
workshop

Science

Diagnostic
workshop

Technology

Diagnostic
workshop

Innovation

Identification of priority areas by subject

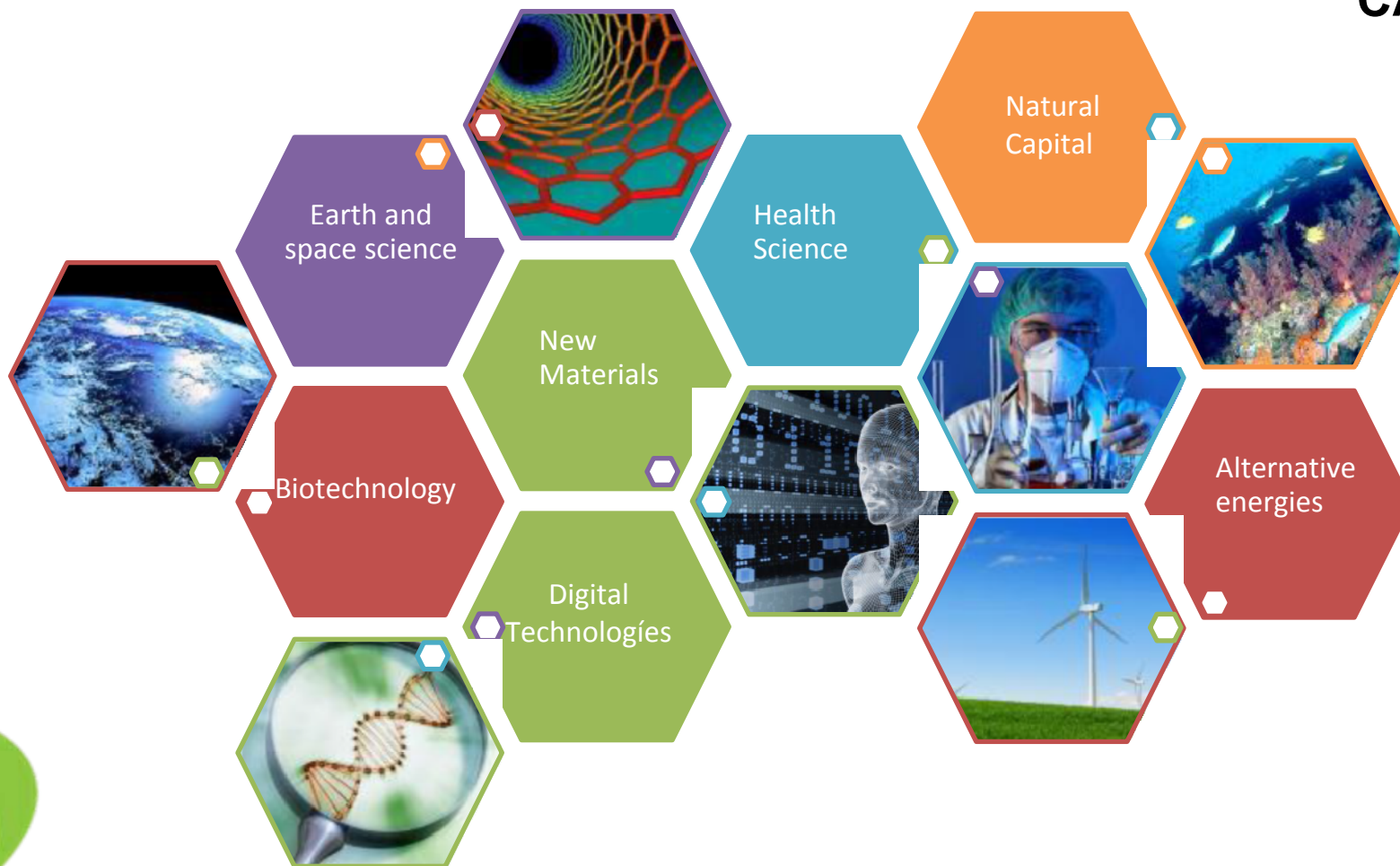
Consolidation and validation of seven priority areas

Strategies and action plans

Priority Areas STi (National Plan)



CAMTIC



Source: National Plan of Science, Technology and Innovation, April 2011.

Action Strategies

Funding / Investment

- Strengthen national capacities in STi and its impact on improving productivity and socio-economic development of the country through greater and better investment redirection.

Human resource on STi

- Strengthen training and upgrading of human resources of high level and its performance in basic sciences and engineering.

Social appropriation of science and promotion of vocations

- Social appropriation of science and promotion of scientific and technical vocations and entrepreneurship.

Institutional strengthening

- Strengthen the institutional framework for Science, Technology and Innovation



CAMTIC

Main Focus Facts



Public-private investment in R & D as a % of GDP

Amount and quality of the human capital available



5. Ministry of Science, Technology and Telecommunications



MTIC

HUMAN CAPITAL

- Strengthen training and upgrading of human resources of high level and the performance in basic sciences and engineering: including general education, technical and university

INNOVATION AND PRODUCTIVITY

- Strengthen national capacities and their impact on productivity, competitiveness and socio-economic development of the country through increased and better targeted investment in STi

DIGITAL STRATEGY

- Implement a Digital Social Agreement for narrowing the digital divide, promote public services, education and entrepreneurship by digital media.



Human Capital



CAMTIC



Productivity and innovation



CAMTIC

School for
Innovation

PROPYME
Found

CTI
Managers
Policy

Culture of
Innovation

Innovation
Managers
Certification

Technology-
Based Firms

National
Innovation
Portal

Intellectual
Property
Academy

Study
Science
Park

Digital Strategy



CAMTIC

CECIs:
Smart centers

Wireless
Costa Rica

CSIRT:
Cyber-security

E-science

Advance Networks

Digital Firm

Electronic agent

International cooperation and planning



CAMTIC

National plan
ICT

National plan
Development

ICT
Indicators

BID
Project

World
Bank
Project

Conventions
India, China,
Japón

OECD

ALCUE

CENIBIOT:
Biotechnology
innovation



Program innovation and human capital for competitiveness



CAMTIC

PRODUCTIVE INNOVATION

Development of entrepreneurial

Innovation projects and technology transfer

New Technology-Based Firms

ADVANCED HUMAN CAPITAL

Advanced Training Program of human resources

Talent Attraction Program

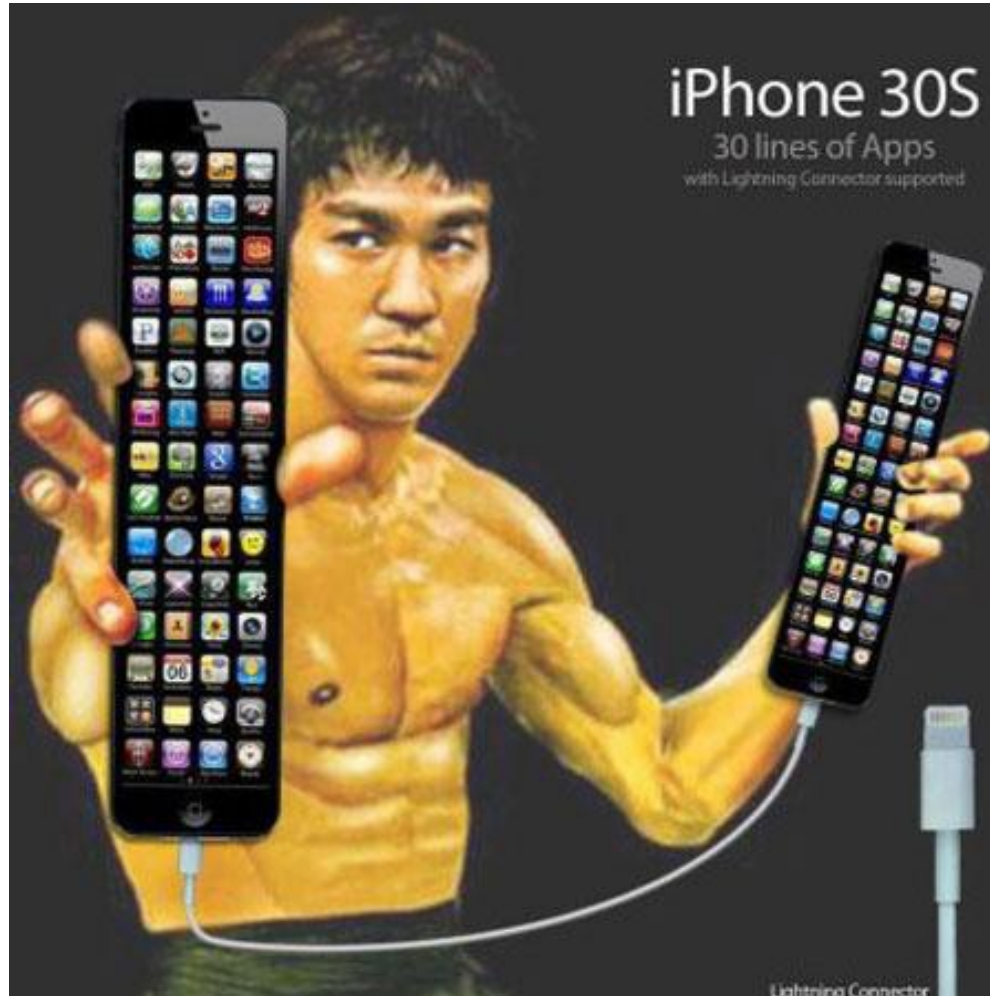
Professional Qualification Program



2nd Dream control:



CAMTIC



Also a neurotransmitter called dopamine, closely related to psychological Welfare states, is release by the brain



CAMTIC

FINANTIAL INSTRUMENTS OF STi POLICIES IN COSTA RICA





CAMTIC

Innovation: Development motor

“International empirical evidence shows there is a **stable and lasting relation between innovation investments and productivity growth** of countries and causal relationships runs from innovation to increased productivity and growth, not the other way around”

Crespi (2010)

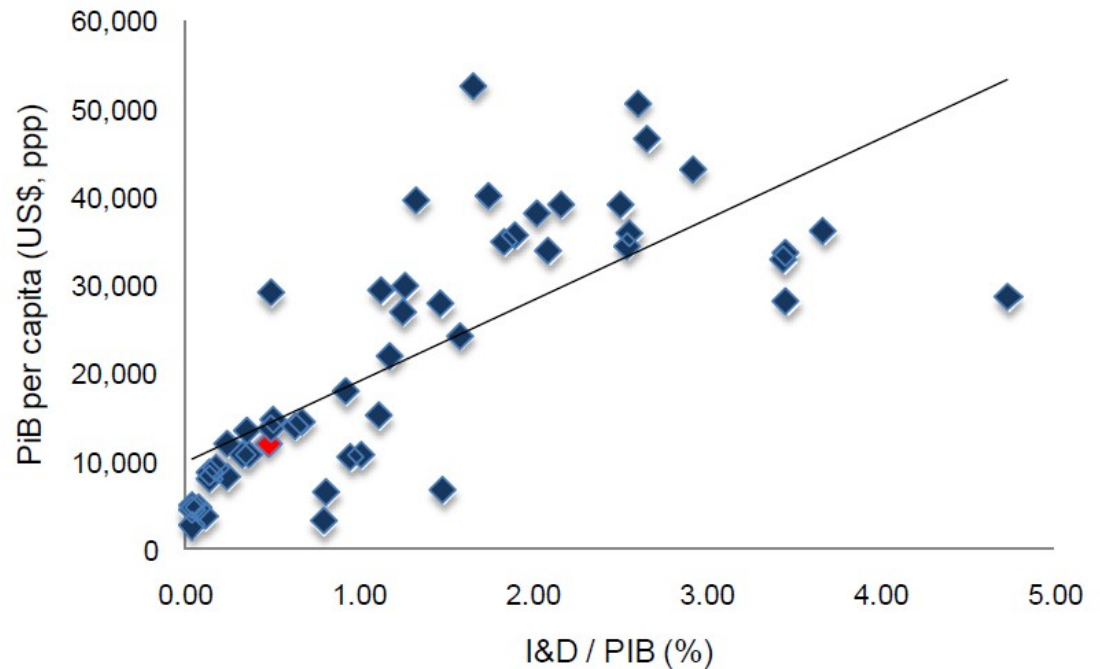


Innovation: Development motor



Companies spending on research and development (R & D), as well as NGOs and public sector is the most used sign to measure the level of innovation in an economy.

Evidence suggests that **high rates of innovation helps improve the welfare** of the inhabitants of a country.



Fuente: CINDE con datos de OECD (2010), Banco Mundial y FMI (2010)



Innovation: Development Engine



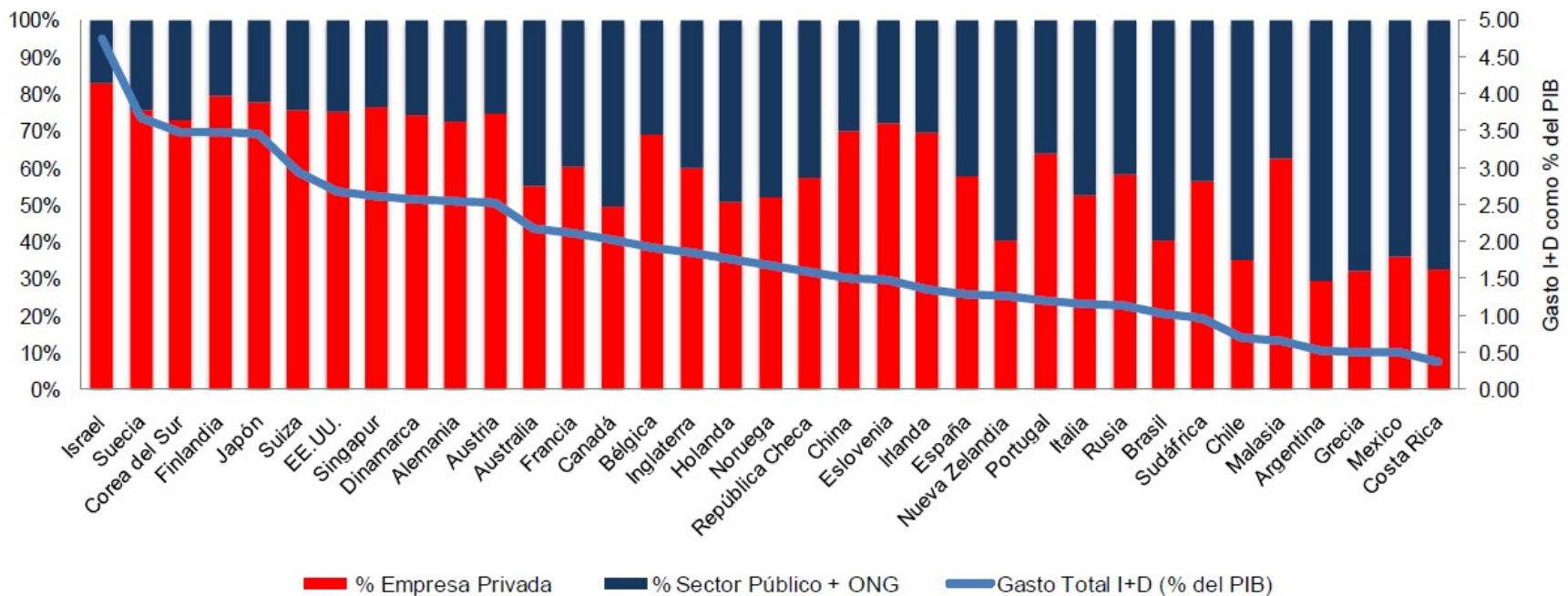
The private sector (business) is the **main actor in the innovation game**. Companies are the ones who create products, services and innovative business models.

In Costa Rica, the Government contributes with 2/3 of the resources for innovation and the rest comes from the private sector. **In the OECD countries is the reverse.**

Innovation and private investment in R & D + i



The more innovative a country is, the higher the proportion of R&D+I funded by the private sector.




Fuente: CINDE con datos de OECD (2010), Banco Mundial y FMI (2010)



Role of The State



State support should focus on **correcting "market failures"**.
These are the causes of low private investment in innovation.





Theoretical basis



CAMTIC

Welfare economics:

When markets operate in the absence of friction, distortions and imperfections, there is no need for government intervention to achieve a *Pareto optimum*.

Pareto optimum:

A situation in which no agent or economic group may be better, without making someone worse.

Market Failure or Government Failure:

Situation where the first best Pareto result can not be achieved through the markets and then it requires the State intervention to achieve a result as close as possible to the optimum.



Market failures related to innovation



CAMTIC

Fault 1: Knowledge as a "public good"

- * Welfare economics > goods are private (excluding + rivals) – both
- * Then: is knowledge a private good?
 - * Is knowledge "rival"?
 - * Is knowledge exclusionary?
- * Kernel discussion > excluding condition? > Intellectual Property schemes of each country

* **Consensus: the innovation is not private good, is Public Good**

* Implications:

- * ↓ **Investment in R + D of private sector**, in relation with the socially desirable.
- * Evident Reason: **lack stimulus**> unable to profit from it.
- * **Government must intervene with specific policies:**
 - * Commercial, IP protection, competition, risk capital; clusters

Market failures related to innovation



Fault 2: Positive externalities

- * A positive consequence of technological spills product of innovations
 - * **Spill: innovation** applied by a company tend to spill over the rest of the economy
- * When a company innovates > gains private profit, but at the same time > generates social gain
- * In most cases: social benefit is greater than private benefit
- * Implications:
 - * Innovative firm invests less than the socially optimal quantity
 - * "Comfort" from the others > get free knowledge
 - * Results in widespread underinvestment in R+D+i activities
- * This only can be corrected if > the innovative company gets paid by the benefits provided by the innovation from the businesses in touch with it.

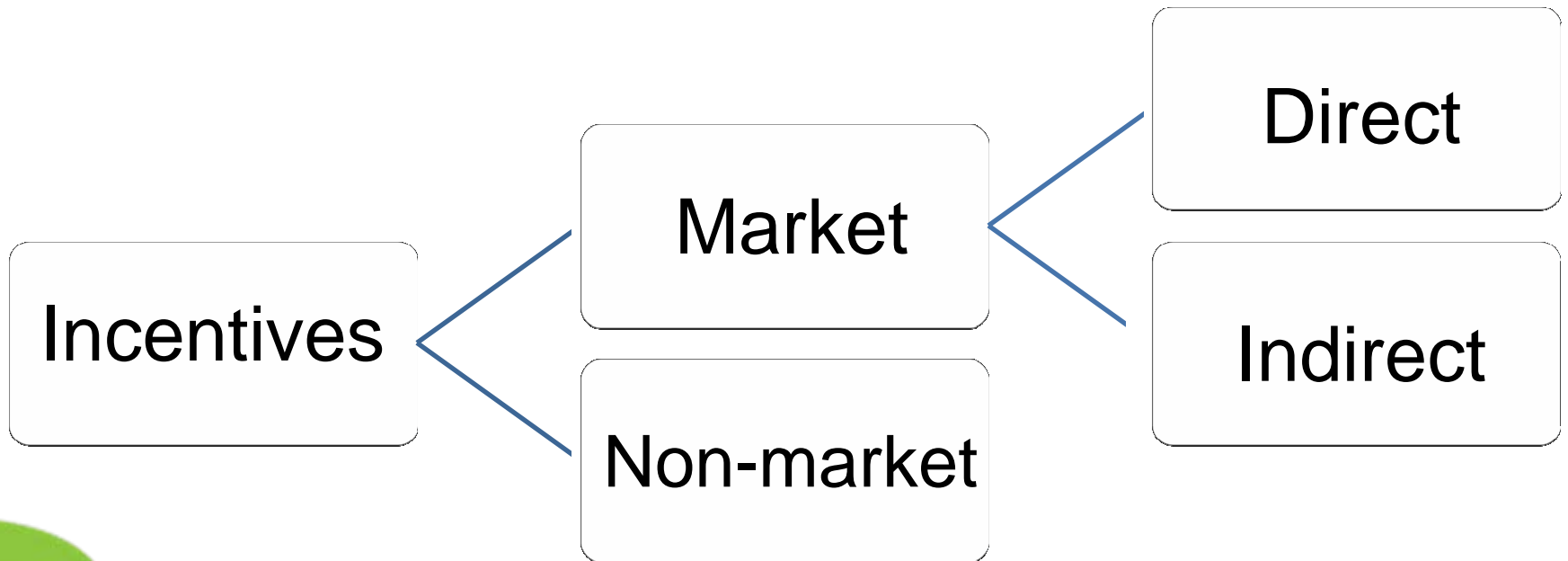
3rd Dream Control:



COPYRIGHT : MORTEN INGEMANN

When a person really laughs, decrease his/her levels of cortisol, a hormone known as the "stress hormone"

Classification of incentives





Direct



CAMTIC

Propyme
(SMEs Fund)

**Seed
Money**

**Incentive
Funds**

Fodemipyme
(SMEs Fund)





Indirect



CAMTIC

Technolog
y
Services
Centers

Technology
Transference
Offices

Incubators /
Accelerators

Creapymes

Private
initiatives





PROPYME




It is a program to grant funds for Costa Rican companies registered with the Economy, Industry and Commerce Ministry (MEIC) as SMEs.

- **Project Development**

- Innovation
- Technological Development
- Technological Services
- Intellectual Property
- Human Capital

- **No economic limits**

- Top funding percentage 80%
 - Counterpart Fund 20% (provided by the company)
- 



CAMTIC

PROPYME

- 2013:
 - ¢ 530.000.000,00 = US \$ 1.060.000,00 approximately)
- 2012
 - ¢1.200.000.000,00 = (US \$ 2.400.000,00 approximately)
 - 117 proposals
 - 88 projects approved
- 2011
 - 13 projects approved



INCENTIVES FUNDS



CAMTIC

Promotes:


- Professional Training for Human Resources
 - Science
 - Technology
 - Engeneering
- Research and development activities
 - Productive Sector / Academy



Seed Money



CAMTIC

- Law Banking System Development
 - Finance of projects
 - Entrepreneurs and businessmen
 - Projects up to ₪ 65.000.000,00 (US \$130.000,00)
 - Submitted (endorsement) by incubator / accelerator
 - Be approved by Internal Council
 - Failure:
 - “The system” assumes the loss (incubator / accelerator and SBD)
 - Success:
 - Entrepreneur / employer reimburses the money at a development rate.
- 

FODEMIPYME



CAMTIC

Two models:

a. Financing Fund

Supports:

- *Training and technical assistance
- *Technological development
- *Technology Transfer
- *Research
- *Development of Human Potential
- *Innovation and technological change

Maximum amount of credit

- *US \$ 150.000,00
- *120 months

FODEMIPYME



CAMTIC

Two models:

b. Guarantees Fund (MSMEs)

- Accessibility National Banking System
- Covers and finances projects with loan guarantees deficiency

75% of guarantee / loan amount

- Maximum amount of guarantee for beneficiary
C\$ 87.400.000,00 (US \$ 174.800,00)

Technological Services Centers



CAMTIC

CITA (National Center for Food Science and Technology):

- Food sector companies
 - Competitiveness
 - Innovation
 - Training
 - Analytical services (chemical and sensorial)
 - Consulting and research services

Technological Services Centers



CAMTIC

Clodomiro Picado Institute

•1970

•Health and Pharmaceutical Industry

- Basic research
- Teaching
- Social Action
- Production of immunobiological

Technological Services Centers



CAMTIC

CENIBIOT (National Center for Biotechnology Innovation):

- Stepping biotechnology
- Companies
 - From development to final testing of biotechnology innovation
 - Use of living organisms to obtain goods or services
 - Fermented drink coffee (2011, INFOCOOP ITCR)

Technology transfer offices



CAMTIC

PROINNOVA (UCR):

- Gives and sells licenses
 - Technologies developed or adapted by Costa Rican University (UCR)
- Relationships University / Business
- Intellectual Property Advisory Training

Link Center University - Business(ITCR):

- Basic Counseling on Intellectual Property
- Contact with research centers (ITCR)
 - Improvement of Products or Services
- Contact: University-Business
 - Productive Chains



CAMTIC

Incubators / Accelerators

- Organizations where **entrepreneurs** can **apply for support to develop** their own business.
- Entrepreneurs can also come for **early support** in developing their businesses.
- CIE-TEC, AUGÉ, UNA-INCUBA, La Libertad Park, etc.



CREAPYMES



Specialized Care Center for the Development of **micro, small and medium enterprises:**

- Information Services
- Consulting and Advisory services
- Networking and tramitology information

- **Accessing support**

- Access to Finance
- Access to New Markets
- Production linkages
- Business Development
- Technological innovation and
- Corporate responsibility

- 25 offices nationwide

PRIVATE INITIATIVES




CAMTIC

- **Loans with special conditions:**

Gives access to credit for those who want to start their own business, by promoting loan products, accessible and efficient advice to reduce the risk in its loan portfolio.

Examples: Bancrédito (BCAC), BNDdesarrollo (BN), BACPymes, Costa Rica – Canadá Foundation, ACORDE (Costa Rican association for development organizations), ADRI (Partnership for integrated rural development), Women Foundation, etc.

- **Contests:** Yo Emprendedor, Bayer, etc.
- **Incubators / Accelerators :** Parque-Tec, Chamber of Commerce, etc.
- **Training / coaching:** Procomer, CAMTIC, CICR, Cadexco, etc.



“Ay de aquellos países que no utilicen a la ciencia como guías en sus empresas, se quedarán postergados y estarán supeditados al desarrollo de los demás, porque en las sociedades actuales, aquéllos que utilicen mayor conocimiento y sagacidad, serán los que logren ventajas sobre los otros...”

“Woe be those countries that do not use science as a guide in their enterprises, they shall be left behind and shall be subject to the development of others, because in today's societies, those that use more knowledge and sagacity, shall be those that achieve advantages over others...”

-José María Castro Madriz
Presidente de Costa Rica
Discurso en la inauguración de la Universidad
de Santo Tomás
Setiembre 15 de 1844

***Thank you for not falling
asleep...***



CAMTIC



Or at least for not nodding....

Thank you...

Otto Rivera Valle



e-mail

orivera@camtic.org



+506 2283-2205



Ottoriveravalle



ottorivera



orivalle



Otto Rivera Valle

www.camtic.org

www.CostaRicaisIT.net