

ICT in Paraná Region Brazil

**ENRICH Webinar
Innovation tour 2019
4th July 2019**

Parana's IT Strategic Plan 2014 Partners:



World's IT Market

O MERCADO MUNDIAL DE TI - 2015 / IT World Market - 2015

Total - US\$ 2,2 trilhões

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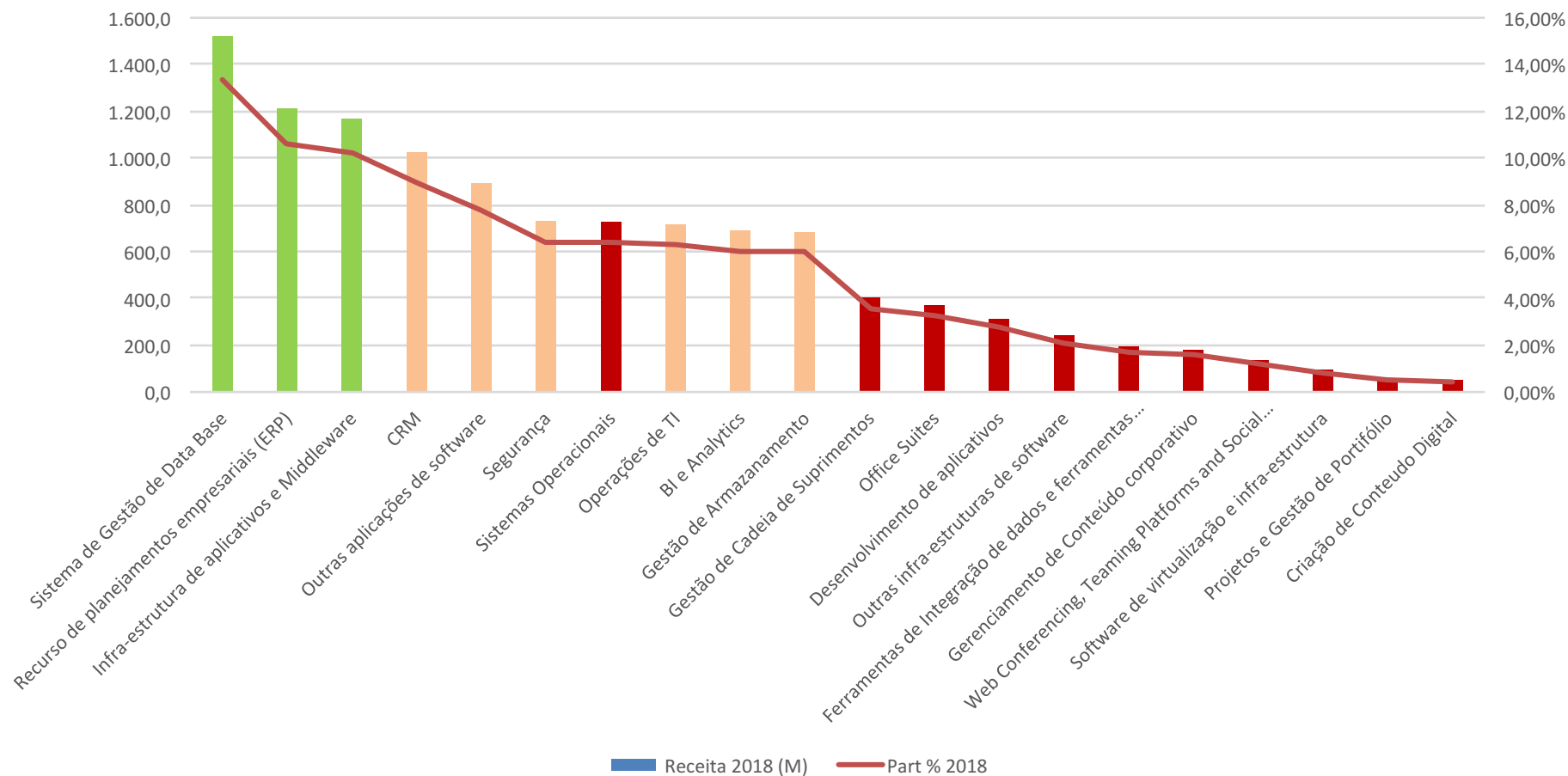
Apenas o mercado interno, excluídas as exportações. Domestic market only, export excluded.

Latin America IT Market

MERCADO LATINO-AMERICANO DE TI 2015 - US\$ BILHÕES / Latin American IT Market - (US\$ Billion)



Latin America: Market Areas Revenue (in Millions US \$) x Share%



Source: Gartner Enterprise Software Forecast 2016 Q1. Prepared by SEBRAE-PR.

Brazil's IT Market Synthesis

O MERCADO BRASILEIRO DE SOFTWARE E SERVIÇOS - 2015 / Software and Services Brazilian Market - 2015

SOFTWARE	SERVIÇOS	INDICADORES GERAIS DE TI
<ul style="list-style-type: none"> • Mercado doméstico de US\$ 12,3 bilhões • Crescimento de 30,2% em relação a 2014 • Representa 2,9% do mercado mundial • Exportação de US\$ 245 milhões • Conta com 10.140 empresas dedicadas ao desenvolvimento e comercialização 	<ul style="list-style-type: none"> • Mercado doméstico de US\$ 14,3 bilhões • Crescimento de 8,7 % em relação a 2014 • Representa 2,4 % do mercado mundial • Exportação de US\$ 680 milhões • Conta com 3.811 empresas dedicadas à exploração econômica 	<ul style="list-style-type: none"> • Crescimento de 9,2 % em 2015, atingindo US\$ 60,0 bilhões • Brasil representa 45,0 % da América Latina • Brasil representa 2,7 % do mercado mundial de TI • 6,5 milhões de PC's vendidos em 2015 • 64 milhões de computadores instalados em 2015 • 120 milhões de usuários de Internet em 2015
SOFTWARE	SERVICES	GENERAL IT INDICATORS
<ul style="list-style-type: none"> • Total Domestic Market of US\$ 12.3 billion • Growth of 30.2 % over 2014 • Represents 2.9 % of world market • License export of US\$ 245 million • 10,140 companies in the market 	<ul style="list-style-type: none"> • Total Domestic Market of US\$ 14.3 billion • Growth of 8.7% over 2014 • Represents 2.4% of world market • Export of US\$ 680 billion • 3,811 companies in the market 	<ul style="list-style-type: none"> • Total IT Market of US\$ 60 billion in 2015 • Growth of 9.2% over 2014 • Represents 2.7 % of world market and 45% of L.A. market • Sales of 6.5 million PC's units in 2015 • Installed base of 64 million PC's • 120 million internet users in 2015

The Region in the Latin America Context



The main capitals of the MERCOSUL countries (Buenos Aires, Montevideo and Asunción) are within a maximum radius of 1,800 km from Curitiba, capital of the state of Paraná.

- On that radius are: 37% of the population of those countries
- Most of the GDP of these countries
- Foz do Iguaçu is projected more than 530 km in the direction of the Mercosul and Latin American countries.

IT Market In Brazil

- IT market in Brazil were equal to $\frac{1}{3}$ of Peru's GDP



Source: IDC, Gartner and CIA World Factbook. Elaborated by SEBRAE-PR, 2017.

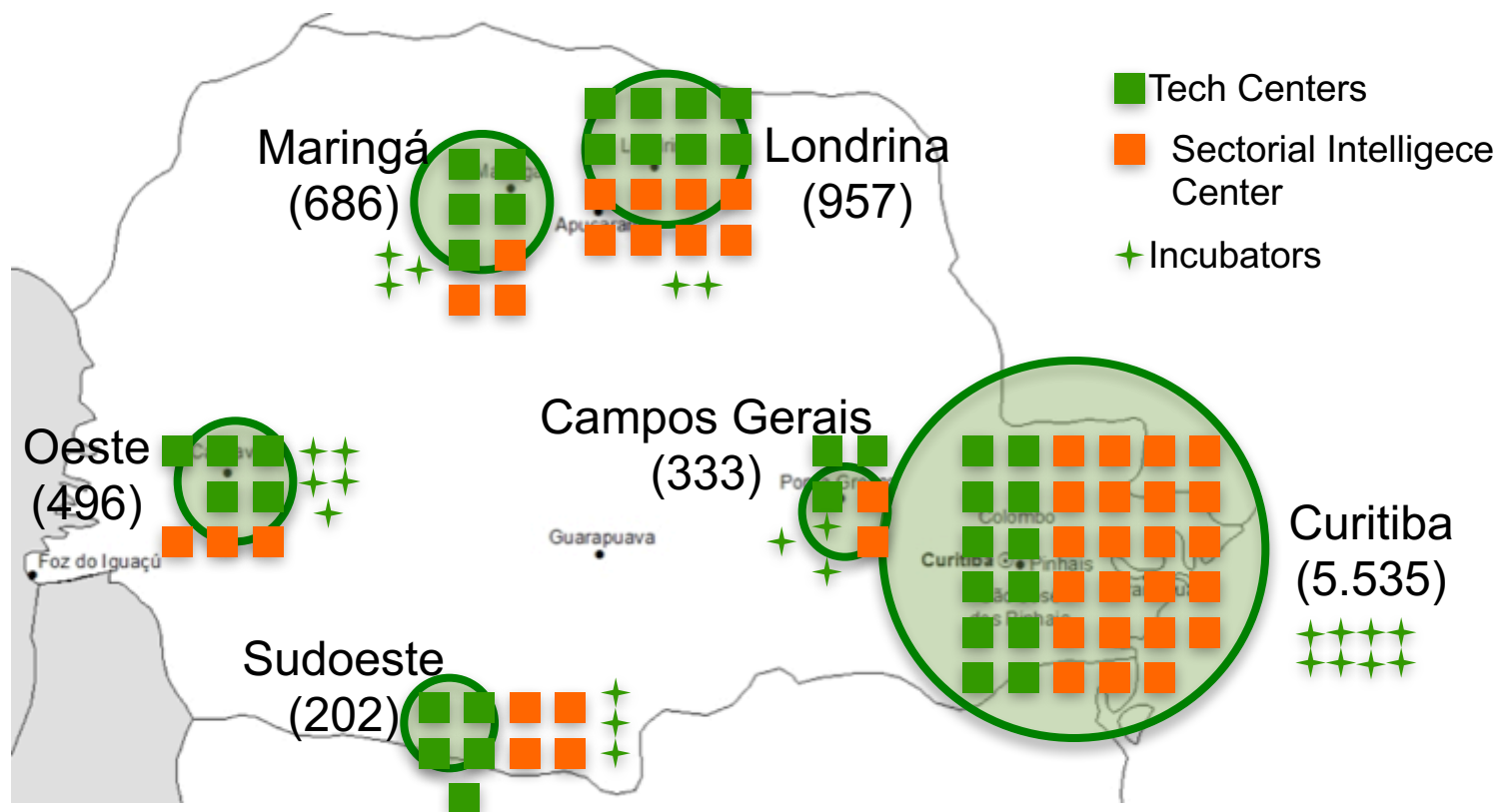
IT Market in the Regional Market

- The net IT income in Paraná was equal to 23% of Nicaragua's GDP, 2017



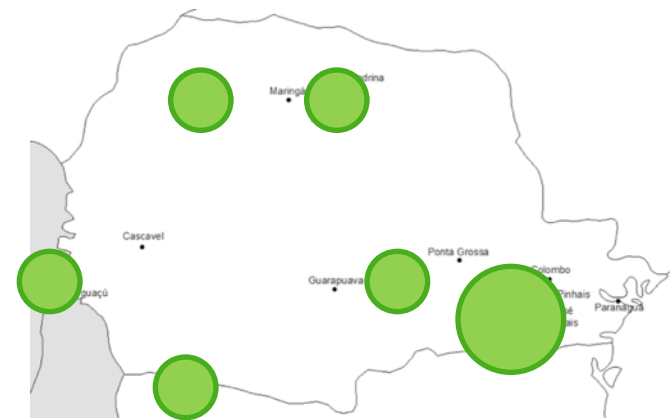
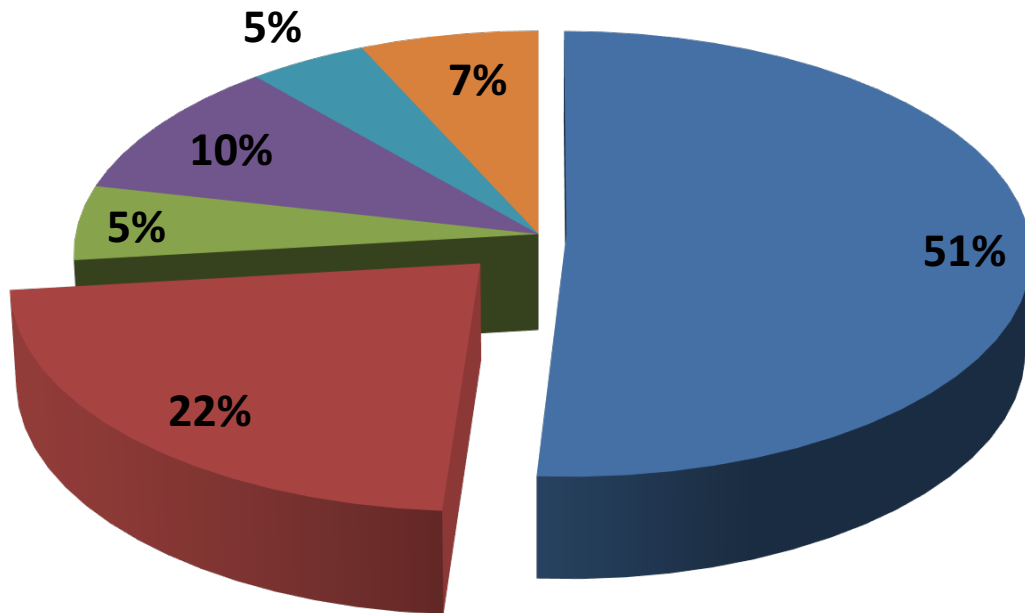
Source: IDC, Gartner and CIA World Factbook. Elaborated by SEBRAE-PR, 2017.

Parana ICT Sector



**8.416 companies,
22.941 jobs**

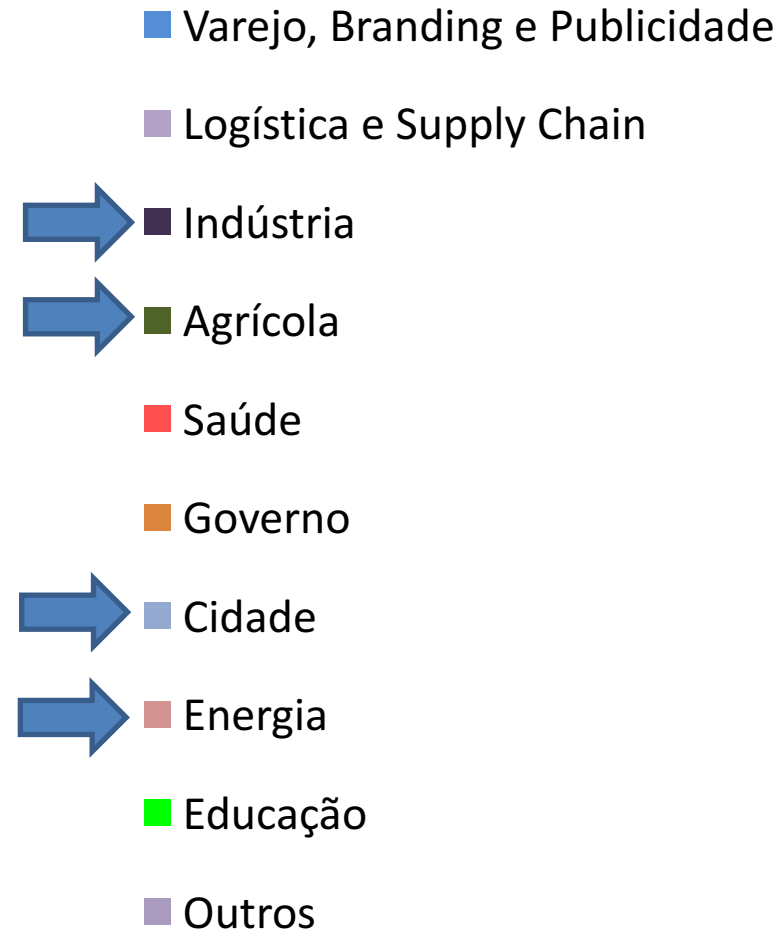
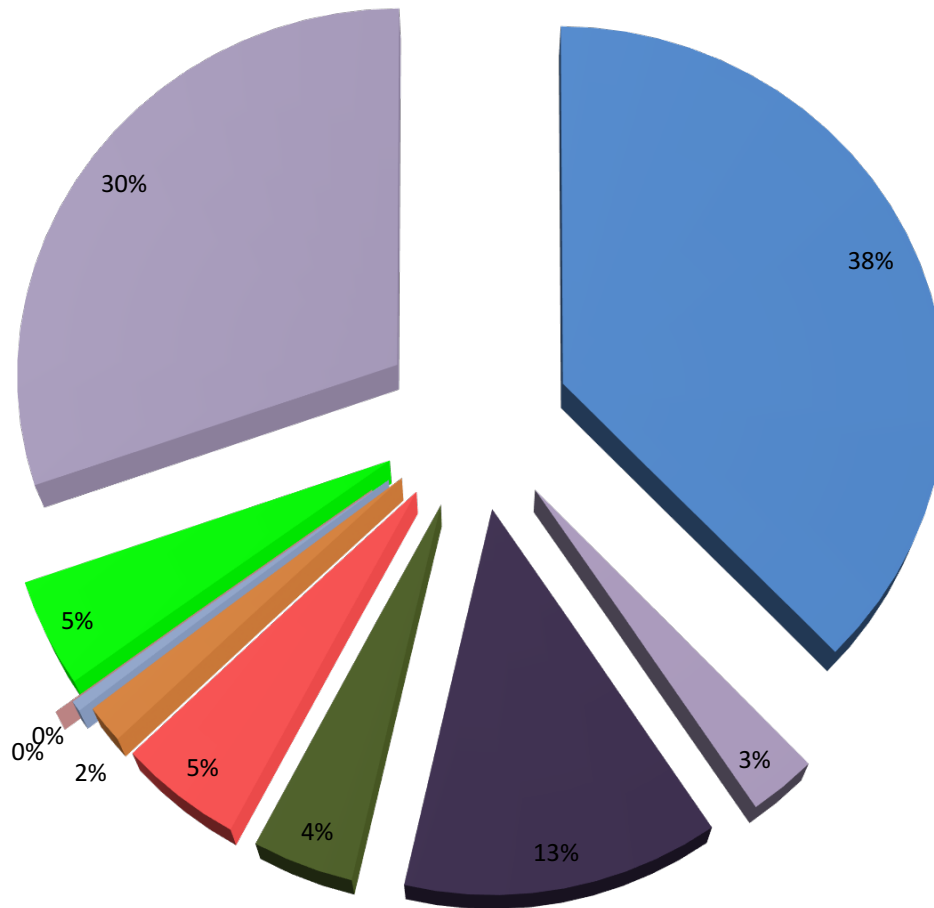
ICT Companies by Activity



- ERP / Gestão de Processos
- Software house
- Consultoria TI
- Web / Mobile
- Hardware
- Outros

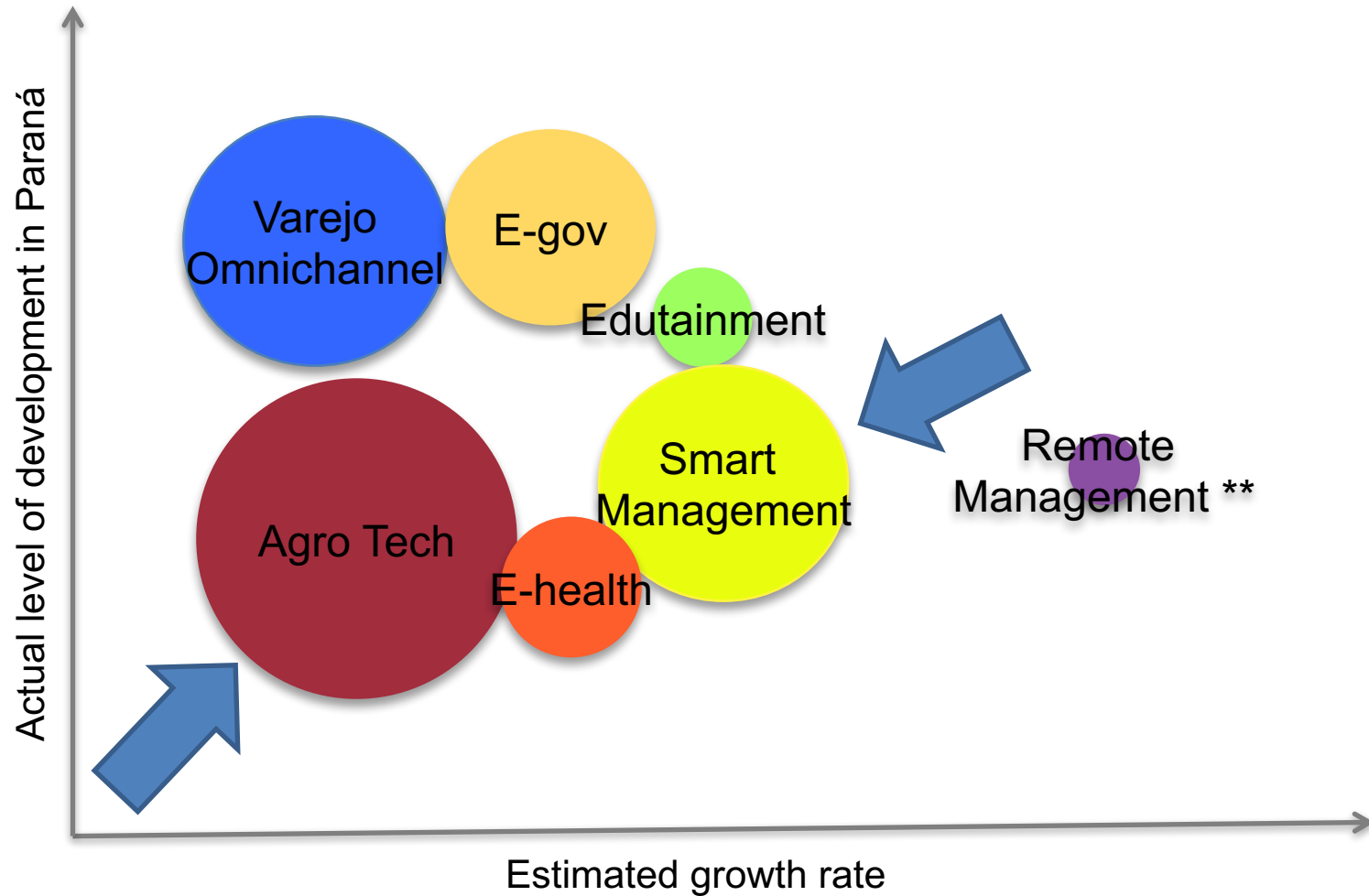
In Paraná ERP and Software houses dominates the scene

ICT Companies: Areas of Application



Base: Mapeamento dos APLS – 444 Empresas
 Source: Reaserch on 444 companies on all 6 IT Clusters in Paraná, 2014.

Market Potential



* The area size represents market potential (2014)

** Considers only *Supply Chain Management*, Remote Management real market size is estimated 2-3 times bigger

Source: Paraná's IT Strategic Plan. Proprietary design of Gartner Consulting Forecasts data for 2014 and 2018.

Approach



Nexus of Forces

Physical

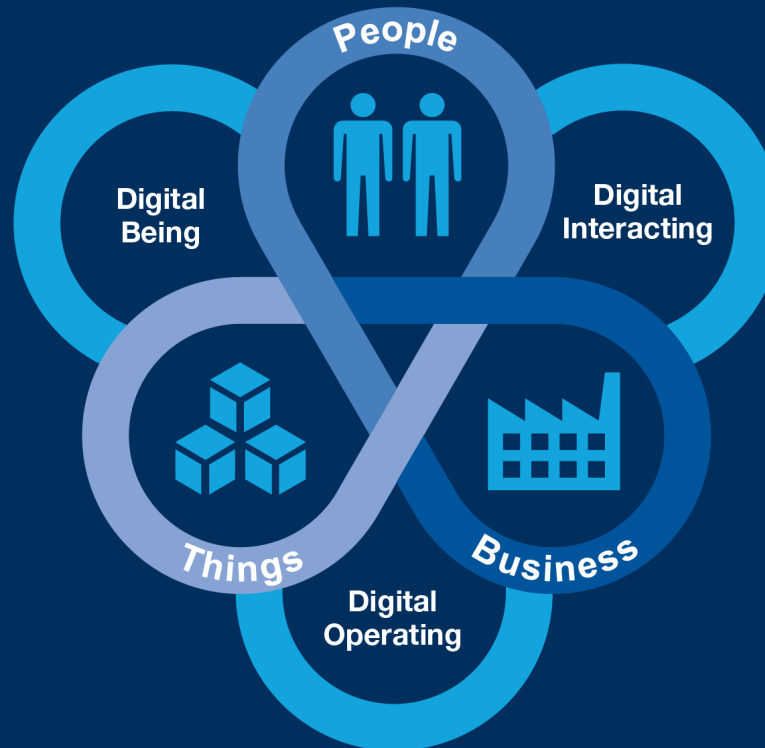


Digital Business

Fonte: Gartner Consulting, web.

Targeting

Digital Business Lenses



gartner.com/SmarterWithGartner

Source: Gartner (May 2015)
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Gartner

Source: Gartner Consulting, web.

Key area actions

3

Actions for building new value chains

Areas of Application

Role

Intelligent
process
management

Work station
support /
automation

Content and
transaction

Retail, branding & marketing	Logistics	Industry	Security	Agro	Health	Government	Cities	Energy	Education
Retail omnichannel solutions	Remote Management			Agrotech	E-health	E-gov	Smart management (city, grid)		Edutainment

2

Actions for
developing
specific
capabilities

Surroundings

1

Cross actions for the development of the
ICT

2. Foster knowledge, adoption and development of technologies related to:

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Themes

Data Acquisition	Data Recognition	Data processing	Networks and wireless	Actuators and Robotics	User interaction
<ul style="list-style-type: none"> • Artificial vision • Outdoor sensors • Motion Sensors • 3DI Sensors 	<ul style="list-style-type: none"> • Image reading and Interpretation (image and video) • Geolocation 	<ul style="list-style-type: none"> • AI – Artificial Intelligence and Smart Systems • Big data 	<ul style="list-style-type: none"> • M2M • Wireless sensor networks 	<ul style="list-style-type: none"> • Robots • MEMS 	<ul style="list-style-type: none"> • Social Technologies • User interface • AR – Augmented Reality

The collage illustrates various technologies related to the themes in the table above:

- Data Acquisition:** A street scene with sensors and a 3D data visualization.
- Data Recognition:** A satellite map showing a specific area.
- Data processing:** A 3D data visualization showing various data points and connections.
- Networks and wireless:** Logos for M2M Solutions, RFID, 4G LTE, Beacons, and NFC.
- Actuators and Robotics:** A drone and a tractor.
- User interaction:** A social media thumbs up icon, a child interacting with a tablet, and a circular diagram for Experience Design.

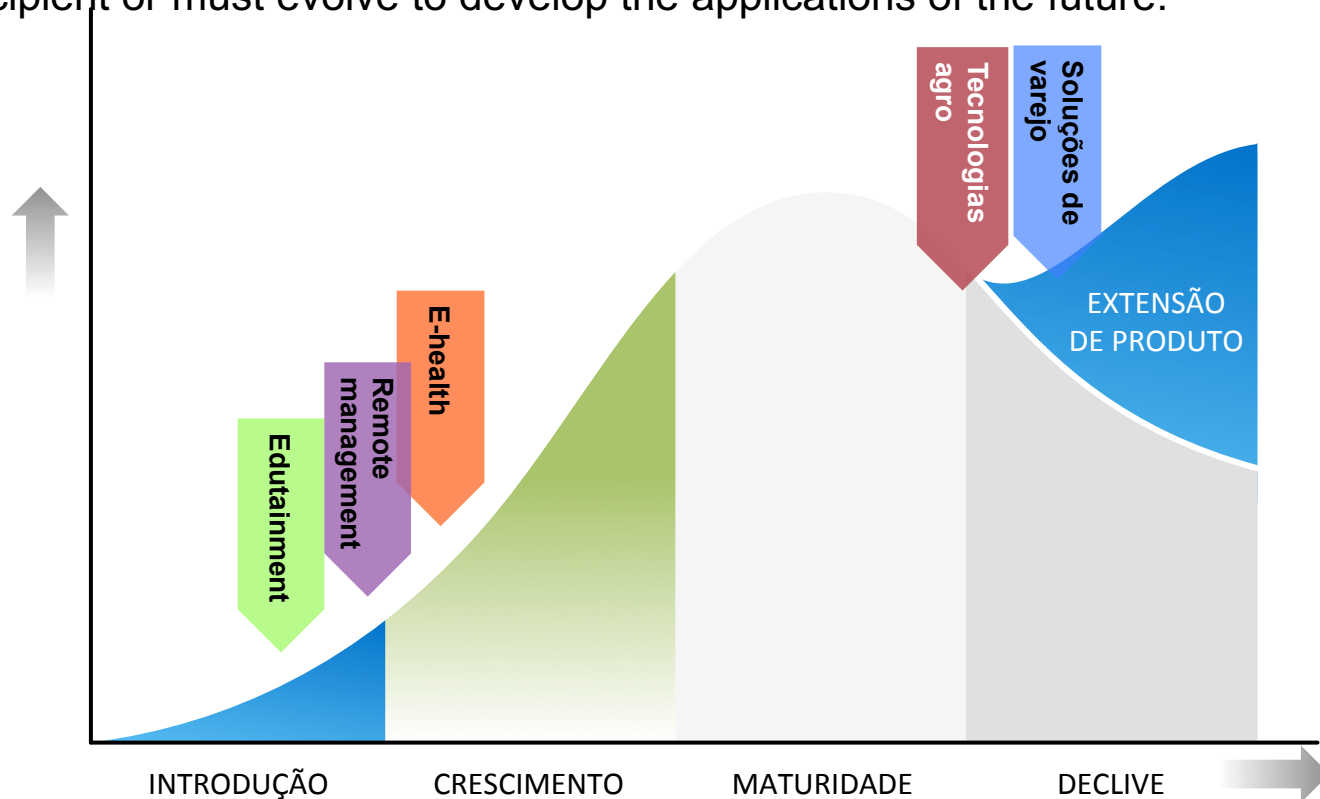
Source: Parana's IT Strategic Plan, 2014

3. Building New Value Chains

Proposed areas of development are in a very emerging state or in the process of reinvention.

Supply and demand are incipient or must evolve to develop the applications of the future.

- New multidisciplinary / multi-sided value chains; IT – determinating *enabling technology*
- Needed IT + new specific knowledge in sector



3. Building New Value Chains

- **It is not necessary to have the full value chain in Paraná.** In some cases (eg hardware and / or software) there are standard products that can be adopted. **It is important to make external alliances**
- The **specific knowledge in selected sectors must be present in Paraná** (or nearby) **through sectoral intelligence centers** or by the **existence of advanced qualified demand**



Some Data References:

- Total Wage Bill: Paraná is the 4th state in Wage Bill in Total Economic Activities in BR (R\$ 8 Billions)
- ICT Wage Bill, 7th (R\$ 101 millions)
- 4th in Share of Businesses in the Brazilian IT Services Branch (6% of the totals)
- 5th in Share of Employees in the Brazilian IT Services Branch (5% of totals)
- 15% of ICT (1262) companies have 1-19 employees
- 2nd exporter of ITC services in Brazil (9% share)
- 5th Wage bill in Agriculture and Livestock (R\$ 160 million)
- 7th in Number of Employees Directed Related to IT in Agriculture and Livestock Sub-Sector (5%)
- 2nd in Number of Employees Correlated with IT in Agriculture and Livestock Sub-Sector
- 2nd Wage Bill of food industry, (R\$ 337 million)

Source: UFPR, Department of Economy and ASSESPRO-PR, based on selected data from the Ministry of Labour and Employment, Lattes Platform/CNPq, INEP – 2016-2018

Some Data References (cont):

- 3rd in Number of Employees Directed Related to IT in Food Industry Branch (6%)
- 2nd in Number of Employees Directed Related to IT in Food Industry Branch (12%)
- 2nd in Brazilian Wage Bill (R\$) Smart Grid Activities, R\$ 26 million
- 3rd in Brazilian Wage Bill (R\$) Smart Grid Activities (7%)
- 2nd in nr of new graduated IT professionals in BR (almost 4000 in 2017)
- EaD / distance learning / education has a strong role *58% of new professional coming from institutions with strong distance education background, among the top 5 in BR
- Great potencial of engineers and technology researchers to convert in market opportunities and solutions
- Only Curitiba concentrates more than 78% of IT companies in Paraná, along with the Metro Region is the most important Cluster in the state

Source: UFPR, Department of Economy and ASSESPRO-PR, based on selected data from the Ministry of Labour and Employment, Lattes Platform/CNPq, INEP – 2016-2018

Bottom Lines

- We are very competitive - and Interested in building strategic partnerships
- We are one of the top 3-5 most consistent, constant and persistent states in the brazilian scenario

Thank you!

Izoulet L. M. Cortes Filho

**ICT State Governance:
SEBRAE-PR Consultant /
Director of International Business and
Projects - ASSESPRO**

icortes@comexterior.com.br

izoulet@yahoo.com.br

Cel: +55 41 99103-9093