

ATC

**BRIDGING THE GAP
THROUGH
TECHNOLOGY CREATION**

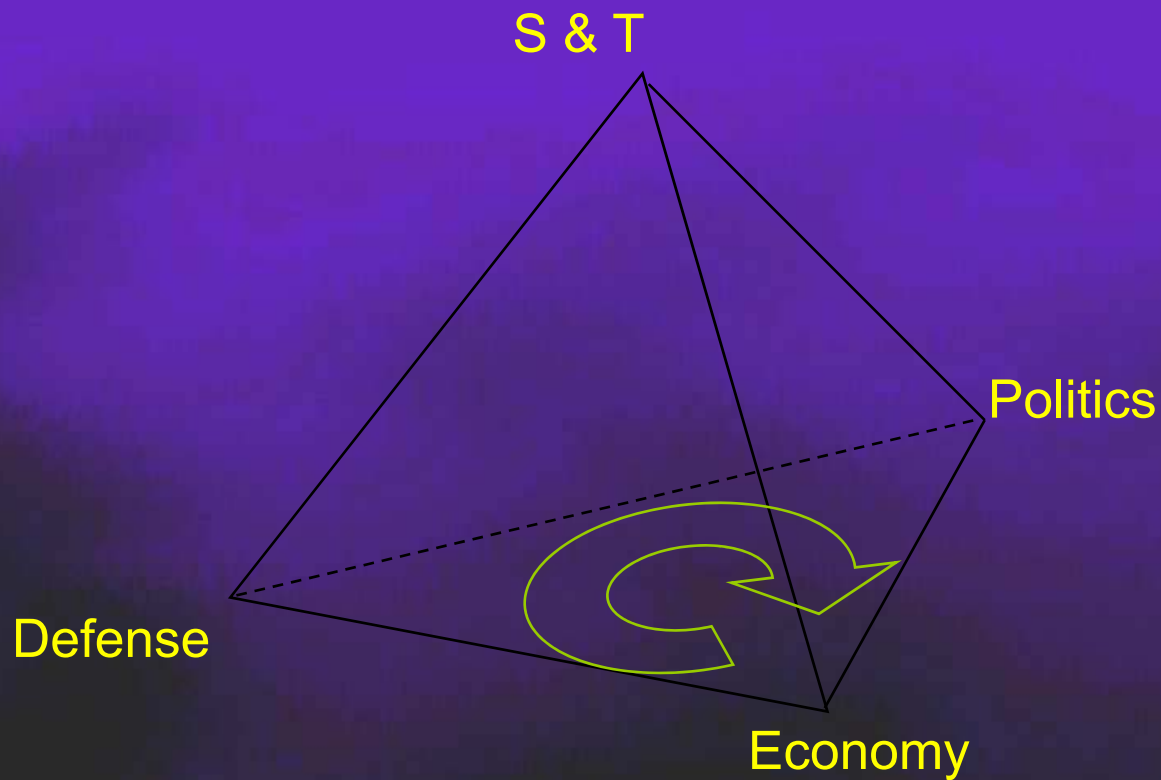
**Dr Faruk Yarman
HAVELSAN**

**Washington D.C.
April 2008**

SCOPE

- S&T, Economy, Politics and Defense
- Turkey as an Emerging Knowledge Economy
 - Business Environment
 - Innovative Activities
 - Human Capital
 - ICT
- Science and Technology Based Collaborative Development
- Closing Remarks

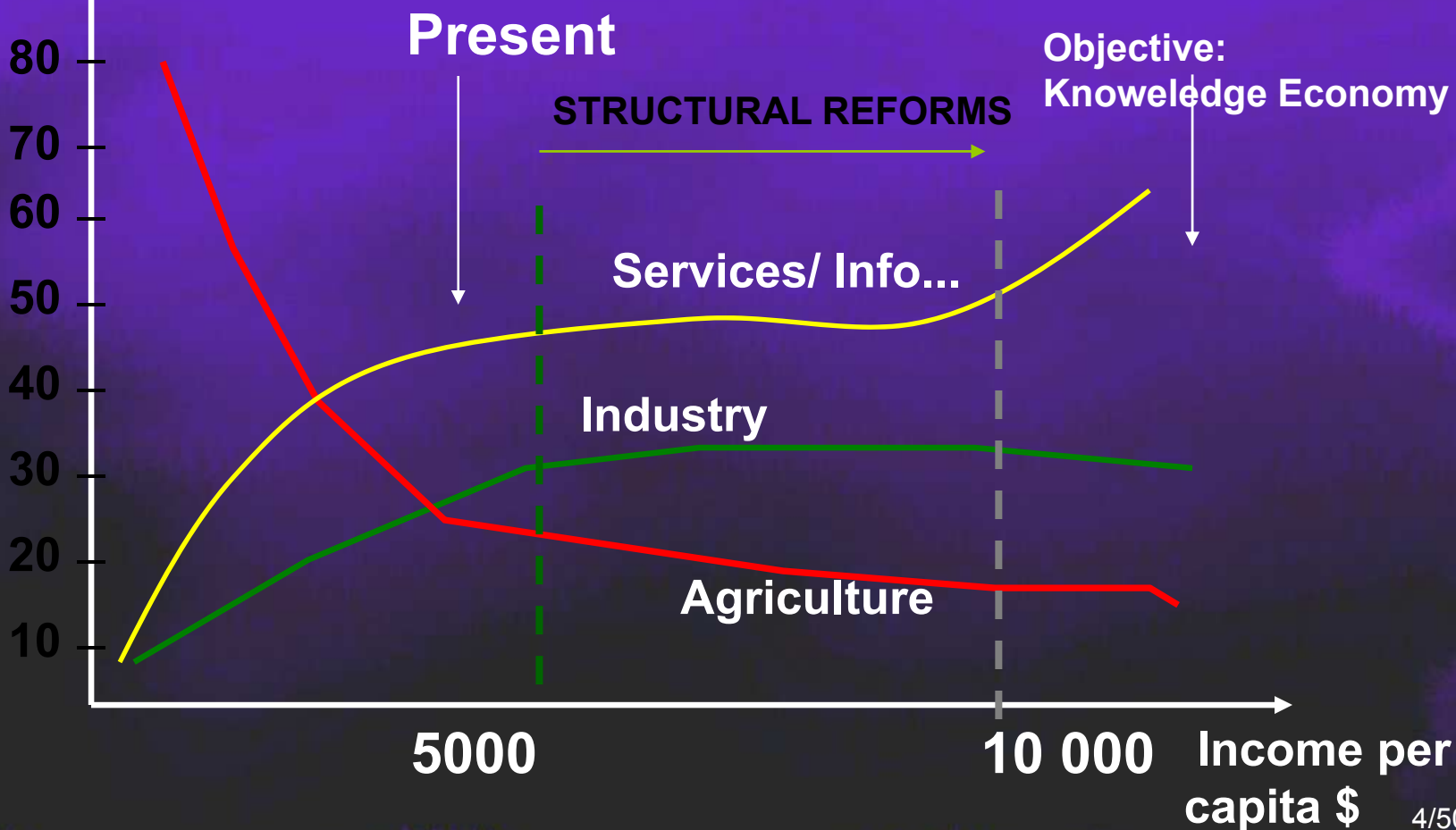
HISTORY of MODERN TURKEY



Income Per Capita and sectoral Employment in Developing Economies

| | AGRO | INDUSTRY | SERVICES |
|---------|------|----------|----------|
| EU-15 | 5.3 | 26.8 | 67.9 |
| TÜRKİYE | 34.9 | 18.5 | 46.6 |

Sectoral laborforce concentration (%)



Elements of Knowledge Economy

**Innovative
Activities**

**Human
Capital**

ICT

**Business
Environment**

Public Policy for a Knowledge Economy

Turkey's Transition..

- In order to thrive to a knowledge economy, Turkey must now have a **business-friendly environment**
- **That is,**
 - a proper mix of regulations, implementation practices, incentives, and institutions.
 - The higher level of risk of investment in new products, new markets, and new technologies can be mitigated by
 - more **stable and predictable parameters of public governance and business making process**

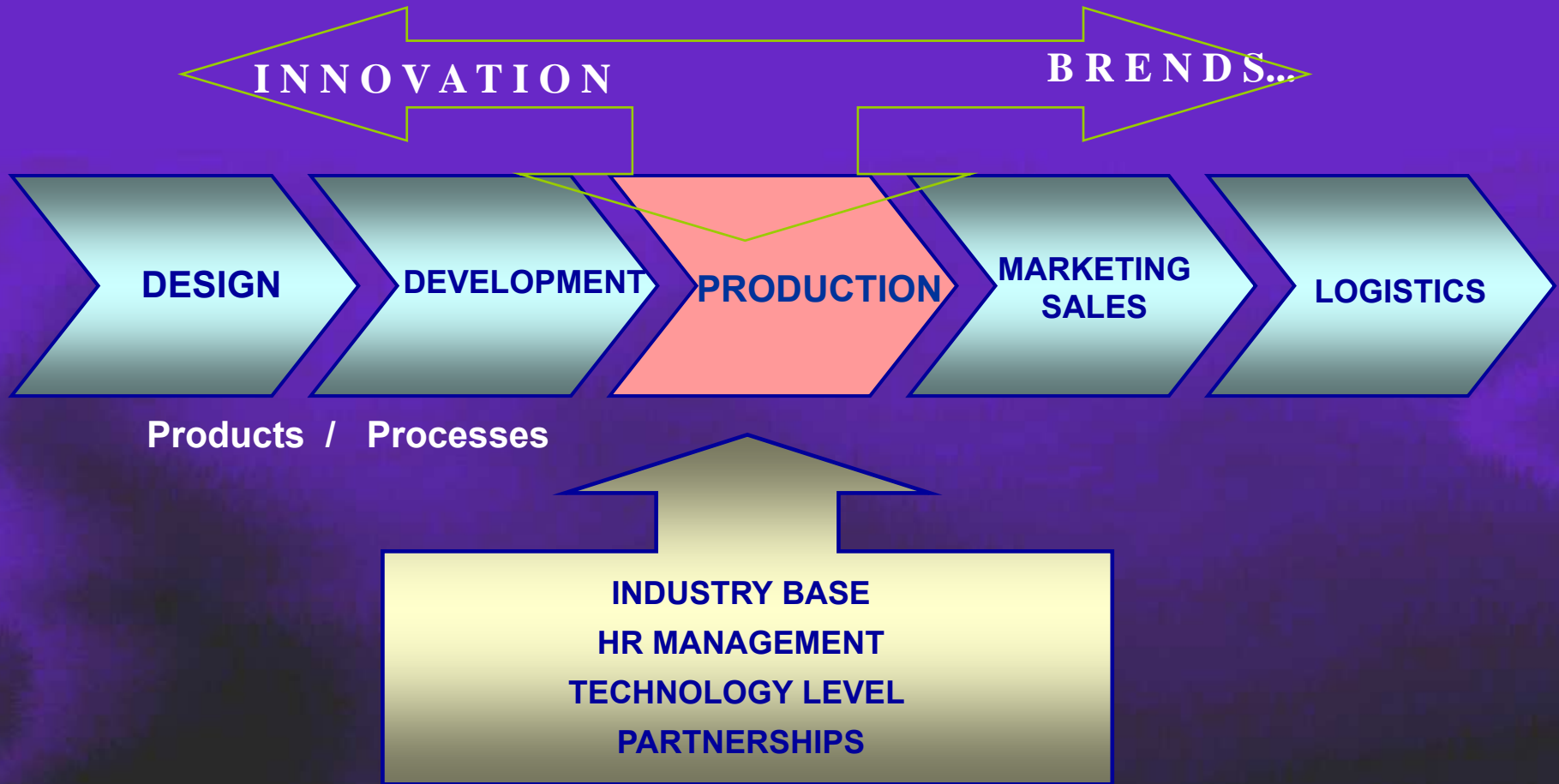
Fluctuating Market Economy

- Turkey, in contrast to the transition economies (including China), has had a **functioning market economy** for decades.
 - Many market regulations and institutions were developed and matured over time, and
 - the country has basic administrative capacity to deal with emerging regulatory issues.
 - Deficiencies of the business environment are generated at the deeper level of **volatile macroeconomic performance**, inefficient governance, and an insufficient emphasis on participatory policymaking.
- **Macroeconomic volatility** has negatively influenced the **development of innovative industries**,
 - by suppressing private and public demand for knowledge-intensive products,
 - crowding out investments in the innovative sectors by directing financing to the public sector, and
 - by failing to put in place the stable parameters necessary for long-term business planning.

Business Environment

- The knowledge economy requires the engagement of civil society in the design and implementation of economic policies and regulations, both on the central and local levels. We Have many NGO's to start with **TOBB & TÜSİAD...**
- The knowledge economy, epitomized by Internet, simply will not **develop without broad public participation**, channeled through a functionally organized system that both produces and shares knowledge. We have a long way to go...
- A good start with involving NGOs into the design of the **e-Transformation Turkey Project** should be continued and further strengthened at the level of specific implementation initiatives.

Chain Value Creation, Turkish Industrial Sector



R & D in Our Sphere

- In TURKEY and its sphere of influence, we have
 - world class, distinguished research scientists in our big universities,
 - Highly skilled engineers and professionals, in our leading high tech companies
- But unfortunately,
 - Despite **limited sources**, our R&D efforts are **inefficient, unfocused and isolated**.
 - We have an apparent **scarcity of professors/skilled personnel** at our universities/companies
 - There is a drastic **brain drain** to the tech centers of western countries.
 - Billions of dollars of R& D share is flowing to the western institutions from our countries anyway, due to the ***technology import***.

Innovative Activities ...

- Turkey has established the main backbones of innovation policy in the last decade with the attempts of
 - High Council of Science and Technology and
 - The Scientific and Technological Research Council Of Turkey (TÜBİTAK, a very proficiened, institutional establishment).
- However, there are still persisting problems:
 - The share of business sector in total R&D expenditures is around 35%.
 - More than 60% of Turkey's R&D effort is carried out by universities.

Innovative Business

- Although the innovation potential of universities is strong, university-industry relations are not as strong as should be.
- Innovation and R&D funded by enterprises are at inadequate levels, and institutional incentives for start-ups are limited. Fiscal incentives concern mainly large firms. SME-specific fiscal incentives are almost non-existing.
- Existing consultancy firms are also limited in number. They should be organized especially around industrial districts and public support is necessary for the establishment of such firms. The general target group of these consultancy services should be rather oriented towards SMEs.

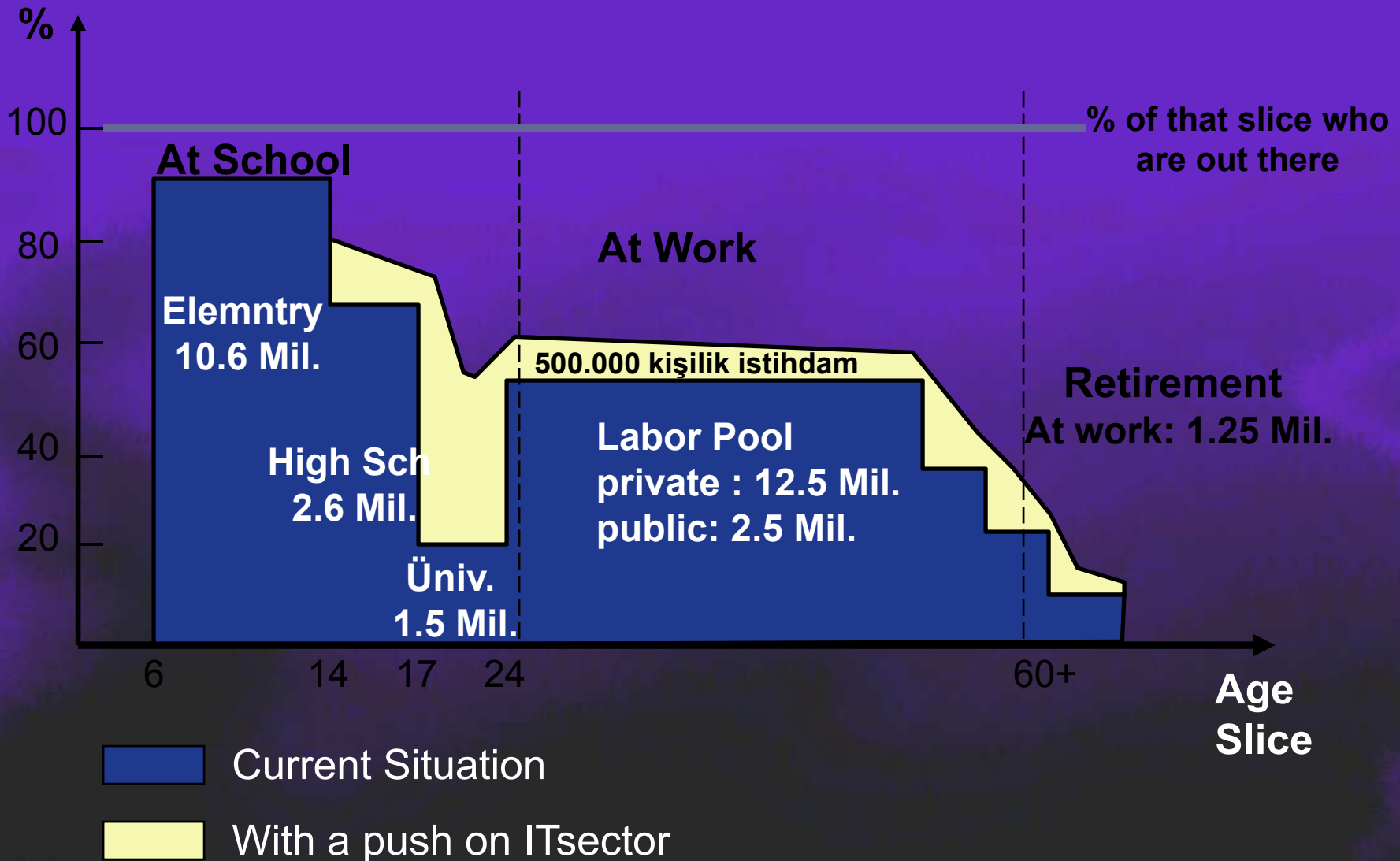
Innovative Activities, FDI & NIS...

- Foreign Direct Investment (FDI) may enable Turkey to approach technology frontier at least in certain sectors by means of effective technology transfer. Thus, higher levels of FDI is required as a source of new technologies and know-how (benefits are not automatic but require appropriate public policy)
- In Knowledge Societies, different elements of National Innovation System (NIS) are in balance. Establishments similar to TÜBİTAK are led by the Prime Ministry and includes Ministers of Education, Finance, Labor and Industry, as well as the representatives of the main business and labor associations. This structure acts as a consensus-building mechanism for the execution of innovation policies.
- That mechanism is only now starting to work in TR

Young Population, Low Demand for High Skills

- The aging of Turkey's population will not occur before 2050 in opposition to what will happen in most European countries towards 2010. It might be an opportunity as well as a risk in the context of **brain drain** for Turkey.
- The most striking fact about Turkish labor market is that **unemployment rates among young people** are generally higher among those with higher education levels, and **demand for skilled labor is relatively low.**

O&T on Population Pyramid



Human Capital: Skilled and Young

- Education and training are not attuned to the needs of the economy. This has serious implications for productivity and innovativeness of the economy. It also creates dissatisfaction in an important segment of the population and can reduce the incentives to seek education.
- Skills and competencies for the knowledge economy are not sufficient to meet current demand, particularly given the rapid pace of technological change.
- The level of technical expertise is relatively high, especially in science and engineering, but the technical training does not meet industry needs (little non-formal training by private enterprises due to the absence of incentives and occupational standards), despite recent improvements...

Human Capital

- If Turkey is to compete in the knowledge economy it must continually upgrade the skills of its work force. Financial and other incentives should be conceived to encourage individuals and enterprises to invest in training: (i) tax incentives for individuals and enterprises (ii) targeted incentives to stimulate the development of public and private educational service providers (iii) special initiatives to promote training by SMEs in both the formal and non-formal sectors.
- Priority should be given to the reform of the governance of tertiary education, including universities and Higher Vocational Schools (MYOs), with the objective of increasing the linkages between tertiary education and business sector.
- There also are particular needs to create incentives to stimulate skill development by SMEs, to improve their productivity and support the knowledge economy, and to stimulate the supply by private and public service providers of high-priority training services.

ICT

- **The ICT sector is strong in some areas, but notably weak in others. In general, weaknesses in the ICT environment are the result mostly of regulatory restrictions that limit supply and raise costs. The usage, diffusion, and production of ICT products in Turkey as a result fall short of their potential.**
- **In terms metrics such as: e-readiness, digital opportunity index, broadband as proportion of total internet subscribers, etc Turkey is ranked amongst the last in listed similar prospering countries.**
- **We consume ICT without producing much**
- **The role of FDI is also critical for the development of ICT sector in Turkey.**

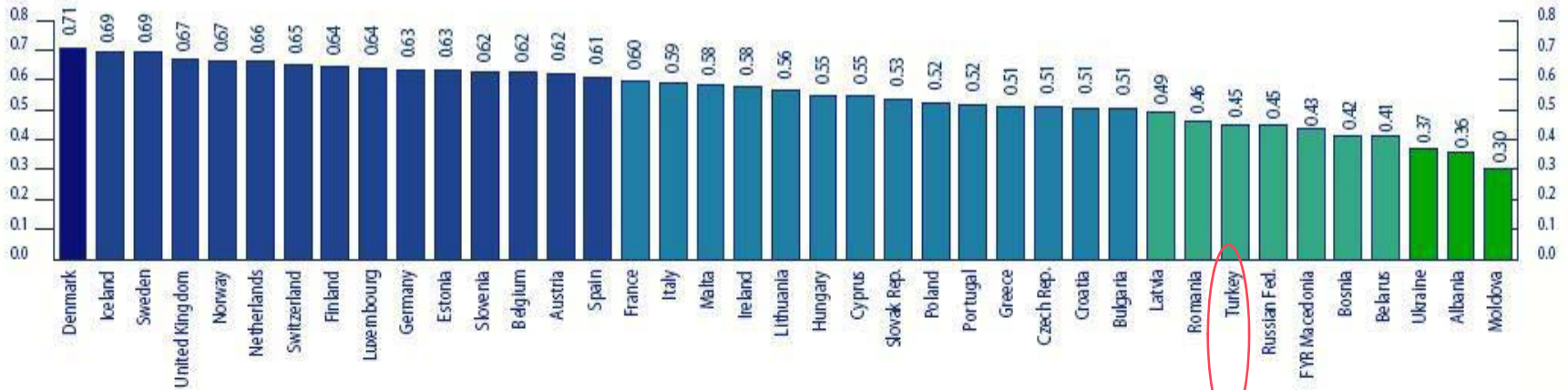
E-readiness rankings, 2006

In terms of e-readiness Turkey is ranked 43 out of 68 countries

| 2006 e-readiness rank (of 68) | 2005 rank | Country | 2006 e-readiness score (of 10)* | 2005 score | 2006 e-readiness rank (of 68) | 2005 rank | Country | 2006 e-readiness score (of 10)* | 2005 score |
|-------------------------------|-----------|-------------|---------------------------------|------------|-------------------------------|-----------|-------------|---------------------------------|------------|
| 1 | 1 | Denmark | 9 | 8.74 | 35 | 32 | S. Africa | 5.74 | 5.53 |
| 2 | 2 | US | 8.88 | 8.73 | 36 | 34 | Slovakia | 5.65 | 5.51 |
| 3 | 4 | Switzerland | 8.81 | 8.62 | 37 | 35 | Malaysia | 5.6 | 5.43 |
| 4 | 3 | Sweden | 8.74 | 8.64 | 38 | 40 | Lithuania | 5.45 | 5.04 |
| 5 | 5 | UK | 8.64 | 8.54 | 39 (tie) | 37 | Latvia | 5.3 | 5.11 |
| 6 | 8 | Netherlands | 8.6 | 8.28 | 39 (tie) | 36 | Mexico | 5.3 | 5.21 |
| 7 | 6 | Finland | 8.55 | 8.32 | 41 | 38 | Brazil | 5.29 | 5.07 |
| 8 | 10 | Australia | 8.5 | 8.22 | 42 | 39 | Argentina | 5.27 | 5.05 |
| 9 | 12 | Canada | 8.37 | 8.03 | 43 | 41 | Jamaica | 5.03 | 4.82 |
| 10 | 6 | Hong Kong | 8.36 | 8.32 | 44 | 42 | Bulgaria | 4.86 | 4.68 |
| 11 | 9 | Norway | 8.35 | 8.27 | 45 | 43 | Turkey | 4.77 | 4.58 |
| 12 | 12 | Germany | 8.34 | 8.03 | 46 | 46 | S. Arabia | 4.67 | 4.38 |
| 13 | 11 | Singapore | 8.24 | 8.18 | 47 | 44 | Thailand | 4.63 | 4.56 |
| 14 (tie) | 16 | N. Zealand | 8.19 | 7.82 | 48 | 45 | Venezuela | 4.47 | 4.53 |
| 14 (tie) | 14 | Austria | 8.19 | 8.01 | 49 (tie) | 50 | Peru | 4.44 | 4.07 |
| 16 | 15 | Ireland | 8.09 | 7.98 | 49 (tie) | 47 | Romania | 4.44 | 4.19 |
| 17 | 17 | Belgium | 7.99 | 7.71 | 51 | 48 | Colombia | 4.41 | 4.18 |
| 18 | 18 | South Korea | 7.9 | 7.66 | 52 | 52 | Russia | 4.3 | 3.98 |
| 19 | 19 | France | 7.86 | 7.61 | 53 | 49 | India | 4.25 | 4.17 |
| 20 | -- | Bermuda* | 7.81 | -- | 54 | -- | Jordan* | 4.22 | -- |
| 21 | 21 | Japan | 7.77 | 7.42 | 55 | 53 | Egypt | 4.14 | 3.9 |
| 22 | 20 | Israel | 7.59 | 7.45 | 56 | 51 | Philippines | 4.04 | 4.03 |
| 23 | 22 | Taiwan | 7.51 | 7.13 | 57 | 54 | China | 4.02 | 3.85 |
| 24 | 23 | Spain | 7.34 | 7.08 | 58 | 55 | Ecuador | 3.88 | 3.83 |
| 25 | 24 | Italy | 7.14 | 6.95 | 59 | 56 | Sri Lanka | 3.75 | 3.8 |
| 26 | 25 | Portugal | 7.07 | 6.9 | 60 | 58 | Nigeria | 3.69 | 3.46 |
| 27 | 26 | Estonia | 6.71 | 6.32 | 61 | 57 | Ukraine | 3.62 | 3.51 |
| 28 | 27 | Slovenia | 6.43 | 6.22 | 62 | 60 | Indonesia | 3.39 | 3.07 |
| 29 | 28 | Greece | 6.42 | 6.19 | 63 | 63 | Algeria | 3.32 | 2.94 |
| 30 | -- | UAE* | 6.32 | -- | 64 | 62 | Kazakhstan | 3.22 | 2.97 |
| 31 | 31 | Chile | 6.19 | 5.97 | 65 | 59 | Iran | 3.15 | 3.08 |
| 32 (tie) | 29 | Czech Rep. | 6.14 | 6.09 | 66 | 61 | Vietnam | 3.12 | 3.06 |
| 32 (tie) | 30 | Hungary | 6.14 | 6.07 | 67 | 64 | Pakistan | 3.03 | 2.93 |
| 34 | 32 | Poland | 5.76 | 5.53 | 68 | 65 | Azerbaijan | 2.92 | 2.72 |

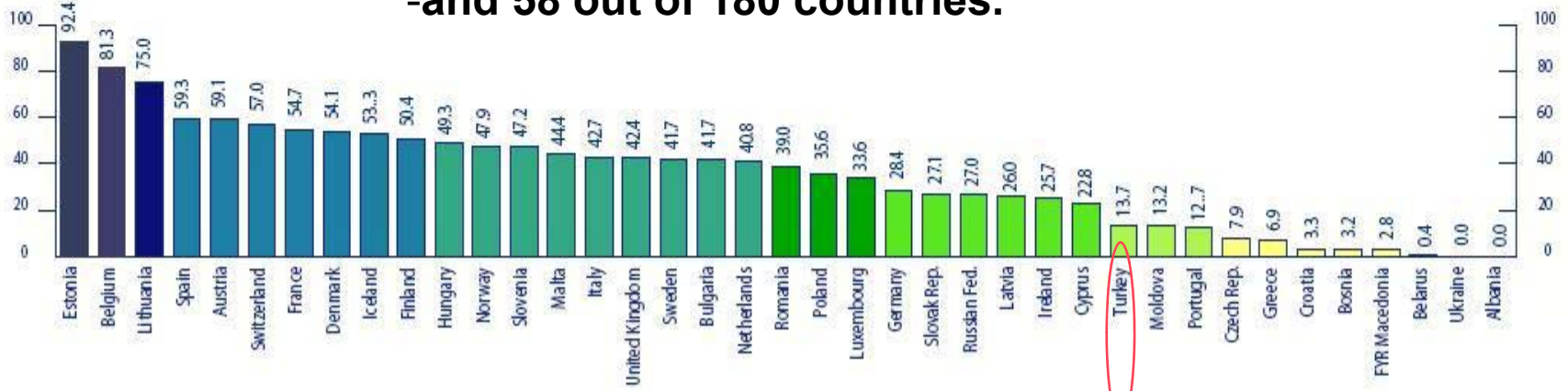
DIGITAL OPPORTUNITY INDEX

Overall DOI score



-For DOI Turkey ranks as 32 out of 40 European countries
-and 58 out of 180 countries.

Broadband as a proportion of total Internet subscribers



-For DOI Turkey ranks as 32 out of 40 European countries
-and 58 out of 180 countries.

Table 2d Digital Opportunity Index 2005 – Europe

| Rank in Europe 2004/2005 | Economy | Opportunity 2004/2005 | Infrastructure 2004/2005 | Utilization 2004/2005 | Digital Opportunity Index 2004/2005 | World Rank 2004/2005 |
|--------------------------|-----------------------|-----------------------|--------------------------|-----------------------|-------------------------------------|----------------------|
| 1 | Denmark | 0.99 | 0.75 | 0.37 | 0.71 | 3 |
| 2 | Iceland | 0.99 | 0.72 | 0.37 | 0.69 | 4 |
| 3 | Sweden | 0.99 | 0.74 | 0.35 | 0.69 | 6 |
| 4 | United Kingdom | 0.99 | 0.68 | 0.33 | 0.67 | 7 |
| 5 | Norway | 0.99 | 0.66 | 0.34 | 0.67 | 8 |
| 6 | Netherlands | 0.99 | 0.67 | 0.32 | 0.66 | 9 |
| 7 | Switzerland | 0.99 | 0.63 | 0.33 | 0.65 | 15 |
| 8 | Finland | 0.99 | 0.60 | 0.34 | 0.64 | 17 |
| 9 | Luxembourg | 0.99 | 0.65 | 0.27 | 0.64 | 18 |
| 10 | Germany | 0.99 | 0.64 | 0.27 | 0.63 | 19 |
| 11 | Estonia | 0.98 | 0.47 | 0.44 | 0.63 | 20 |
| 12 | Slovenia | 0.98 | 0.63 | 0.26 | 0.62 | 22 |
| 13 | Belgium | 0.99 | 0.50 | 0.38 | 0.62 | 23 |
| 14 | Austria | 0.99 | 0.54 | 0.34 | 0.62 | 24 |
| 15 | Spain | 0.99 | 0.54 | 0.30 | 0.61 | 25 |
| 16 | France | 0.99 | 0.49 | 0.31 | 0.60 | 27 |
| 17 | Italy | 0.99 | 0.54 | 0.24 | 0.59 | 28 |
| 18 | Malta | 0.99 | 0.48 | 0.28 | 0.58 | 29 |
| 19 | Ireland | 0.99 | 0.55 | 0.18 | 0.58 | 31 |
| 20 | Lithuania | 0.99 | 0.38 | 0.32 | 0.56 | 32 |
| 21 | Hungary | 0.98 | 0.43 | 0.24 | 0.55 | 34 |
| 22 | Cyprus | 0.99 | 0.50 | 0.16 | 0.55 | 35 |
| 23 | Slovak Republic | 0.98 | 0.39 | 0.23 | 0.53 | 37 |
| 24 | Poland | 0.98 | 0.39 | 0.19 | 0.52 | 39 |
| 25 | Portugal | 0.98 | 0.45 | 0.12 | 0.52 | 41 |
| 26 | Greece | 0.99 | 0.47 | 0.07 | 0.51 | 42 |
| 27 | Czech Republic | 0.98 | 0.42 | 0.13 | 0.51 | 43 |
| 28 | Croatia | 0.97 | 0.44 | 0.10 | 0.51 | 45 |
| 29 | Bulgaria | 0.96 | 0.34 | 0.22 | 0.51 | 46 |
| 30 | Latvia | 0.97 | 0.33 | 0.17 | 0.49 | 48 |
| 31 | Romania | 0.93 | 0.26 | 0.20 | 0.46 | 53 |
| 32 | Turkey | 0.97 | 0.30 | 0.08 | 0.45 | 58 |
| 33 | Russia | 0.96 | 0.25 | 0.13 | 0.45 | 60 |
| 34 | TFYR Macedonia | 0.92 | 0.35 | 0.04 | 0.43 | 63 |
| 35 | Serbia and Montenegro | 0.95 | 0.30 | 0.03 | 0.42 | 70 |
| 36 | Bosnia | 0.93 | 0.27 | 0.05 | 0.42 | 75 |
| 37 | Belarus | 0.92 | 0.24 | 0.07 | 0.41 | 76 |
| 38 | Ukraine | 0.91 | 0.17 | 0.02 | 0.37 | 93 |
| 39 | Albania | 0.90 | 0.17 | 0.01 | 0.36 | 97 |
| 40 | Moldova | 0.68 | 0.14 | 0.07 | 0.30 | 115 |
| Europe | | 0.97 | 0.46 | 0.22 | 0.55 | 38 |

ICT

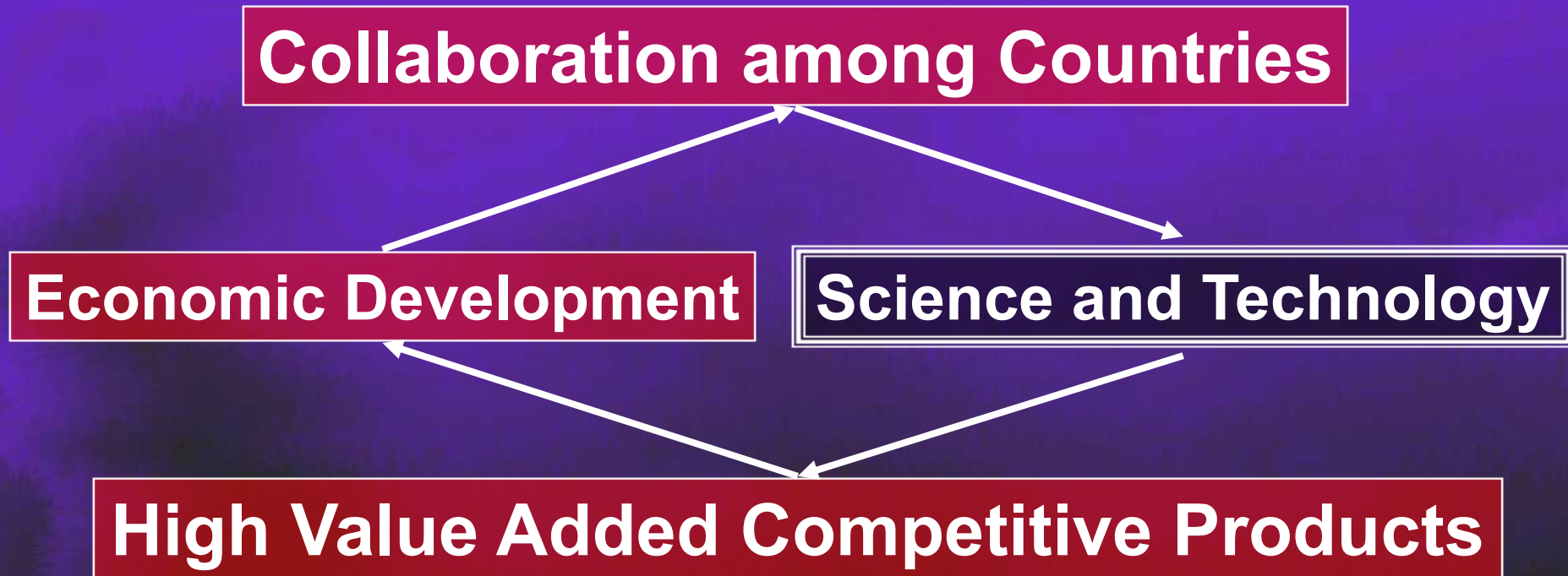
- **The cost of access to the Internet in Turkey is one of the lowest among OECD countries, but while there are a large number of licensed ISPs low Internet charges do not translate into high Internet usage, yet...**
- **Several factors are responsible for this paradox of low cost but low penetration:**
 - **poor computer literacy.**
 - **insufficient use of e-services by the public sector; and**
 - **lack of investment in infrastructure in general and in Internet in particular;**
 - **low competition in the provision of electronic communications networks and ICT products and services;**
- To enhance e-commerce and improve the competitiveness of the economy, Turkey must increase Internet penetration among the low income categories and regional groups where usage is particularly low (digital divide)**

Public Policy for a Knowledge Economy in Turkey

Innovation Policy

- Expand and decentralize innovation support services and policies
- Promote world-competitive industries
- Stimulate university–industry collaboration
- Improve the regulatory environment for innovation and entrepreneurship
- Take advantage of FDI to bring innovations
- Scale up the successful innovation activities undertaken by TUBITAK, the TTGV, and others

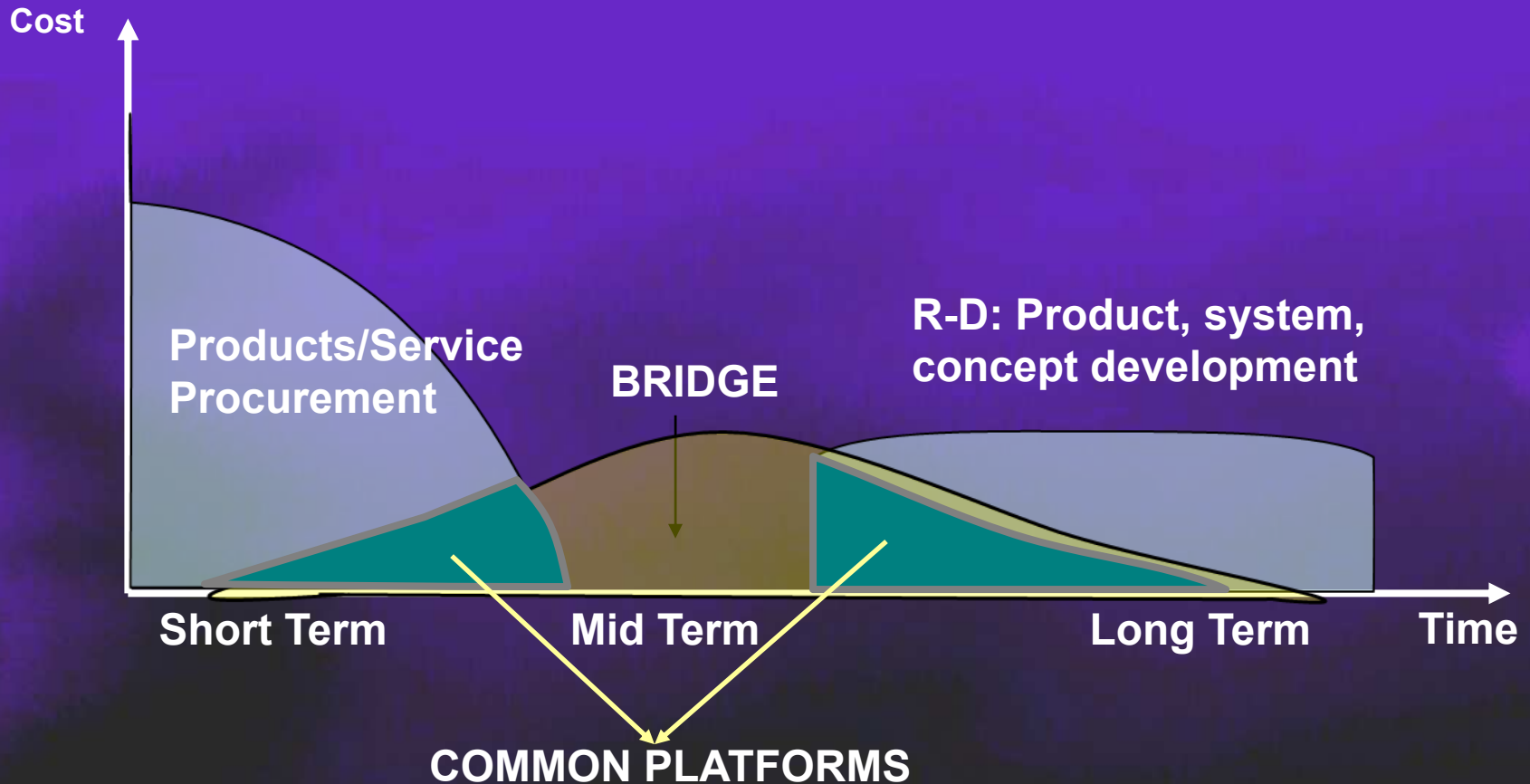
Science and Technology Based Collaborative Development



Main Elements of 3 Twisting

- 1. Setting a National Program Coordination Authority**
- 2. Joint Working Platforms:**
- 3. Development of Integrated Projects**

1. Setting a National Program Coordination Authority



2. Joint Working Platforms: Customer + Industry + Scientists

- Hybrid Organizations
 - Technoparcs
 - Strategic Partnerships
 - National R&D platforms
 - Technology Coop Programs
 - Institutions to facilitate,
 - Strategic Research Institutions
 - Spin-offs
 - “Networks of Networks” Hyper Nets
- Reflexive joint reaction capabilities

RESEARCH AREA



FDP

**Faculty (Human Resources) Development
Program**

Human Resources Development Program

International network based on inter- universities and
Turkey - Silicon Valley collaboration.

AIM: Strengthening
Universities/Business
Environment by
Developing Human
Resources

FDP Processes

- 1. Sign a Multilateral Agreement**
- 2. Determine Demand and Supply**
- 3. Selection and Placement**
- 4. R-D Experience in US universities / Silicon Valley**

**FDP BRINGS UP
MULTIDICIPLINARY
RESEARCH SCIENTISTS
TOGETHER**

FDP Interdisciplinary Areas

| Area | The Graduate programs that can be applied. |
|---|--|
| Europe, Balkans, Central Asia, Middle East and Mediterranean Studies | Eurasian Studies, European Studies, Educational Sciences, Philosophy, Economics, English Literature, Woman Studies, Media and Cultural Studies, History of Architecture, Political Science and Public Administration, Sociology, Psychology, History, International Relations, Settlement Archeology |
| Information Technologies | Computer Sciences, Computer Education and Instructional Technologies, Information Sciences, Electrical and Electronics Engineering, Statistics, Geodezical and Geographical Information Technologies, Kriptography |
| Biotechnology | Biochemistry, Biology, Biotechnology, Environment Engineering, Food Engineering, Chemistry, Chemical Engineering, Engineering Sciences |
| Geodezical and Geographical Information Technologies | Information Sciences, Statistics, Geodezical and Geographical Information Technologies, Geodezical and Geographical Information Technologies, Geological Engineering, Civil Engineering, Urban Planning |
| Democracy, Administrative Sciences and Social Participation | Educational Sciences, Philosophy, Economics, Psychology, Political Science and Public Administration, Sociology, Urban Planning, International Relations, Modern Languages |
| Natural Resources, Disaster and Environment Management | Biology, Environmental Engineering., Marine Biology and Fishing., Marine Oceanography and Geography, Educational Sciences, Philosophy, Physical Oceanography, Physics, Civil Engineering, Statistics, Geodezical and Geographical Information Technologies, Geological Engineering, Chemical Oceanography, Planning of Urban Policy and Local Governments, Mining Engineering, Architecture, Engineering Sciences, Petroleum and Natural Gas Engineering, Psychology, Sociology, Urban Planning, International Relations, Construction Sciences, Settlement Archeology |

FDP Interdisciplinary Areas

| Area | The programs that can be applied. |
|---|---|
| Education and Human Resources | Physical Education and Sports, Computer Education and Instructional Technologies, Secondary School Science and Mathematics, Elementary Education, English Literature |
| Development and Technology Policy Research | Science and Technology Policies, Philosophy, Economics, Statistics, Sociology, Urban Planning, History, International Relations, Political Science and Public Administration |
| Food Technologies | Biology, Biotechnology, Food Engineering |
| Advanced Materials | Physics, Aerospace Engineering, Chemistry, Chemical Engineering, Engineering Sciences, Metallurgical and Materials Engineering, Polymer Sciences and Technologies, Mining Engineering |
| Mechatronics | Aerospace Engineering, Electrical and Electronics Engineering, Information Sciences, Mechanical Engineering |
| Defence Industry | Electrical and Electronics Engineering, Physics, Geodesical and Geographical Information Technologies, Aerospace Engineering, Chemistry, Chemical Engineering, Engineering Sciences, Metallurgical and Materials Engineering, Polymer Sciences and Technologies, Mining Engineering |
| Basic Sciences | Biology, Biotechnology, Scientific Calculation, Financial Mathematics, Physics, Statistics, Economics, Sociology, History, Philosophy, Psychology, Mathematics, Polymer Sciences and Technologies |
| Clear Energy | Biotechnology, Physics, Aerospace Engineering, Mining Engineering, Chemical Engineering, Geological Engineering, Metallurgical and Materials Engineering, Petroleum and Natural Gas Engineering, Mechanical Engineering |

ITR

Industry Technology Research

Developing Integrated Projects (IP) for Industry Technology Research

High value added competitive product oriented projects,

- uniting the strength and capacities of countries on the direction of regional profits and**
- participating in the international partnerships with the main purpose of enhancing the economical power of the region.**

Basic Principles of IP

- **Multinational:** Unites the public institutions, universities and firms in the region.
- **Multi Resources:** Besides the national financial resources, international resources are used.
- **Cost Effective, Fast to Respond:** It directly contributes to our national economies.
- **It competes in global arena:** It increases the competitiveness of our nations in international markets.
- **In Priority Areas:** Projects are realized in 15 priority thematic areas that are determined in keeping with the needs of our region and open to innovations.

Eurasian Research Area

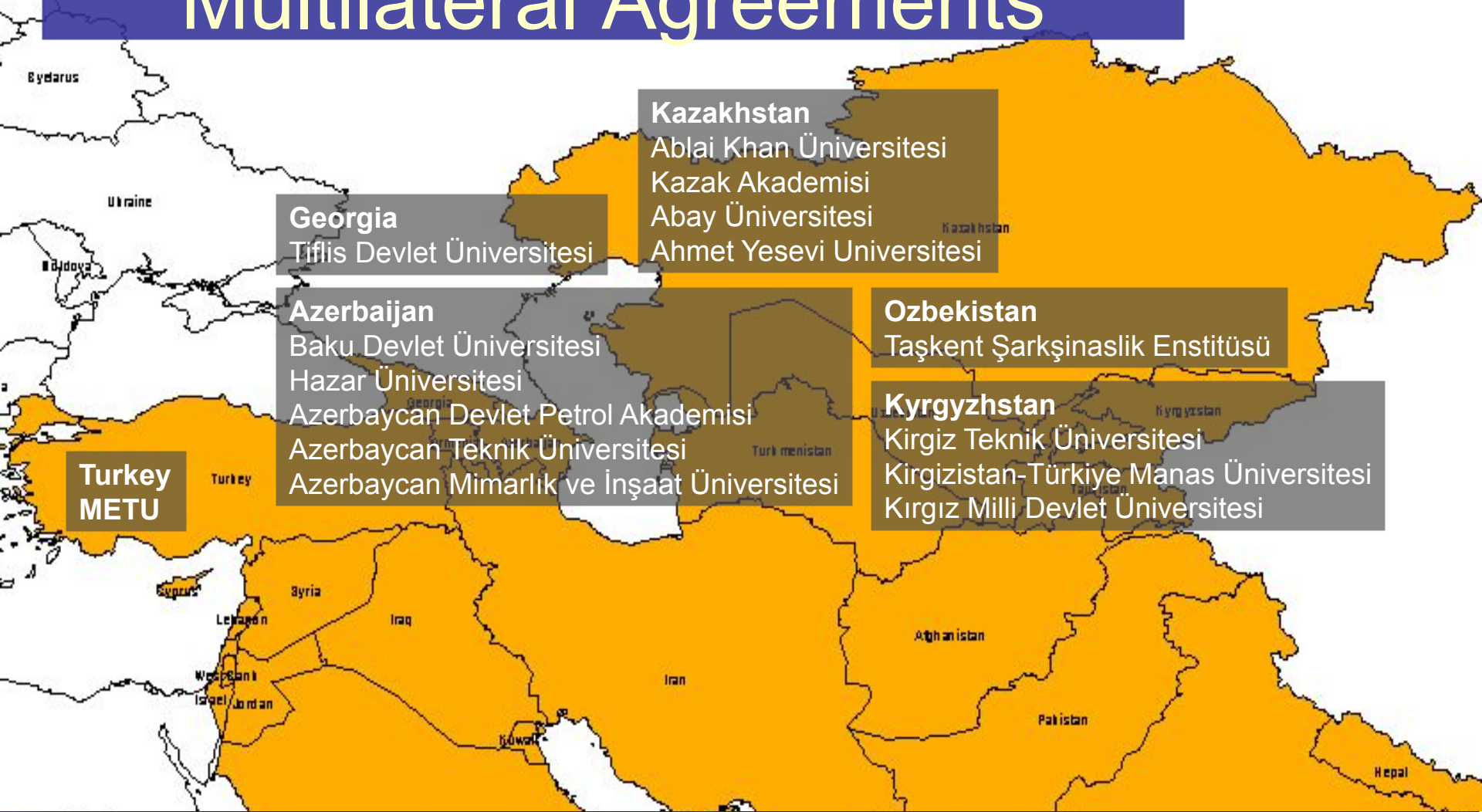
- **Integration in Central Asia and
Caucasia :**

- It provides an integration by getting together our universities and industry through the regional objectives and strategies.

- **Articulation with Europe:**

- It handles all about participation into the European Union and other International Programs within the industrialization agendas based on science and technology.

16 September 2003 Multilateral Agreements



Eurasian Research Area is open
to all our Universities and
Industry in the region.

The more participation,
the more power and synergy.

- **To unite different individuals and institutions for the same purpose, bring forth the creativity and comperative superiority.**
- **Technological surprises and outcomes.**
- **Turkey now seeking a key role in the Region**
- **Looking at Global Teknopols for cooperation to achieve the long overdue breake-thruouh**

IP Areas of Interest

1. Genetics and Biotechnology of Health (Medical Biotechnology)

2. Information Society and Technologies

3. Nanotechnologies, Smart Materials and New Production Processes

4. Aeronautics and Space

5. Food Security and Health Risks

6. Ecosystem and Clean Energy

7. Citizenship and Governance, Regional Studies-Democracy, Administrative Sciences and Public Participation

8. Earthquake Researches and Risk Management

9. Public Transportation Vehicles

10. Long Distance Education

11. Geodesical ve Geographical Information Technologies

12. Biomedical Science and Technogies

13. Meteorology

14. Multilingualism

Interactive (Distance) Education / Cooperation Centers

AIM: To increase the interaction among the universities of the region and Turkish Economic Environment and Solicitate the support of Global Technology Valleys, with the help of video conference and internet technologies, and thus enhance quality.

OBJECTIVES

To create a suitable environment for research and development without borders or limitations in time and space



1996

ODTÜ-TEKNOKENT ÇALIŞMALARININ TARİHÇESİ



DPT Teknopark Etüd Projesi başlatıldı



2000

ODTÜ-TEKNOKENT ÇALIŞMALARININ TARİHÇESİ

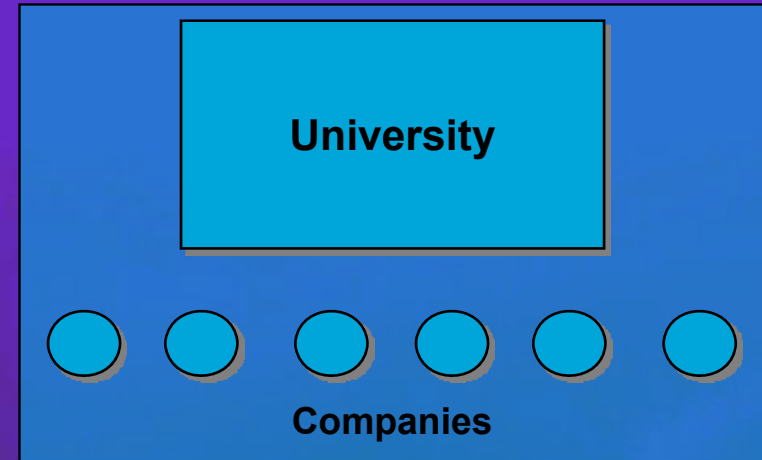
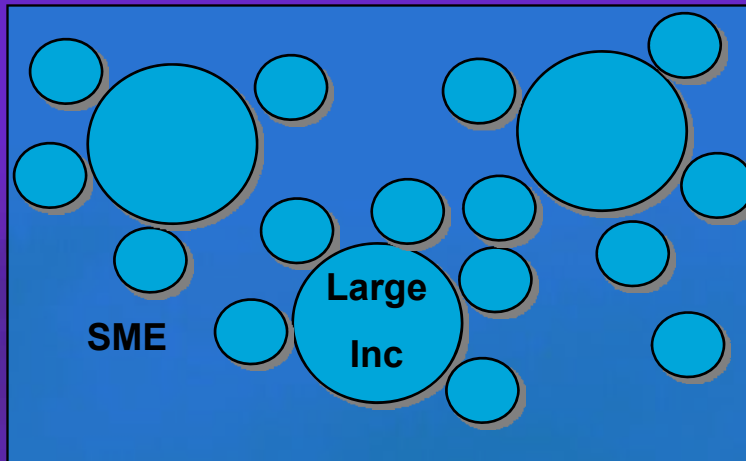


ODTÜ-Teknokent'ten görüntüler (Kasım 2000)

Shift in Technopol Paradigm

Turkish ICT Valley

Univ Technopols



APPROACH

Strategic Partnerships

R esearch_ Innovation

PRIORITY

- Attract Global Players
- Improve Capable Start ups
- Outward Orientation

- R & D
- Innovation

POSITIONING

Easy Access to Buisness Centers, HR,
ICT infrastructure

UNIVERSITY CAMPUSES

BRIDGING THE GAP THROUGH TECHNOLOGY CREATION

- There is an urgent need of a holistic research approach that will change the look towards industry and define the university, industry, state and society cooperation and collaboration in the region.
- This can be achieved via, collaborative international programs

CONCLUSION

- It is often said: “**knowledge is power and it increases only when it is shared**”, the knowledge at universities, companies and research institutions, can be brought together in our economic environment and, the present infrastructure **can be used efficiently creating a synergy in research and development of commercial value.**
- **Collaboration and cooperation among Turkey & Technopols such as the Silicon Valley will transfer the superiority of one in some specific area and will make it available to others.**
- **The universities and research institutions will facilitate a smooth transformation to **export-oriented economy** by laying the foundations of an industrial basis and **establishing competitive dynamics.****

THANK YOU...

Financial Instruments of IEP

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graph TD; A[Financial Instruments of IEP] --> B[National Instruments]; A --> C[International Instruments];
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National Instruments

Institutions and
Foundations supporting
the R&D in our countries

International Instruments

6th Framework

COST

EUREKA

NSF

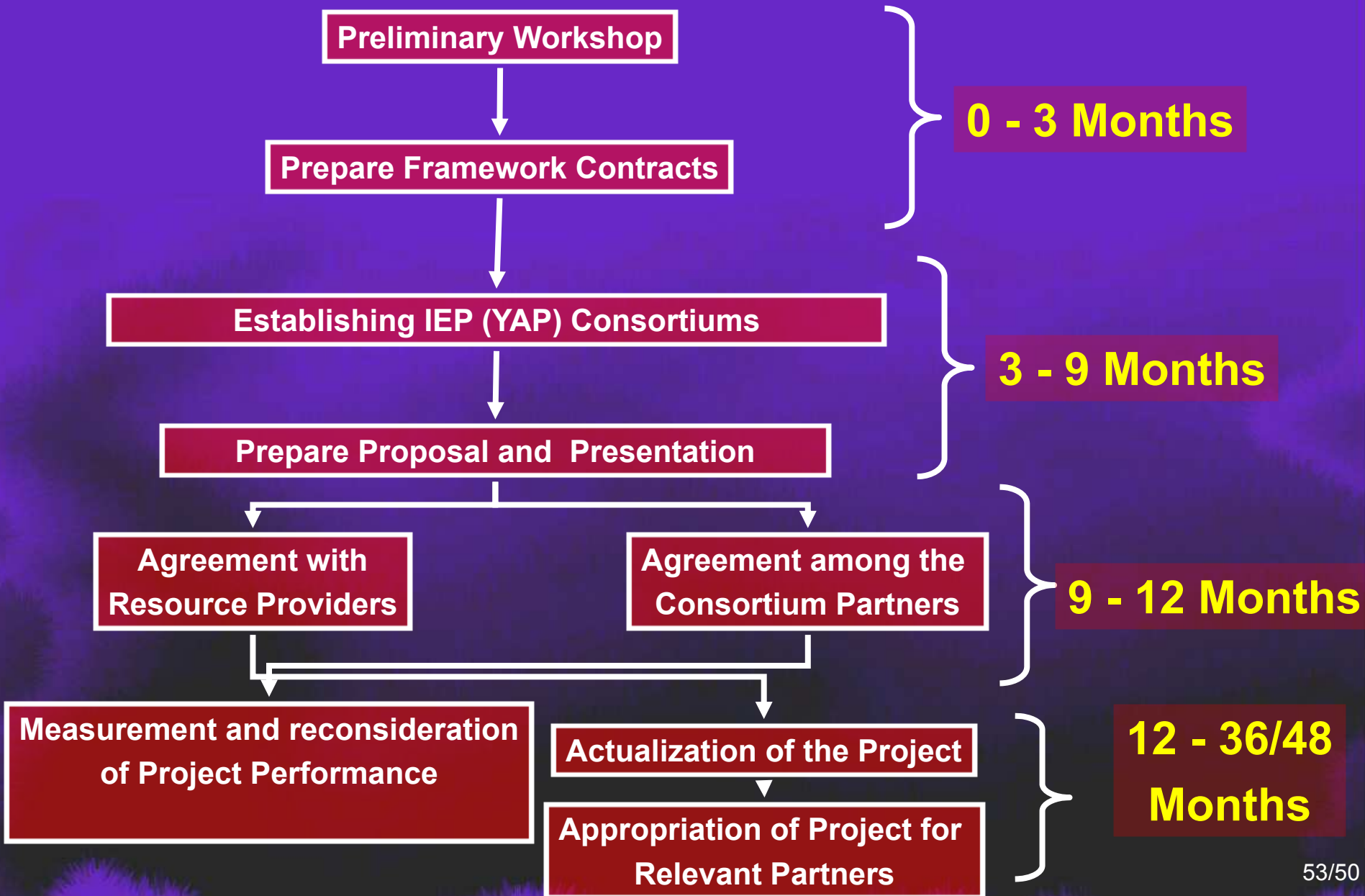
ESF

Secretariat of Turkish
Cooperation and
Development Board

IEP = Research +
Management +
Financing +

In relation with the European
Research Area.

IEP Formation Process



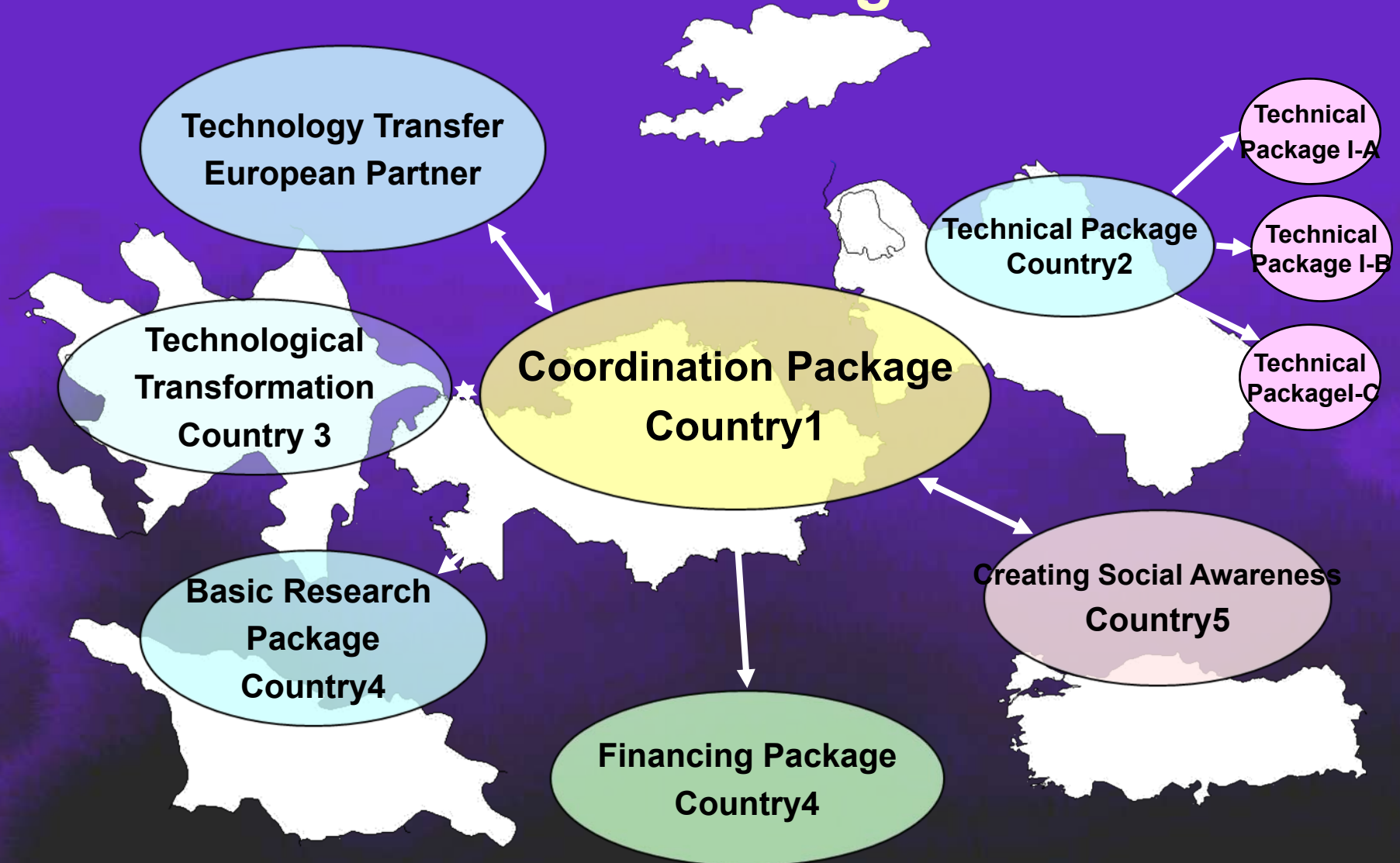
Preliminary Workshop for Each IEP Project Group

- In any secretariat of an institution,
- Open to all partners,
- Institutional capabilities are presented,
- Pre- competition collaborations are flourished.

IEP's are composed of Work Packages

| | Work Package 1 | Work Package 2 | Work Package 3 | Budget | Resource |
|-------------------------|----------------|----------------|----------------|--------|--------------------|
| COUNTRY 1 | x | | | | National Resource1 |
| COUNTRY 2 | | x | | | National Resource2 |
| European Partner | | | x | | 6 th FP. |
| Total | | | | | |

IEP's are composed of Work Packages





Public Policy for a Knowledge Economy in Turkey

Human Capital

- Develop occupational standards and assessments for vocational and professional programs
- Reform secondary education, including secondary vocational education, and improve linkages with Higher Vocational Schools (MYOs)
- Change the approach to the governance and administration of MYOs
- Reform entry requirements to tertiary education
- Increase linkages between tertiary education and business
- Increase participation in international assessments and benchmarking programs
- Change the approach to university governance
- Create business advisory boards
- Improve financing of tertiary education
- Strengthen adult continuing education, expand distance learning
- Refine quality assurance systems
- Stimulate demand for and the supply of knowledge economy skills using market-based mechanisms, supported by public-private initiatives where positive international experience exists

Public Policy for a Knowledge Economy in Turkey

ICT

- Remove restrictions of entry, including restrictions on FDI
- Prepare a thorough audit of all other restrictions on trade and investment, including restrictions on foreign ownership and related restraints in the ICT sector
- Increase Internet access and use
- Strengthen the dynamics of the ICT production sector
- Strengthen public and private demand for ICT equipment and services
- Update the ICT legal and institutional environment
- Prepare an e-readiness assessment and a multi-year investment program, combined with an implementation roadmap
- Initiate an e-procurement application
- Initiate an e-interface between the government and citizens and businesses
- Promote e-commerce

Public Policy for a Knowledge Economy in Turkey

Business Environment

- Benchmark Turkey's progress on its knowledge economy agenda with that of its key competitors. This should include the preparation, publication, and discussion of an annual government knowledge economy progress report
- Monitor and evaluate procedures to assess knowledge economy-related public investment activities such as technoparks, incubators, education programs, and e-development activities
- Raise awareness of the public at large and of policymakers
- Establish a knowledge economy policy council
- Involve regional and local authorities, institutions and enterprises, and NGOs in the design, preparation, and implementation of decentralized activities