Software (SW)
Industry Challenges

PERSPECTIVES FROM DEVELOPING COUNTRIES

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• Software, DNA (enabling) the Digital Economy…
• TecApro®, the (pioneer) SME that started it all…
• Costa Rica, a (sustainable) digital ecosystem living lab…
• Challenges, (surviving) the globalization…
• Opportunities, (driving) the globalization…
Software, DNA (enabling) the Digital Economy...

- The **DNA** of the digital economy
- Transversal **enabler**
- **Strategic** piece
- **Critical** technology
- **Conditional** (potential limitation)
- **Transformational** tool
- **High complexity** component
- Very **fast evolution**
- Source of **Innovation**
- Art **or** Science?... Art & Science?
- Highly depending on **human talent**
- Highly depending on **global knowledge**
- Highly depending on **global networking**
- Requires a **complex digital ecosystem**
the (pioneer) SME that started it all...

- A success case of a professor and its top students (UCR-1986)
- 1st export-driven / IP SW Co in CAC
- Pioneer SW exporter in CAC
- 1st technology-based SW Co in CAC
- Directly providing SW & related services to over 20,000+ SMEs in 24 countries (as of 2012)
- Directly providing SW components & related services to 12+ leading global technological companies (and indirectly its customers)
- Strong focused on innovation and quality (first IT company in CAC ISO certified since 2003)
- Deeply into new business models and diversification strategies
- Several awards locally and internationally
• TecApro-SACET® | PBX & IP-PBX software/services specialist (165+ PBX Vendors / 1000+ PBX & IP-PBX models)
• TecApro-BOS® | Business Operating System specialist (integrated suite of ERP, CRM, SCM, BI solution for SMEs)
• TecApro-EVICERTIA® | Certified digital evidence services experts
• TecApro INDROMICS® | 1st Bioinformatics company in CAC (alliances with Illumina and BGI-China)
• TecApro IMAPP® | Digital inspection of civil and public constructions (in alliance with APPLUS)
• TecApro INFONET® | Networked IT services and security specialist (in alliances with British Telecom, Cisco, EMC, Fortinet, Tigo/Millicom, Telefonica, ICE, Cable & Wireless)
TecApro® the (pioneer) SME that started it all...

- SW developer, customer, IP and high value added centric
- Success transitioned into SaaS / Cloud / Apps new technologies
- Success transitioned into subscription based new business models
- Recurrent incomes are 118%+ of operational costs (up to 2012)
- High emphasis on attracting/retaining talent (<3% annual turnover)
- Blending several high productivity SW development tool
- 15%+ revenues to R&D& Innovation
Costa Rica, a (sustainable) digital ecosystem living lab...

- Pioneer **SW development companies triggered CR’s high tech vision** (1986)

- Strong **investments in human and social development** (i.e. education, health, infrastructure - after abolishing army in 1948-) had created the foundations

- Government fostered the vision and placed key public policies to boost digital opportunities:
  - computing as a regular subject in public systems from primary school and up – since 1987–;
  - Creation of the Ministry of Science, Technology and Telecommunications -1987-;
  - English as a second language program on public system from preschool -1994-;
  - no taxes to microcomputers and related - since 1986-;
  - ICT national strategy & multi-stakeholders structure since 2003 – **Costa Rica Green & Smart 2.0**
  - FDI’s national strategy (high tech focused) matching to boost the national assets and capabilities
  - Strong liberalization of foreign commerce (multilateral (WTO) and multiple free trade agreements (US, Canada, Mexico, China, Chile, Colombia, Peru, Central America, The Caribbean, Singapore, European Union (*), others
  - By Constitution, 8% of GDP allocated to education and 1% additional to develop public universities infrastructure
• **Ranked 4th**: high tech exporter of industrial products (WB 2012)

• **Growing links and partnerships** between local SW industry and FDI high tech multinational firms

• **Ranked 10th**: population skills and preparation to take advantage of digital economy’s opportunities (WEF, 2011)

• **Ranked 23rd**: top public educational system (WEF, 2012)

• High tech services exports **increase annually by 21.8% average** since 2000

• In 2012, high tech services related exports were **higher than all combined agro & natural resources exports**

• SW industry is a key player at the national digital ecosystem, fueling several other high tech industries and sectors

• Public policy focuses in building a healthy digital ecosystem
Challenges, *(surviving) the globalization*...

- SW industry as a **key players for sustainable** knowledge society
- Entering into **new technologies and business models**
- SW: **from IP licensing to a service subscription** (SaaS/Cloud/Apps/Mobile)
- New business models and innovation pressures **demand high financial capital**
- SW industry **moving from talent based to capital based** industry
- **IP**: still not a banking asset
- Fast and high SW development and **high productivity tools**
- Shift from **traditional to non-conventional** programming tools and methodologies
- Getting and retaining the right **number and quality of talent**
- Is SW becoming **a commodity**?
Opportunities, (driving) the globalization…

- Over 98% of SW companies are SMEs and they are accounted for a similar participation in employment
- They are also accounted for significant proportion of innovation in digital technologies
- SW SMEs as ‘economic cells’ to boost digital economy
- SW SMEs are key agents in disseminating and transferring digital technology in developing economies
- Economies of scale based global business models can (MUST) be conciliated with SW SMEs: i.e. TecApro
- Partnership between SW industry, FDI firms, Governments, Academia and NGOs is a must to boost opportunities and address the challenges
- Human talent is critical for SW SMEs and SW sector
- Business models and technology are equally important to SW SMEs strategy
- Financial capital, IP and innovation are key to boost SW SMEs through globalization challenge
- SW sector must be incorporated in public policy approaches, as part of the digital ecosystem