ICIT
Inovacioni centar za Informacione Tehnologije

Framework for development of national ICT R&D sector

Milan Zdravković
Innovation Center for Information Technologies

ICIT
Inovacioni centar za Informacione Tehnologije

Overview of national IT R&D vendors market

- **ICT market**
  - Decreasing
    - 340 M$ in 2003, 280 M$ in 2004, prediction of 20% decrease in 2005), 1.5% GDP
  - Unbalanced dispersion
    - 56% Belgrade, 15% Vojvodina, 13% Niš, 16% other
- **Unbalanced structure**
  - 75% of a market belong to HW
  - 15 % - proprietary SW
  - **9.5 % - IT Services** (20% Slovenia,35% Hungary, 40% Greece)

ICIT
Inovacioni centar za Informacione Tehnologije

National IT&RD vendors market – Strengths

- Educational system develops staff with general knowledge based on strong math background, capable to specialize in any area very fast.
- Very good knowledge on using commercial software, due to piracy rate in past period.
- Solid english language proficiency.
- Significant number of self-educated freelancers, mostly technical faculty's students.
- IT expertise in a region is balanced over different organizations, making very low degree of competitiveness, yet great potential for adding value to existing products and services with complementary offers.
- Largest cities – university centers are well connected by road infrastructure
- Universities are equipped with computers and broadband internet.
- Solid number of small agencies with one or more SLA contracts with client from abroad.

ICIT
Inovacioni centar za Informacione Tehnologije
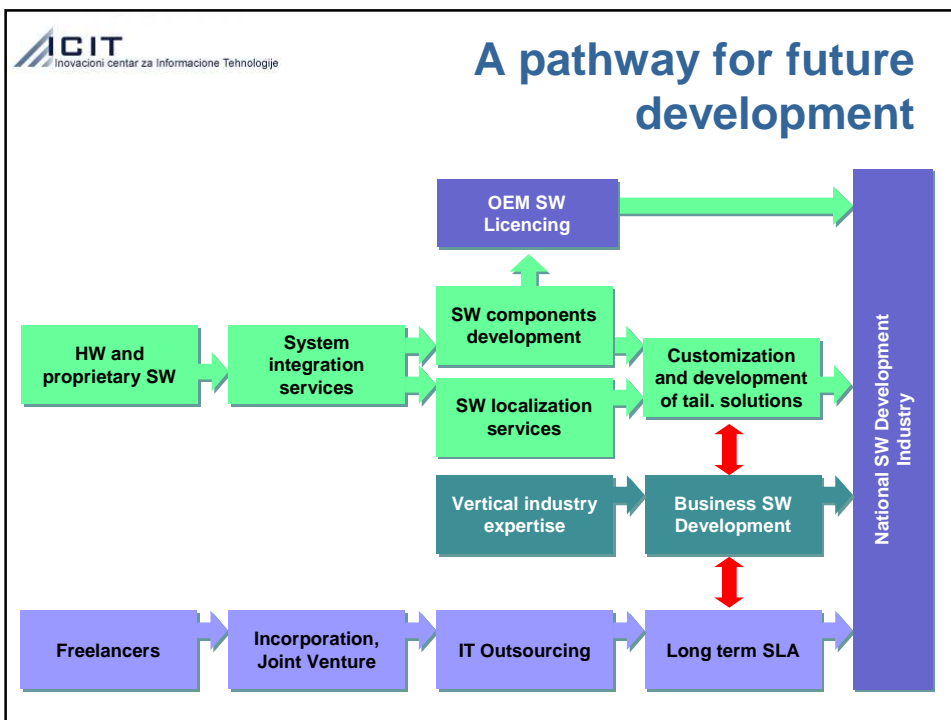
National IT&RD vendors market – Weaknesses

- Lack of highly educated staff.
- Current university curriculums does not reflect market requirements for a staff.
- Large corporations are mostly software importers.
- Small and medium businesses sector as a largest buyer of IT products and services globally is not developed in Serbia.
- Internet infrastructure is not well developed.
- Low efficiency of IPR state agencies, particularily in PCT (Patent Cooperation Treaty) related activities.
- Very small number of ISO or CMM based implemented quality systems and processes.
- Lack of IT vendor management social competences.
- Low level of german language proficiency.
- Low degree of collaboration within sector.

ICIT
Inovacioni centar za Informacione Tehnologije

National IT&RD vendors market – Opportunities

- Global IT outsourcing market, as well as awareness of the need to outsource grows rapidly, particularily in open-source technologies.

- It is expected that outsourcing development projects would move fast to Serbia, after EU succession of Bulgaria and Romania, due to salary growth.

- There is a growth of demand in IT inovations at the global market. It makes a number of opportunities for fast kick-off of global IT brand in software industry.

- During software legalization process, it is expected that the local demand for open-source server software would grow.

- Global institutions (EC, World Bank, IMF, NGO) are willing to donate to IT based projects.

- Offer of IT consumer products and services does not follow the growth of internet penetration among citizens.

- As sector clearly disseminates into local and global market oriented companies, potential for profitable relations between players grows.

ICIT
Inovacioni centar za Informacione Tehnologije

National IT&RD vendors market – Threats

- There is a risk that expected growth of demand for outsourced development would not be met due to serious lack of highly educated staff.

- Brain drain.

- Lack of understanding of IT role in a government processes and relations.

- Lack of knowledge on data protection, non-disclosure agreements and security policy could lead to risks of endangering of information confidentiality.

- Continuous lack of highly educated staff could lead to salary growth.

- Strategic partnership with Microsoft and 30.000 licenses of its software in government institutions and public companies could set a path to proprietary SW based e-government projects, which could endanger R&D investments in IT sector.

- Growth of demand for outsourcing services could lead to lack of resources dedicated to research and innovation.

A pathway for future development

ICIT — Inovacioni centar za Informacione Tehnologije

ICIT — Inovacioni centar za Informacione Tehnologije

Linking Development of Information Society and ICT R&D

- **National Strategy for Information Society Development**
- Main instruments
  - E-Government
  - E-Education
  - E-Health
  - E-Business
  - Development of ICT business sector
- Number of Strategy components with regional focus
- Development of sectoral policies

Thank you for your attention

Milan Zdravković
Innovation Center for Information Technologies