



Intellectual Property: Valuable Mean of Innovation Promotion and Technology Transfer

National Workshop : “Innovation Promotion and Technology Transfer”

Belgrade, June 21 and 22, 2011

Topics

- What is Intellectual Property (IP)?
- IP, Innovation and Knowledge Based Socio – Economic Growth
- IP Valuable Mean for Innovation Promotion and Technology Transfer
- WIPO Available Capacity Building Programs and Materials Related to Innovation and Technology Transfer

What is Intellectual Property (IP) ?

- **Intellectual property (IP)** refers to creations of the mind: inventions, literary and artistic works, and symbols, names, images, and designs used in commerce.

- IP is divided into two categories:

- **Industrial property**
 - inventions (patents),
 - Trademarks,
 - industrial designs, and
 - geographic indications of source.

- **Copyright:**
 - literary and artistic works such as novels, poems and plays,
 - films,
 - musical works,
 - drawings,
 - paintings,
 - photographs and sculptures, and architectural designs.

What is Intellectual Property (IP) ?

- What is the difference between IP and IP right (IPR)?
- IP is becoming our legally enforceable right only when it is protected under IP laws and standards.
- IPR gives to the owner (who is not always the inventor/ creator) the right to exclude others from **commercial exploitation of the IP**.
- The idea and information contained in patent are freely accessible to those interested and able to use – the only right of the owner is to **stop them commercializing (“making money”)** from the protected invention or design – without the consent of the owner.

What is Intellectual Property (IP) ?

- Why IP protection is important ?
- Many reasons:
 - Allow creator/inventor to benefit from its creation
 - Foster return on the investment
 - Contribute to the well - being and development of the society
 - Support creation of jobs, etc.
- In the context of innovation and economic use of IP - It gives the owner a right **to manage its IP** in line with its strategic interest – to gain advantage on the market and exclude the others, to sell, license, invest in joint venture and other collaborations, include in patent pool etc, **during the period of the legal protection (patent 20 years) and on the territory where it is protected.**
- Only if we own IP – we can manage it !
- Protection of the intellectual property should not be an objective per se, it should always be strategically planned and managed.
- Number of patents is not forcibly an indicator of performance – in particular if they are not further managed and exploited.
- Consequently, IP protection is only the first step and necessary precondition for IPR management and economic exploitation of the created IP.

IP, Innovation and Knowledge Based Socio – Economic Growth

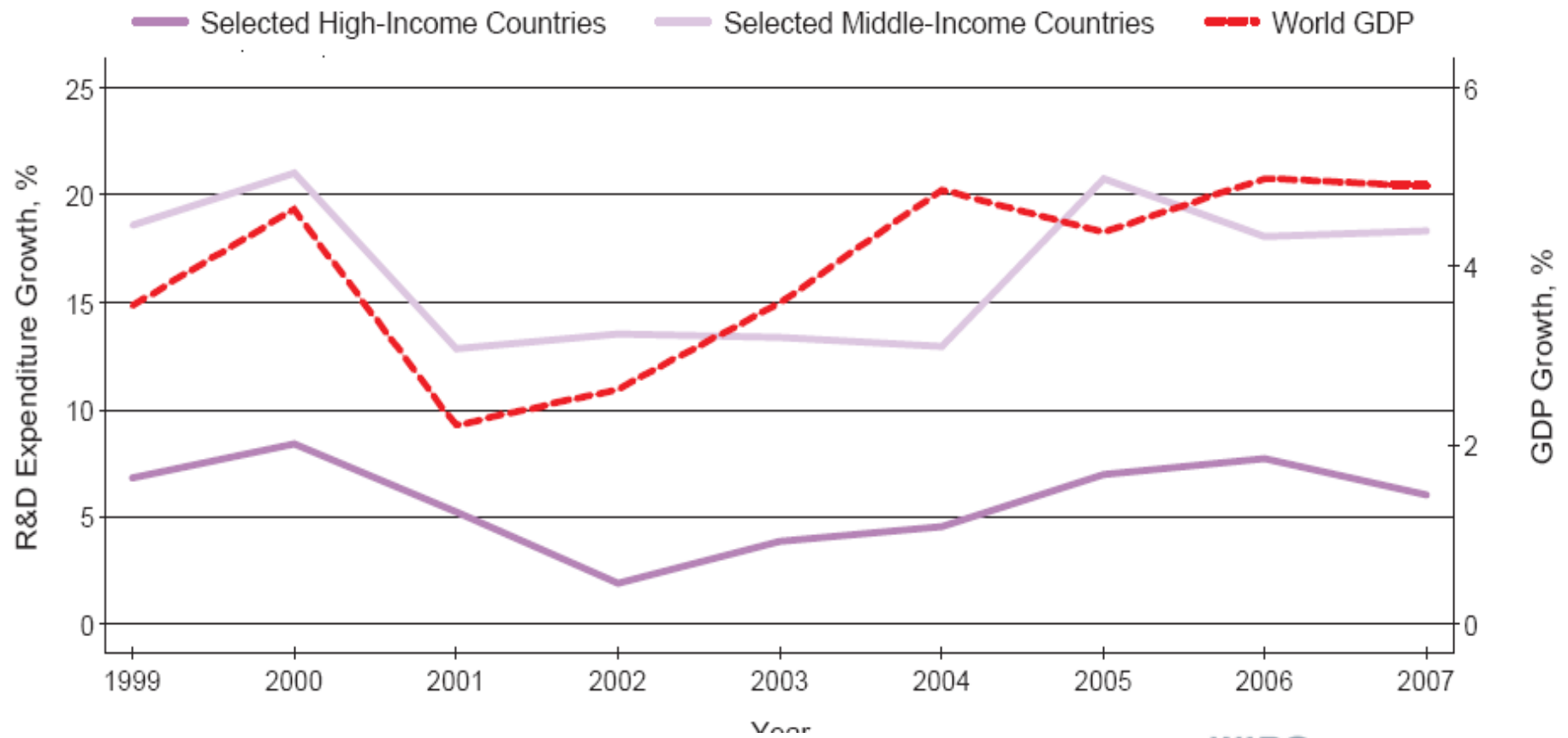
- Innovation is a commercial application of knowledge and intellectual property.
- Simply – creation of the new products, services, production processes, organizational structures....
- Commercial aspect of the innovation is crucial – it has to be related to the market. Invention (patent) that can not be commercialized - is not innovation.
- The knowledge economy recognized innovation as a major driving force for competitive advantage on the market and economic growth.
- Fostering innovation became a « must » in any strategy – in public and private sector.
- In recent economic discussions innovation was identified as a potentially most efficient way out from economic recession.

IP, Innovation and Knowledge Based Socio – Economic Growth

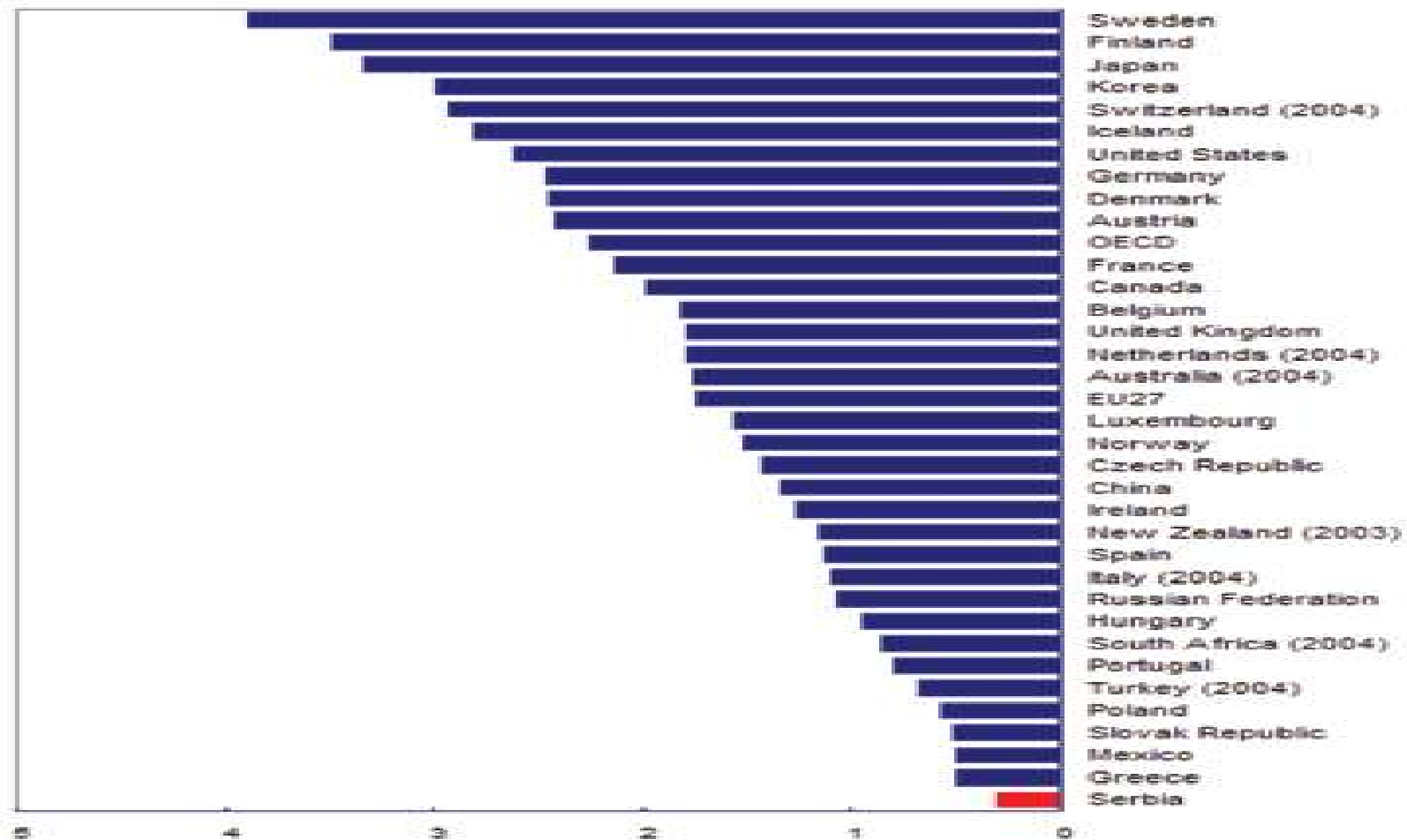
- What are the indicators for measuring the impact of innovation on socio - economic growth of the country?
- What is the role of R&D and intellectual property in fostering innovation on the national level?
- What is the level of the return on investment in public R&D, as an element of innovation?
- It is hard to measure due to:
 - Complexity of the factors that influence innovation (not only R&D but also human capital, organizational structure, management strategy, marketing, branding...);
 - Existing accounting practices – investments in an intangible assets are most of the time expressed as expenditure;
 - Limited data available from public sector.
- Innovation public policies/ strategies are often based on:
 - Lessons learned in fostering innovation in private sector;
 - Application of the management tools developed by businesses – such as IPR management;
 - Best practices of other countries.

WIPO – World Intellectual Property Indicators - 2010

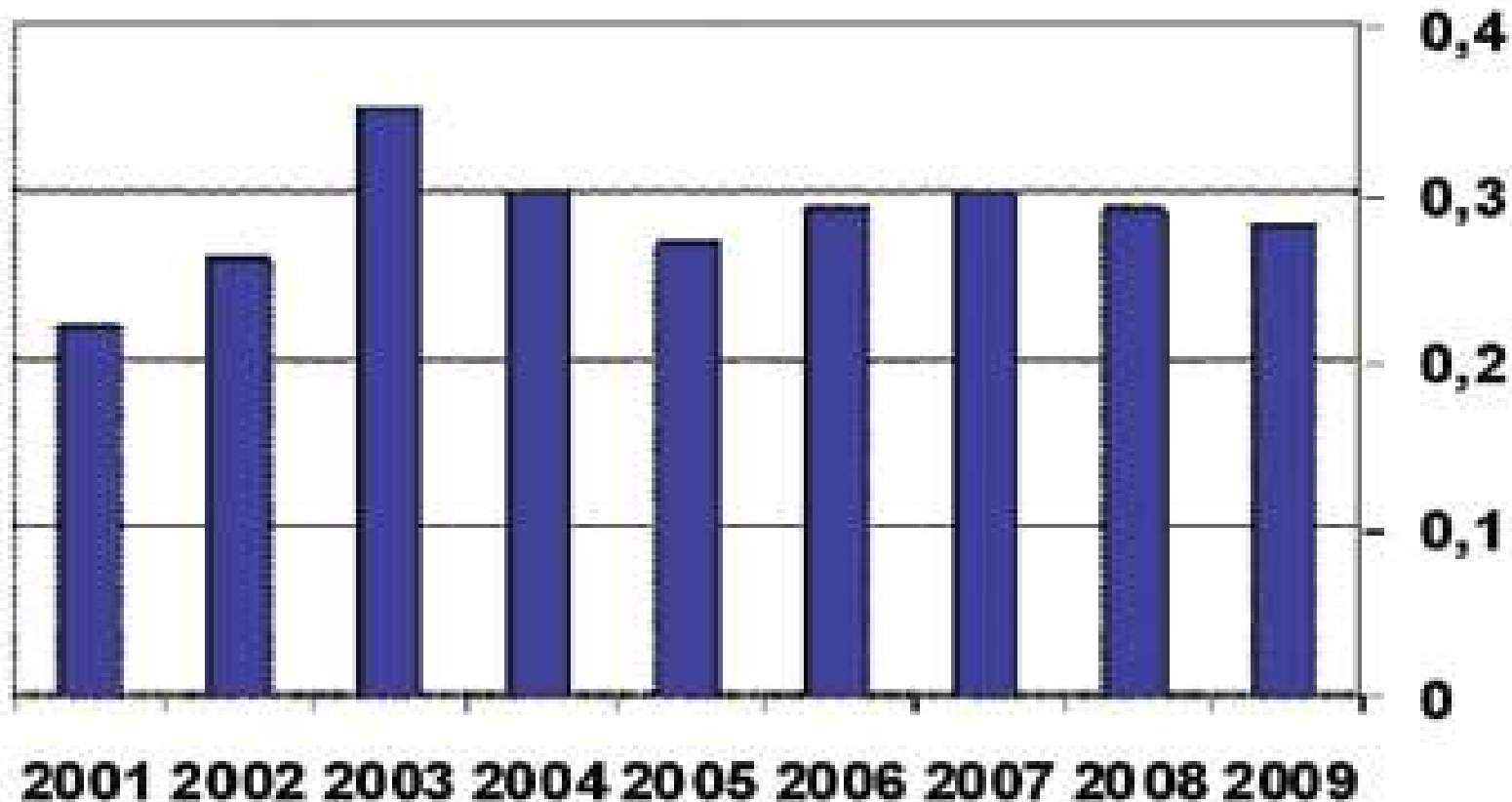
Figure 2: R&D expenditure growth rate (%)



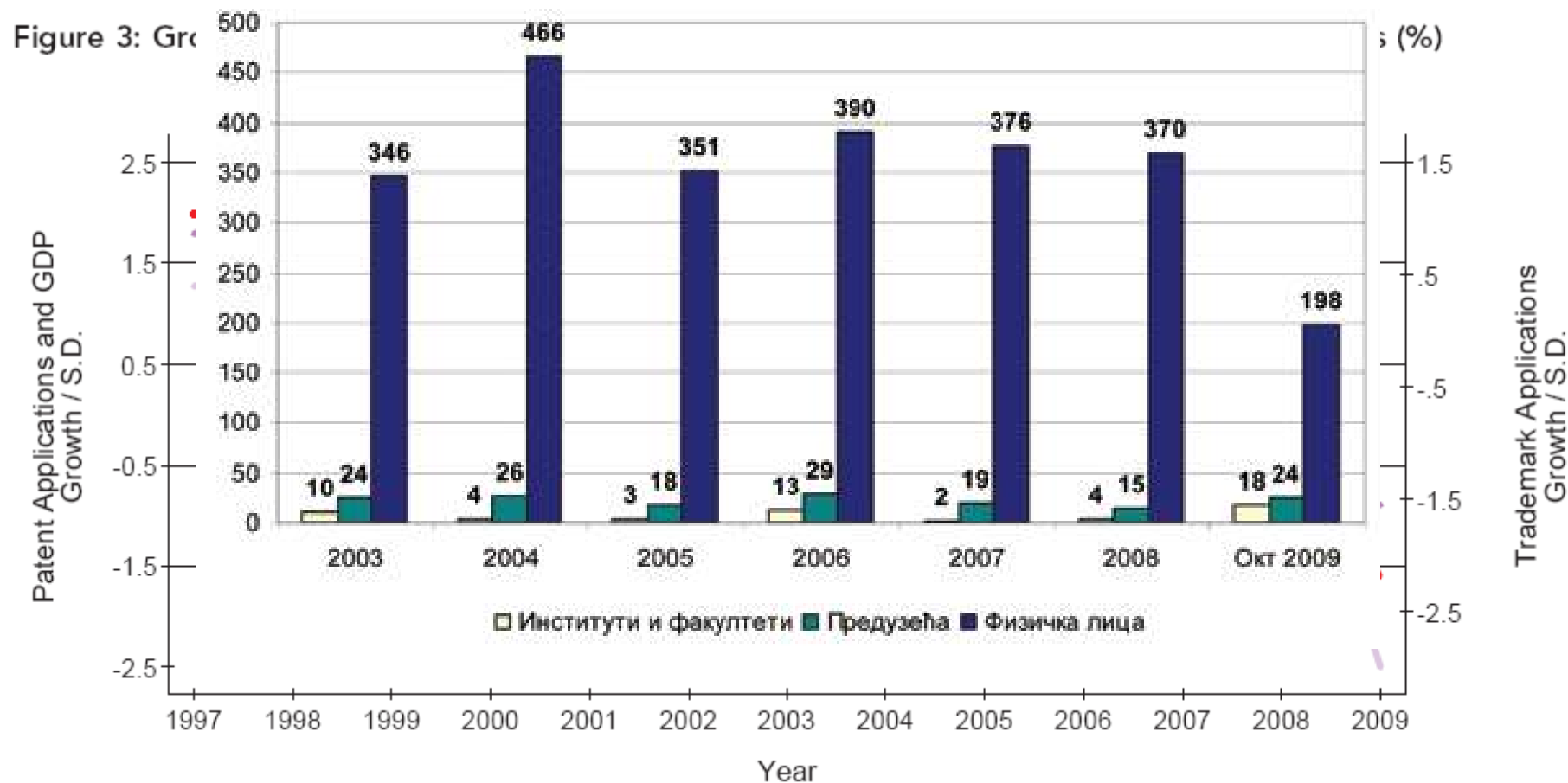
Total R&D spending as % of GDP
 (Source: OECD Science, Technology and Industry: Scoreboard 2007) – Strategy of Scientific and Technological Development of the Republic of Serbia 2010 - 2015



Budgetary investments in science (in GDP %) (Source: Budget Laws of the RS)

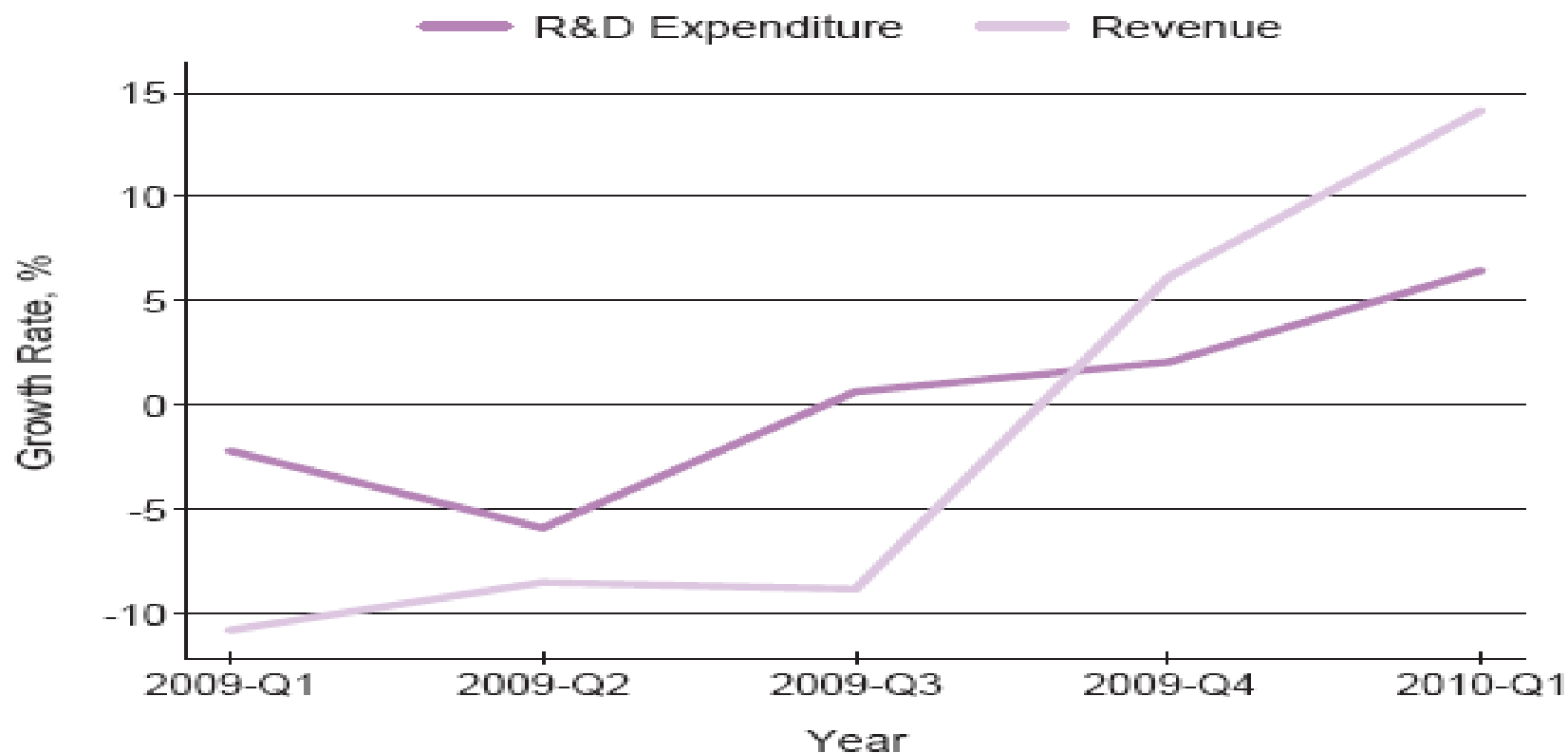


Structure of patent applications by domestic applicants (Source: Intellectual Property Office of the Republic of Serbia)



WIPO – World Intellectual Property Indicators – 2010 (based on data for 2000 firms across all sectors)

Revenue and R&D expenditure quarterly growth rate (%)

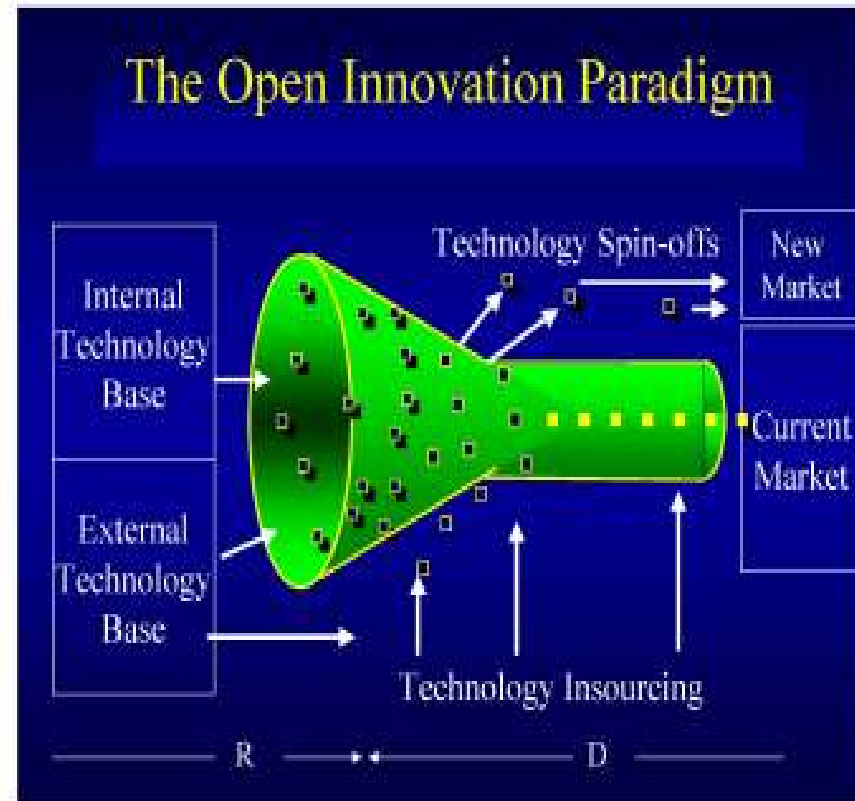


IP, Innovation and Knowledge Based Socio – Economic Growth

- What are the innovation trends today?
- “Collaborative” - “Network” – “Open Innovation”

What is Open Innovation?

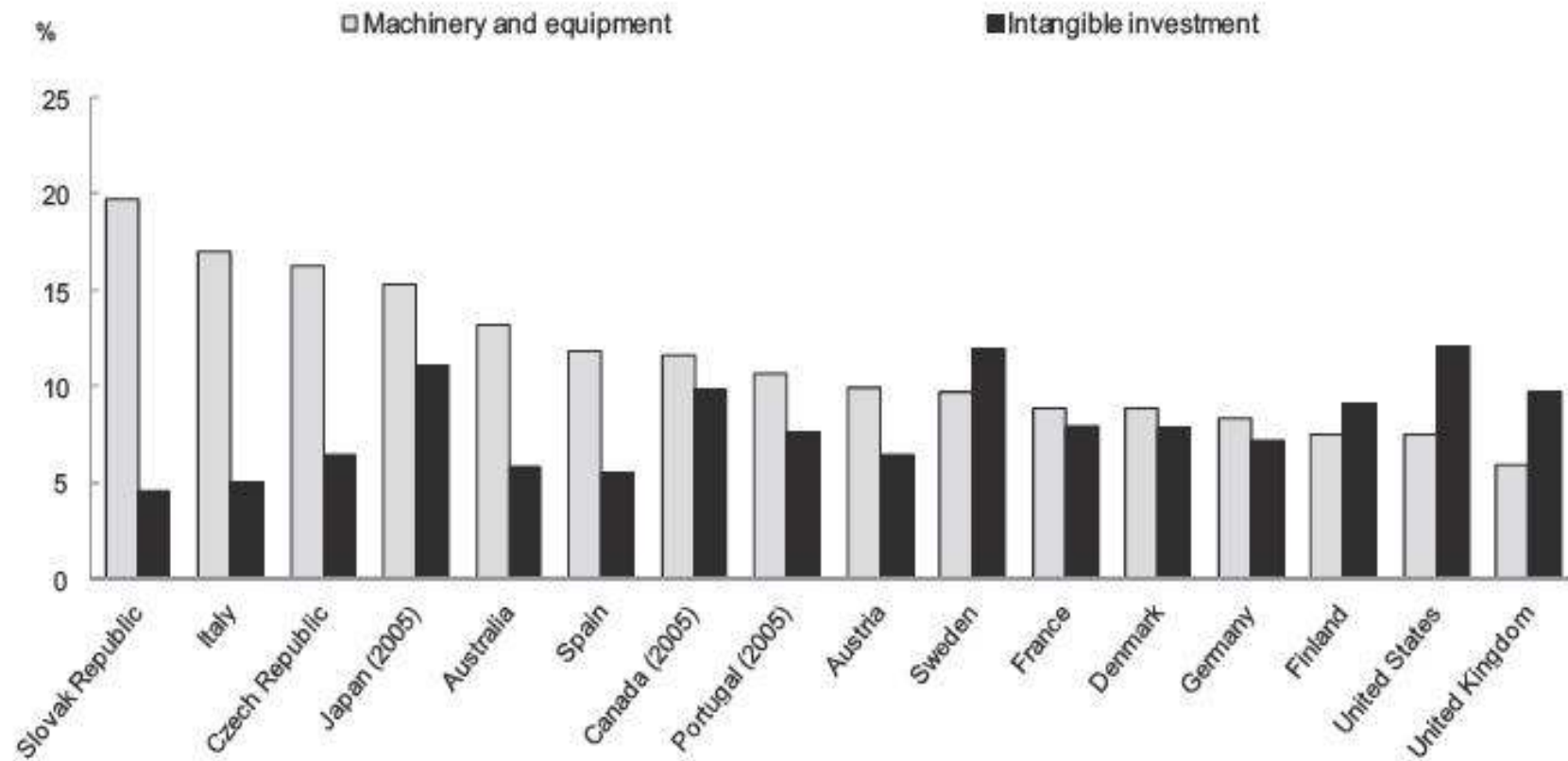
- “Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as the firms look to advance their technology”.
- Henry Chesbrough
- **Image** - Henry Chesbrough presentation on the OECD Conference on New Business Strategies for R&D



IP, Innovation and Knowledge Based Socio – Economic Growth

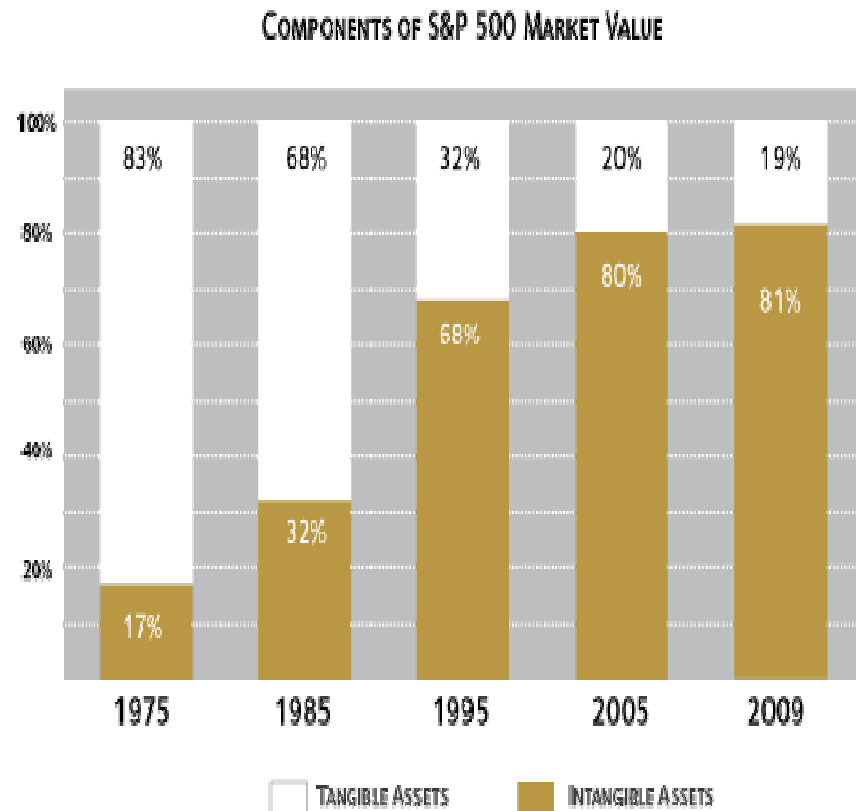
- Open Innovation
 - Increasing business investment in intangible assets – R&D, IPR asset management, human capital, innovative processes, “good will” etc.
 - Changing nature of the market value of businesses
 - “Sharing” innovation – is based on an active IPR management – it does not represent a “free access” to innovation .
- Intellectual property became a business (and legal) tool for sharing, exchange and transfer of innovation through different IP based mechanisms:
 - Collaboration Agreements
 - Joint Ventures
 - Networks (Business and IP)
 - Licensing
 - Patent Pooling
 - IP Standards etc.

Investment in Fixed and Intangible Assets as a Share of GDP, 2006 (Source: OECD)



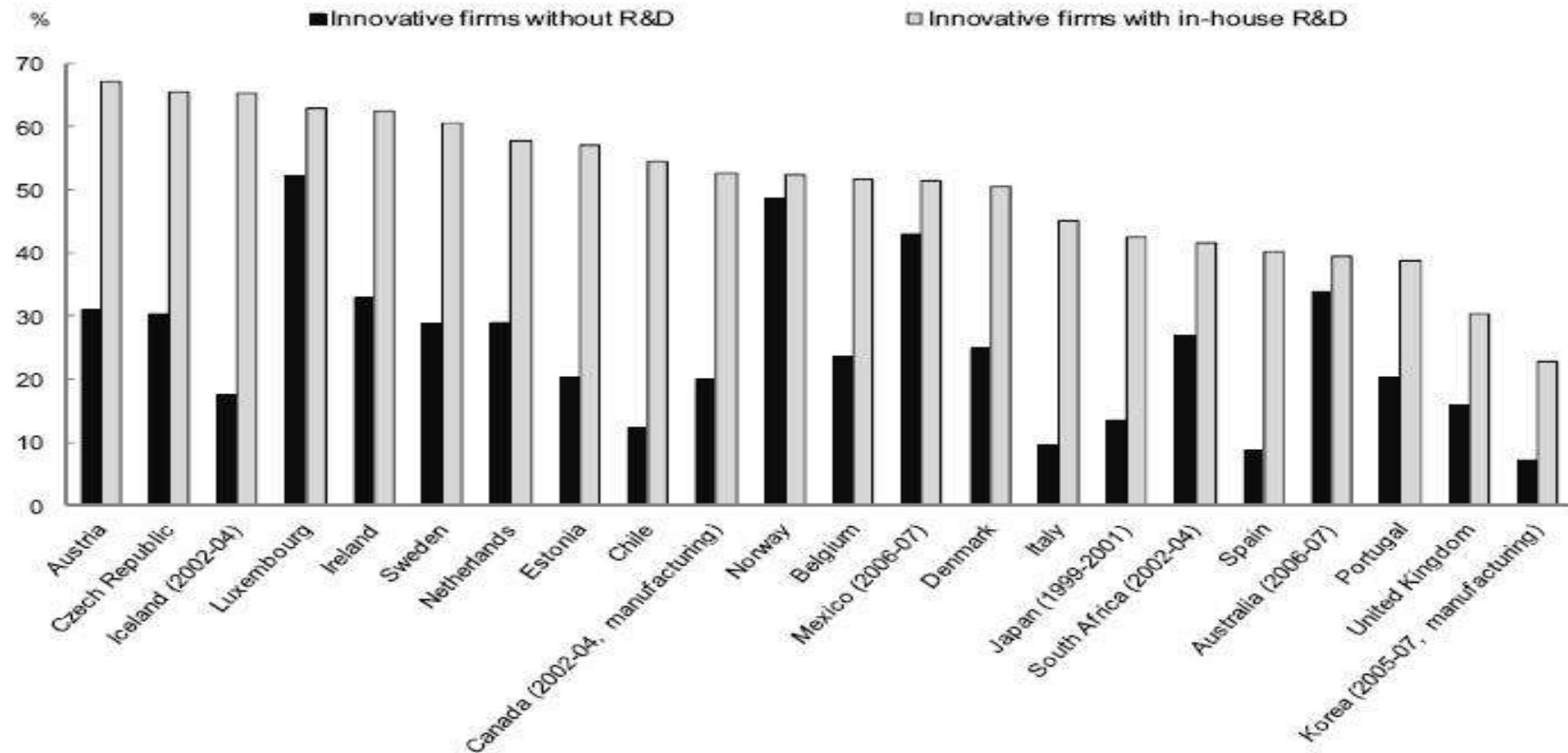
Intangible Assets – The Core Market Value

- In 1975 IP and intangible assets represented less than 20% of the company's value.
- Today, intangible assets represent more than 80% of the companies market value.
- Center for Business Innovation of E&Y – Survey - 1981 – 2002
 - AT&T – 1981 – 120 billion\$ market cap, all in tangibles; 2002 – smaller AT&T – 75 billion \$ market cap – 50 billion in intangibles:
 - General Electrics – 400 billion\$ market cap – less than 4 billion \$ in tangibles:
 - Microsoft – 300 billion \$ market cap – only 5 billion \$ in tangibles
 - Pfizer – 260 billion \$ market cap – less than 10 billion \$ in tangibles.



Source: *Osiris Times*

Business Investment in R&D

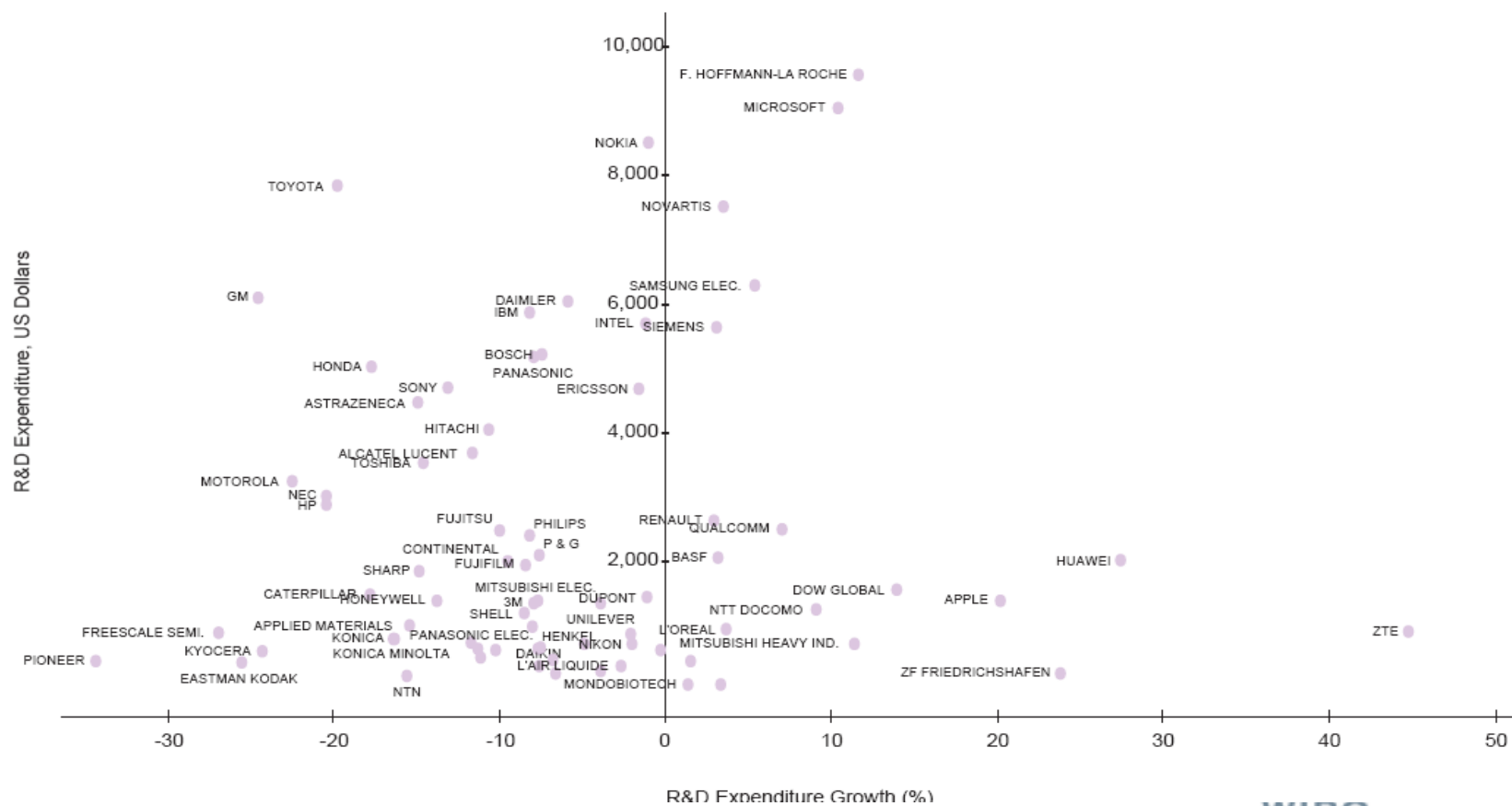


Note: For Spain, R&D activity refers to the year 2006 only.

Source: OECD (2010), *Measuring Innovation: A New Perspective*, OECD, Paris, based on OECD Innovation Microdata Project.

WIPO – World Intellectual Property Indicators – 2010 (based on data of 80 of the top 100 PCT applicants)

Figure 7: R&D expenditure of top 100 PCT applicants (2008-09/10 growth rate and 2009 volume)



IP - Valuable Mean for Innovation Promotion and Technology Transfer

- As in the private sector – public investment in R&D is critical for national innovation promotion and its impact on socio – economic growth.
- Strategic Goal – Fostering **local creation**, development and economic exploitation of the innovation.
- Governments are adopting and evaluating pro-active innovation policies/ strategies (IP , Science& Technology or Innovation National Strategies) where Increasing in the R&D investment is often followed by guidelines on the management of IPR embodied in the research results.

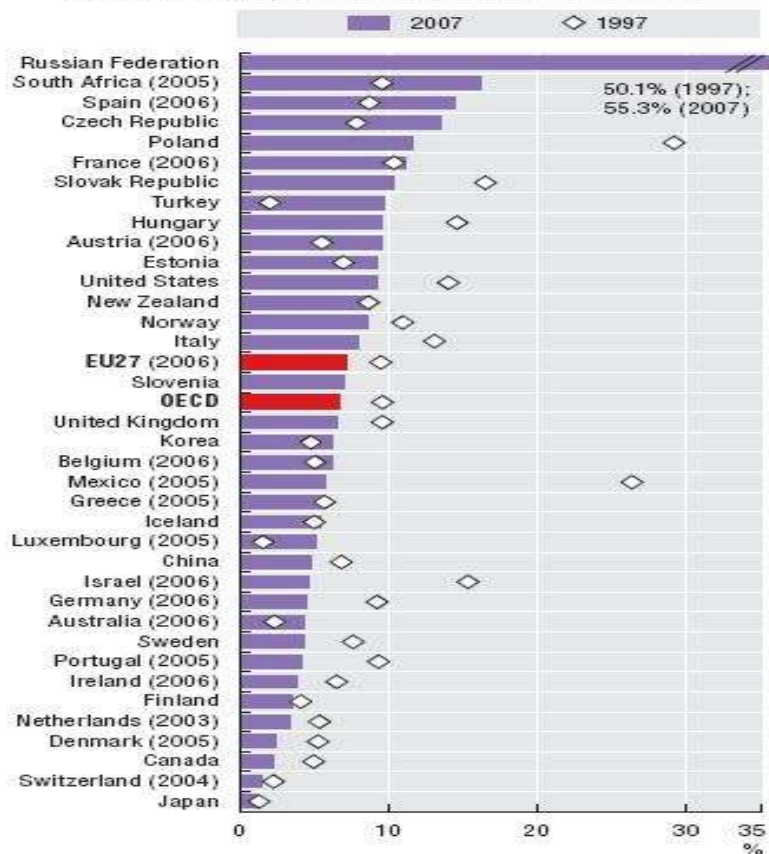
IP - Valuable Mean for Innovation Promotion and Technology Transfer

- **Strategy of Scientific and Technological Development of the Republic of Serbia 2010 – 2015 “Focus and Partner”**
 - Very clear vision;
 - Higher investment in R&D (currently about 0,5%, with tendency to increase);
 - Focusing on 7 national priorities;
 - Partnerships and networking on national (PPP), regional and international level;
 - Funding innovation – Special Innovation Fund;
 - Incentive policies;
 - IPR Management – envisaged amendments to the Law on Intellectual Property Rights
 - IP Ownership of the publically funded research results – joint ownership of the employer and industry client, when R&D contracted by the client;
 - Benefit sharing – inventors – not less than 30%, R&D institution – not less than 20%.
 - Intergovernmental regional organizations – such as EU – strategically harmonize IPR management in the universities and R&D institutions in order to facilitate technology transfer and IP based collaboration among its Member States - European Commission Recommendations - April 10,2008.

Source - OECD Science, Technology and Industry Scoreboard 2009

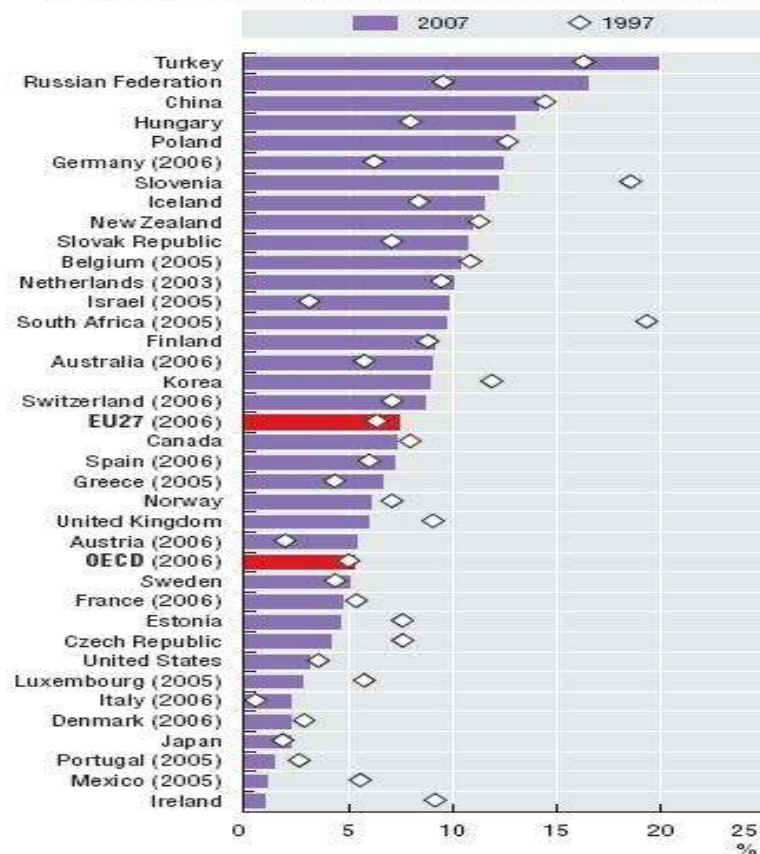
Government-financed R&D in business, 2007

As a percentage of R&D performed in the business sector



Business-funded R&D in the higher education and government sectors, 2007

As a percentage of R&D performed in these sectors (combined)



IP - Valuable Mean for Innovation Promotion and Technology Transfer

- **What is IPR management?**
- **Method initially developed by private sector as a business tool.**
- **IP management means continuing process of leveraging intellectual property for the achievement of the strategic goals.**
- **Definition, management procedures and specific strategic goals will depend on the context in which IP management occurs and on its stakeholders.**
- **It is always related to the higher level of economic exploitation of the intangible assets.**
- **Why do we manage IP? To add value, develop IP as an asset (intangible asset) and capitalize on the investment made.**
- **IP do not automatically represent an asset. Only when properly managed - accompanied by skilled human capital and managed in line with the market requirements – it becomes an intangible asset.**
- **Today – IPR management is indispensable strategic tool for:**
 - **Governments**
 - **Businesses**
 - **Universities and R&D Institutions**

IP - Valuable Mean for Innovation Promotion and Technology Transfer

- **IPR management in the context of Universities and R&D Institutions – to maximize the impact of the research on the society and increase the return on public investment.**
- **Return on R&D investment is difficult to measure in a simple input – output relation.**
- **Return is in IMPACT ON THE SOCIO – ECONOMIC GROWTH not INCOME !**
- **Association of the University Technology Managers (AUTM) reports in its Survey on Licensing Activities every year on the impact that the university – industry collaboration provides on the society, mainly by:**
 - **Providing solution of needs – in particular in the health sector**
 - **Placing new products on the market (more than 550 every year)**
 - **Creation of new start – ups (jobs) locally**
 - **Development of the new knowledge - applicable on the market**
 - **Licensing revenues.**

I. Technology Transfer – Licensing Income (Source – AUTM Licensing Activity Survey 2007)

Name of the Institution	2007 Research Expenditure	2007 Licenses & Options Executed	2007 Startups	2007 Invention Disclosures	2007 new patents Issued	2007 Licensing Income
Stanford Univer.	\$699.992.095	88	6	401	106	\$50.370.600
Univer.of California	\$4.012.743.039	231	38	1,411	331	\$97.593.575
University of Florida	\$473.800.000	74	9	327	77	\$48.035.273

IP - Valuable Mean for Innovation Promotion and Technology Transfer

- Strategic IP Protection – provides ownership on the IP embodied in the research results
 - Control of use (and misappropriation) of the research results
 - Management opportunities – only owners (or those who have a consent of the owner – as licensee) can manage IP without infringing rights of the others
 - Using IPR as a tool for IP or business collaboration – to further develop research results scientifically or towards market requirements
 - Facilitating collaboration with industry partners
 - Licensing revenues
 - Raising funds – using IP as a collateral
 - Commercialization through start – ups – creation of jobs (AUTM Survey – more than 72 % of start ups established based on academic IP continue business in the region and contribute to the development of its environment)
 - Limiting brain drain.

IP - Valuable Mean for Innovation Promotion and Technology Transfer

- Necessary preconditions for R&D institution to respond to the new mission in the knowledge based economy, maximize the return on investment and provide impact on the socio economic growth
 - Legal and organizational infrastructure on the national and institutional level
 - Adequate funding
 - Skilled IP and technology management professional
 - Adapted management
- IP Institutional Policies – IP management tool aligned with the national IP/Innovation strategy.
- Issues to be regulated – managed:
 - IP ownership of the research results
 - IP management procedures – disclosure, protection, development, IP valuation, marketing, commercialization
 - Development and management of IP portfolio
 - Standard models of agreements
 - Benefit sharing
 - Conflict of interest etc.



WIPO Available Capacity Building Programs and Materials Related to Innovation and Technology Transfer

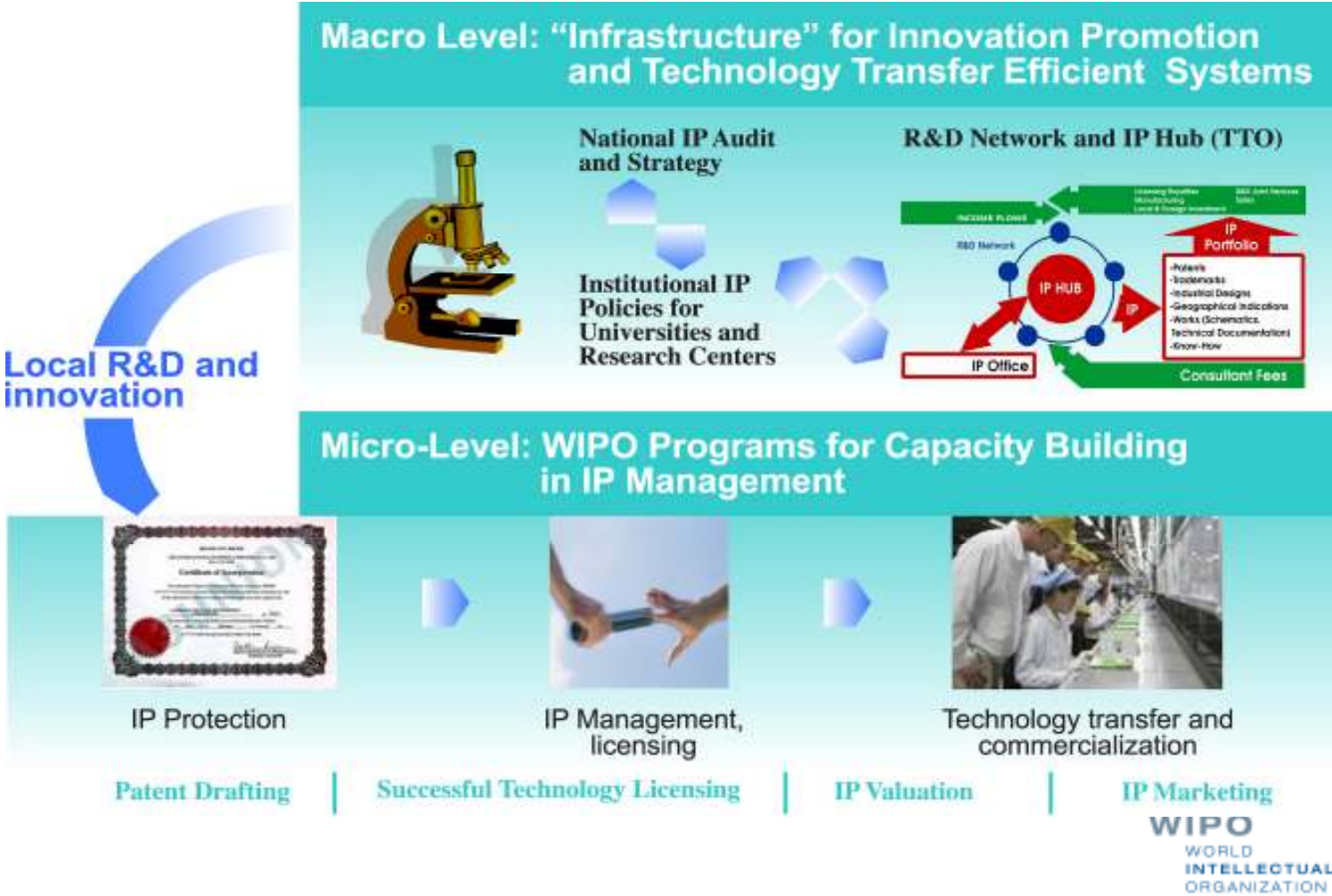
Objective

To effectively support Member States, in particular developing countries and countries in transition, to enhance and strengthen their capacity for local creation, development, ownership, management, strategic use and commercialization of IP as an economic asset for the benefit of their nationals and economic growth.

Strategy – To respond to the main challenges they are facing with – development of strategies, infrastructure and skilled professionals.

Innovation Promotion – WIPO

Available Capacity Building Programs and Tools



WIPO Capacity Building Programs for R&D Institutions



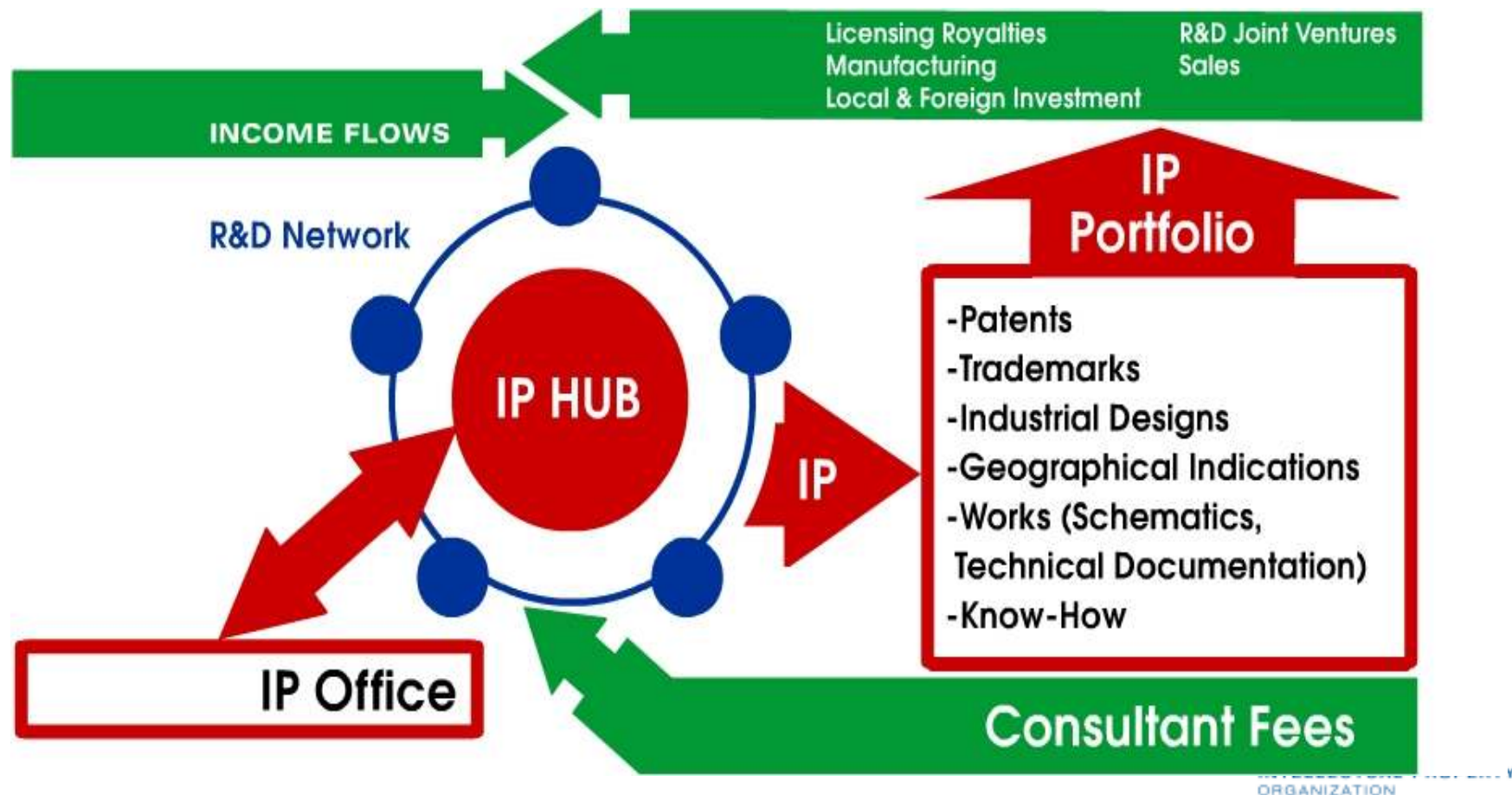
- ❖ I. Training on IP Policies and Procedures for R&D Institutions and Universities (How to Define Institutional IP Policy?)
- ❖ II. Patent Drafting for Scientists
- ❖ III. IP Marketing (How to find IP Commercialization Partner?)
- ❖ IV. IP Valuation (How to Determine the Value of IP and Technology ?)
- ❖ V. Successful Technology Licensing (STL)

Specific Projects in the Area of Technology Transfer and Innovation



- ❖ I. Pilot Project : Establishment of Technology Transfer Offices in the Arab Region (Algeria, Egypt, Jordan, Morocco and Tunisia)
- ❖ II. Open Innovation Collaboration Platform and Mechanisms
- ❖ III . R&D Networks and IP Hubs – Micro Strategy for R&D Institutions

R&D Networks and IP Hubs (TTOs): Implemented in Colombia and Western African Countries



WHERE WE DELIVERED OUR PROGRAMS AND TOOLS

Jamaica, Barbados, Cuba,
México, Costa Rica

Serbia, Turkey,

Hungary (for South East and
Central European countries)

India, Philippines, Singapore,
Vietnam, Thailand, Indonesia,
Malaysia, South Korea



Colombia, Brazil,
Argentina, Uruguay

Cameroon, Ethiopia, Mozambique, Zambia,
Rwanda, Nigeria, Kenya, Senegal, Egypt,
Tunisia, Morocco, Madagascar, Mauritius,
ARIPO, OAPI and CEMAC

Jordan, Dubai,
Syria, Bahrain,
Saudi Arabia



Thank you !

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