

Creative destruction management in Lithuania

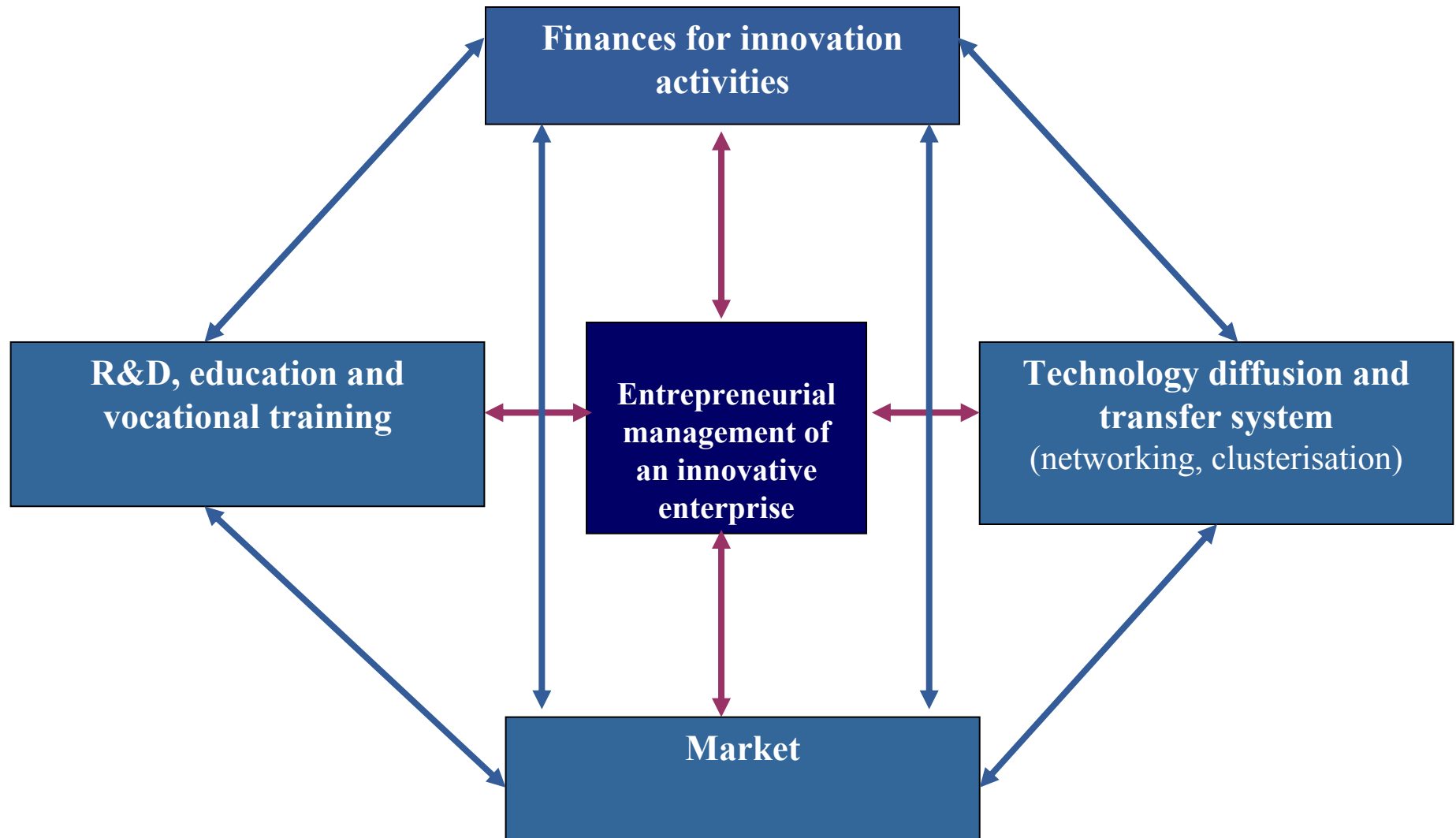
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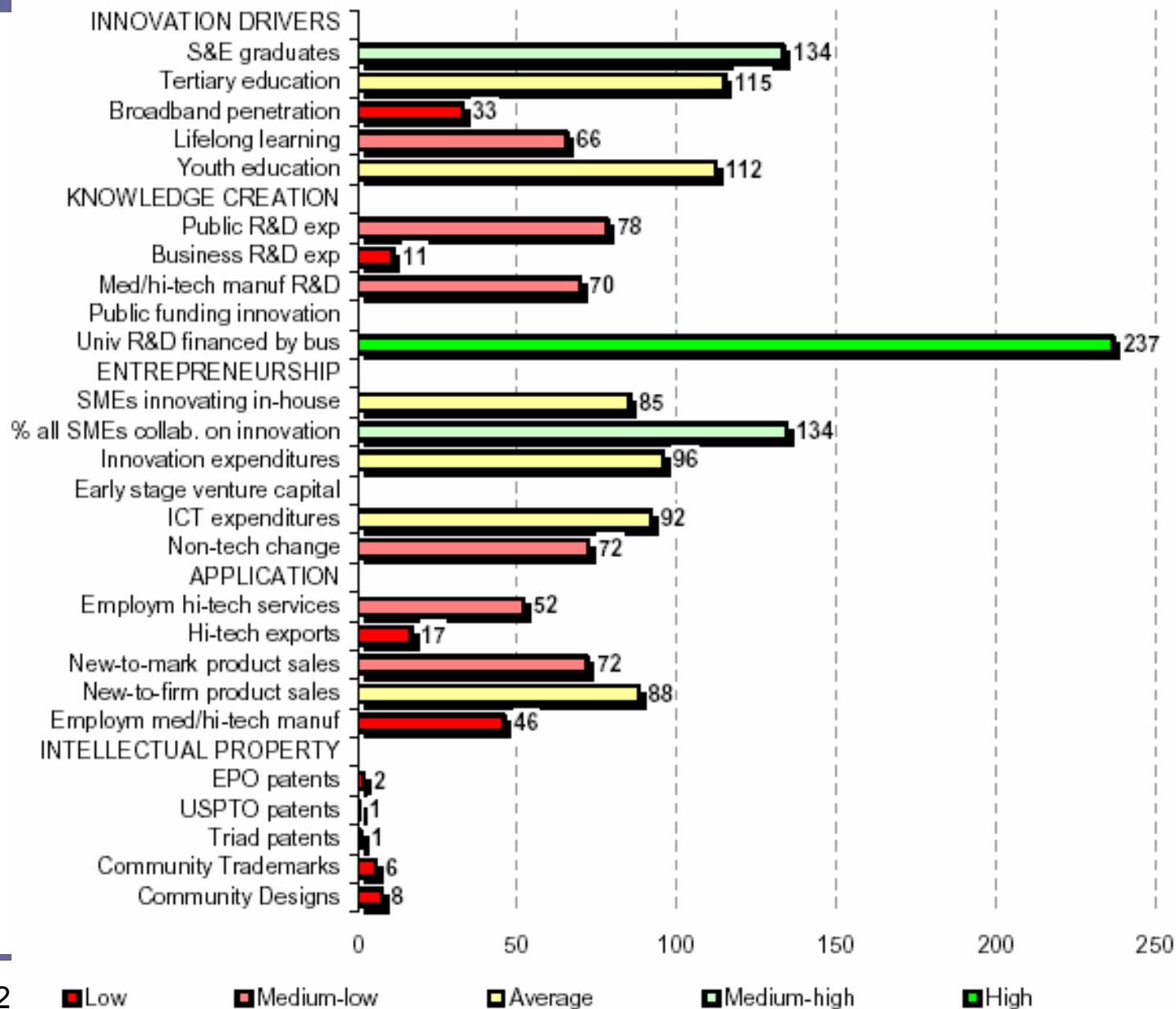
Basic elements of NIS (Hall and Soskice, 2001)



EIS. Composition of Indicators

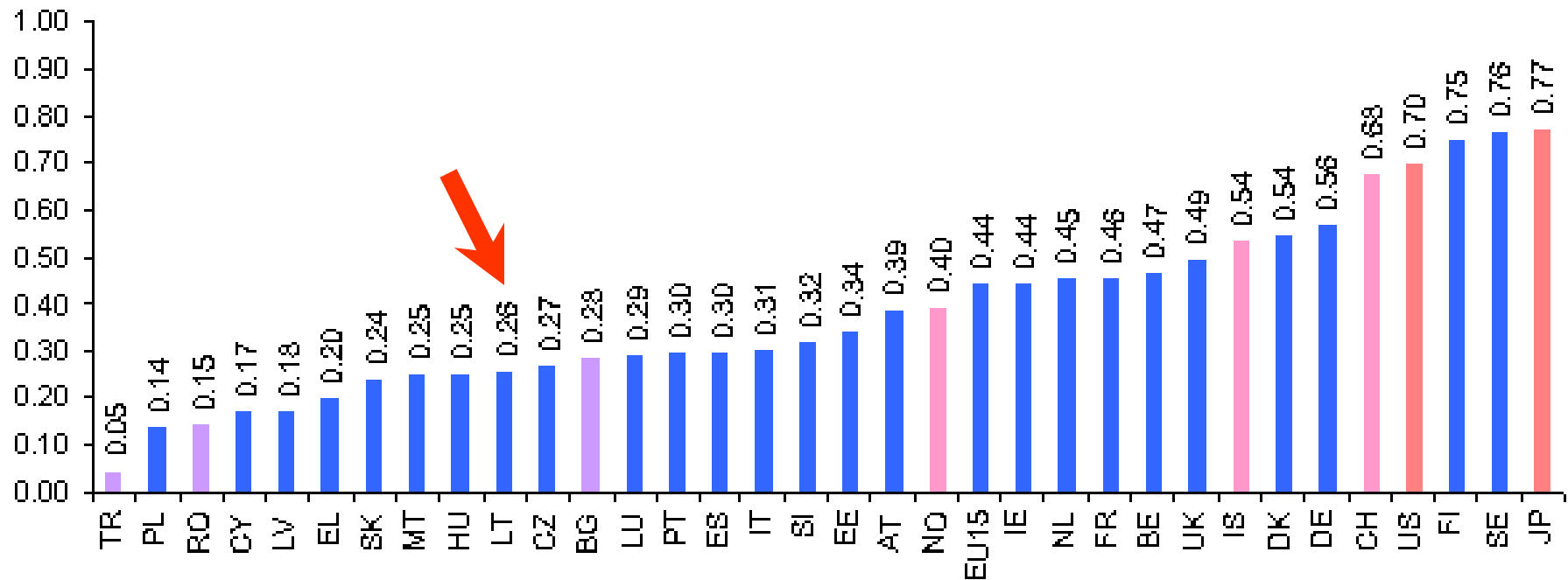
- *Innovation drivers (Innovation input)*: S&E graduates per 1000 population aged 20-29, share of the working-age population (25-64) with a tertiary education, broadband penetration rate, share of the working age population in life-long learning, percent of youth population (20-24) having completed at least upper secondary education.
- *Knowledge creation (Innovation input)*: public R&D expenditures as a percentage of GDP, Business R&D expenditures as a percentage of GDP, share of medium-high and high-tech R&D as a percentage of total manufacturing R&D, share of firms receiving public funding support for innovation, share of university R&D spending funded by the business sector.
- *Innovation and entrepreneurship (Innovation input)*: share of SMEs innovating inhouse, share of innovative SMEs participating in innovation cooperation, total innovation expenditures as a share of total turnover, early-stage venture capital as a share of GDP, ICT expenditures as a share of GDP, share of SMEs implementing non-technological changes.
- *Application (Innovation output)*: share of total workforce employed in high tech services, share of total exports from high technology products, share of total turnover from new-to-market products, share of total turnover from new-to-firm but not-new-to-market products, share of the total workforce employed in medium-high and high technology manufacturing.
- *Intellectual property (IP) (innovation output)*: The five indicators give measures of IP per million population: EPO patents, USPTO patents, triadic patent families, new community trademarks, new community designs.

EIS 2005 Innovation performance (relative to EU average) - LITHUANIA

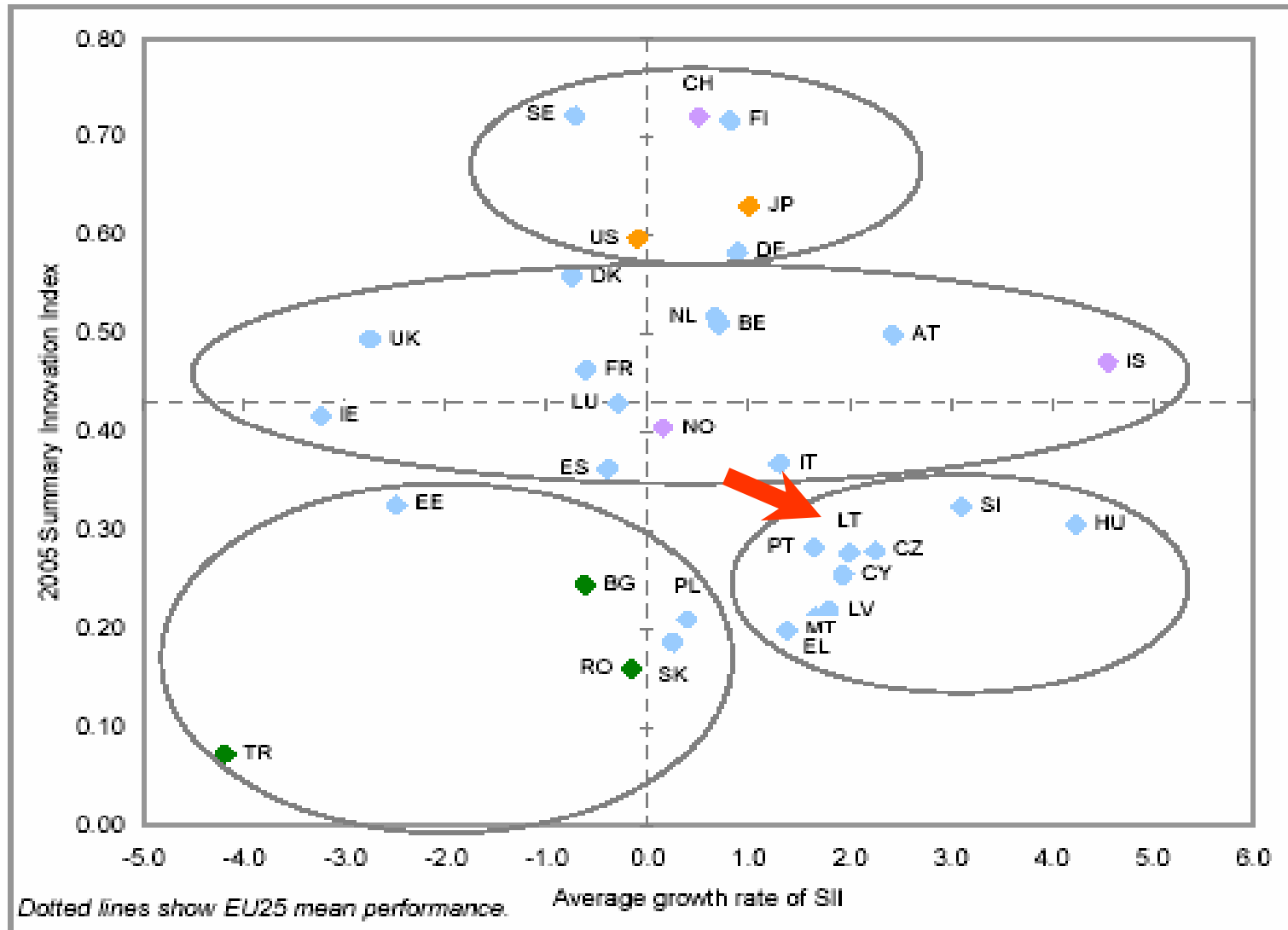


Summary Innovation Index, 2004

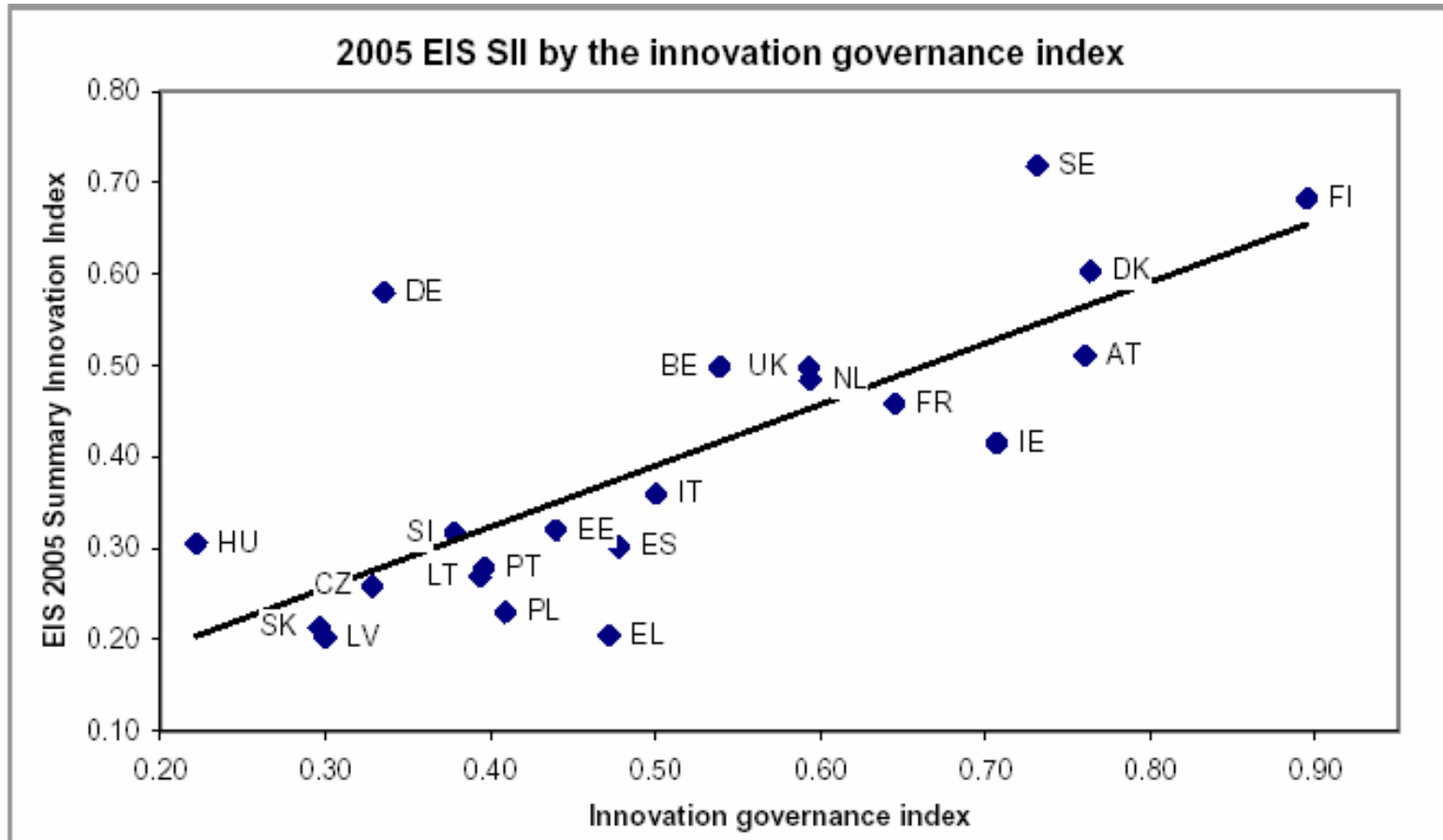
Figure 1. The 2004 Summary Innovation Index (SII)



Suminis inovatyvumo indeksas ir jo kitimas (SII, European Innovation Scoreboard'2005)

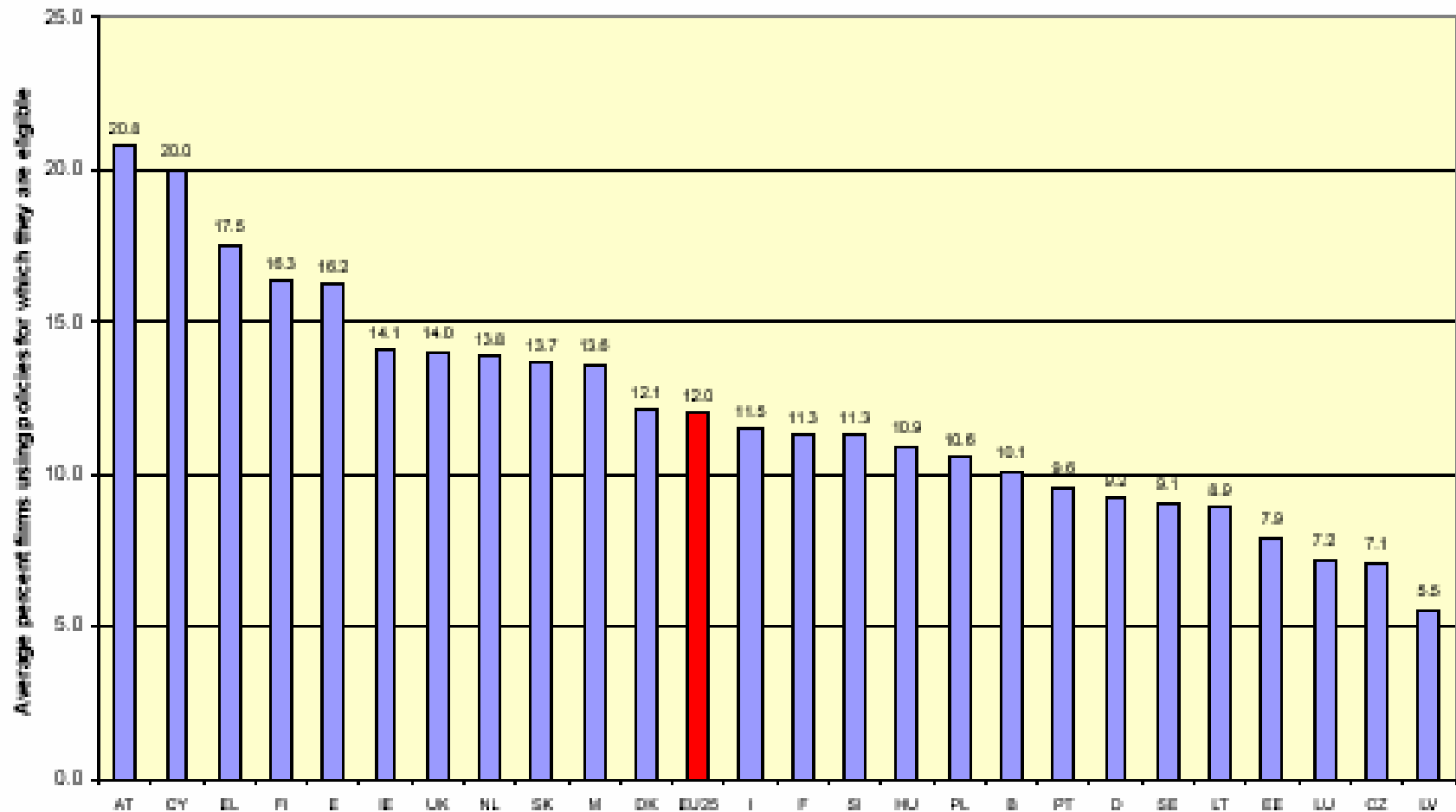


Innovation governance



Innovation policy uptake rate

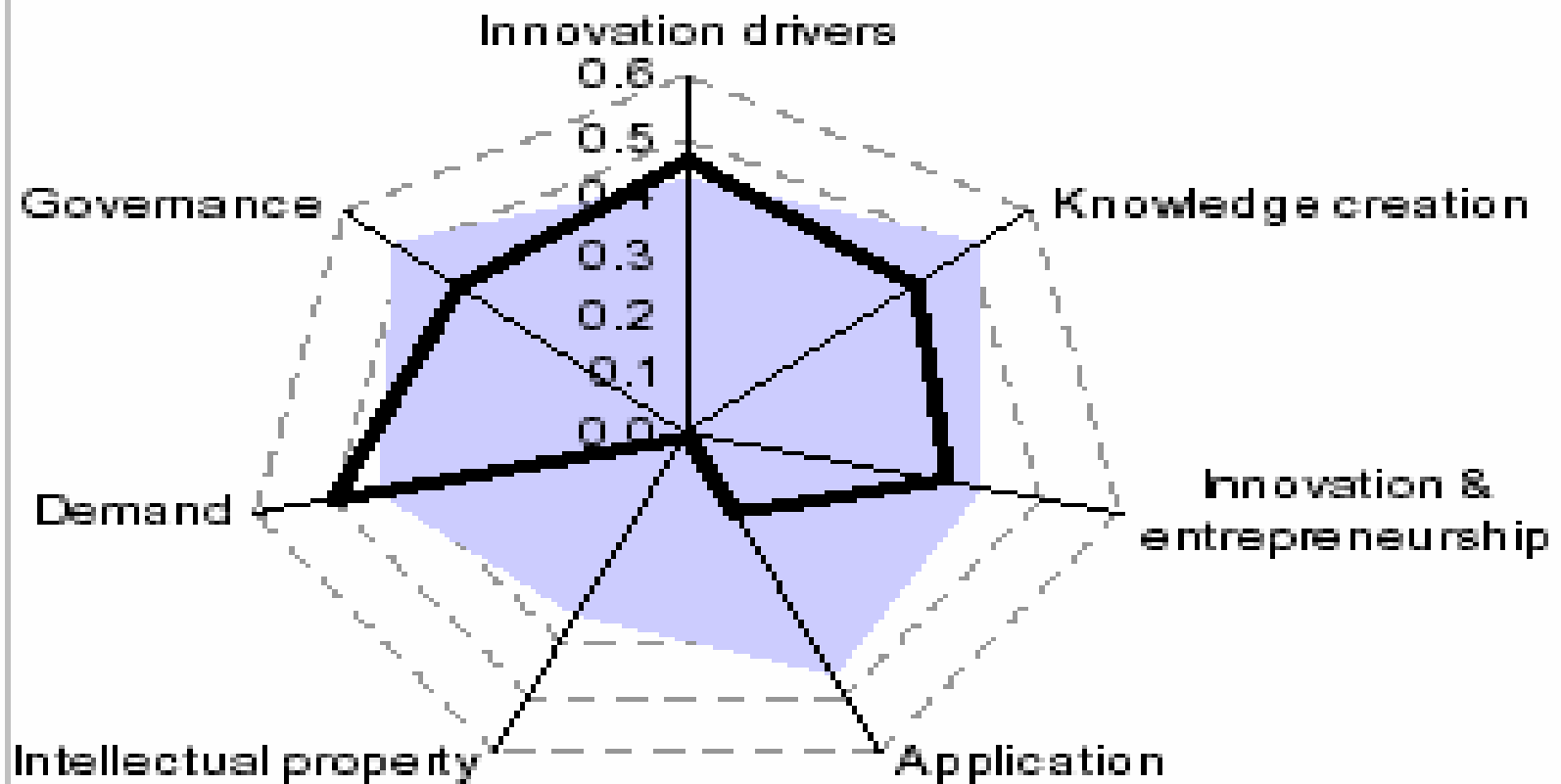
Eligible policy uptake rate for innovative SMEs (20 - 499 employees) by country



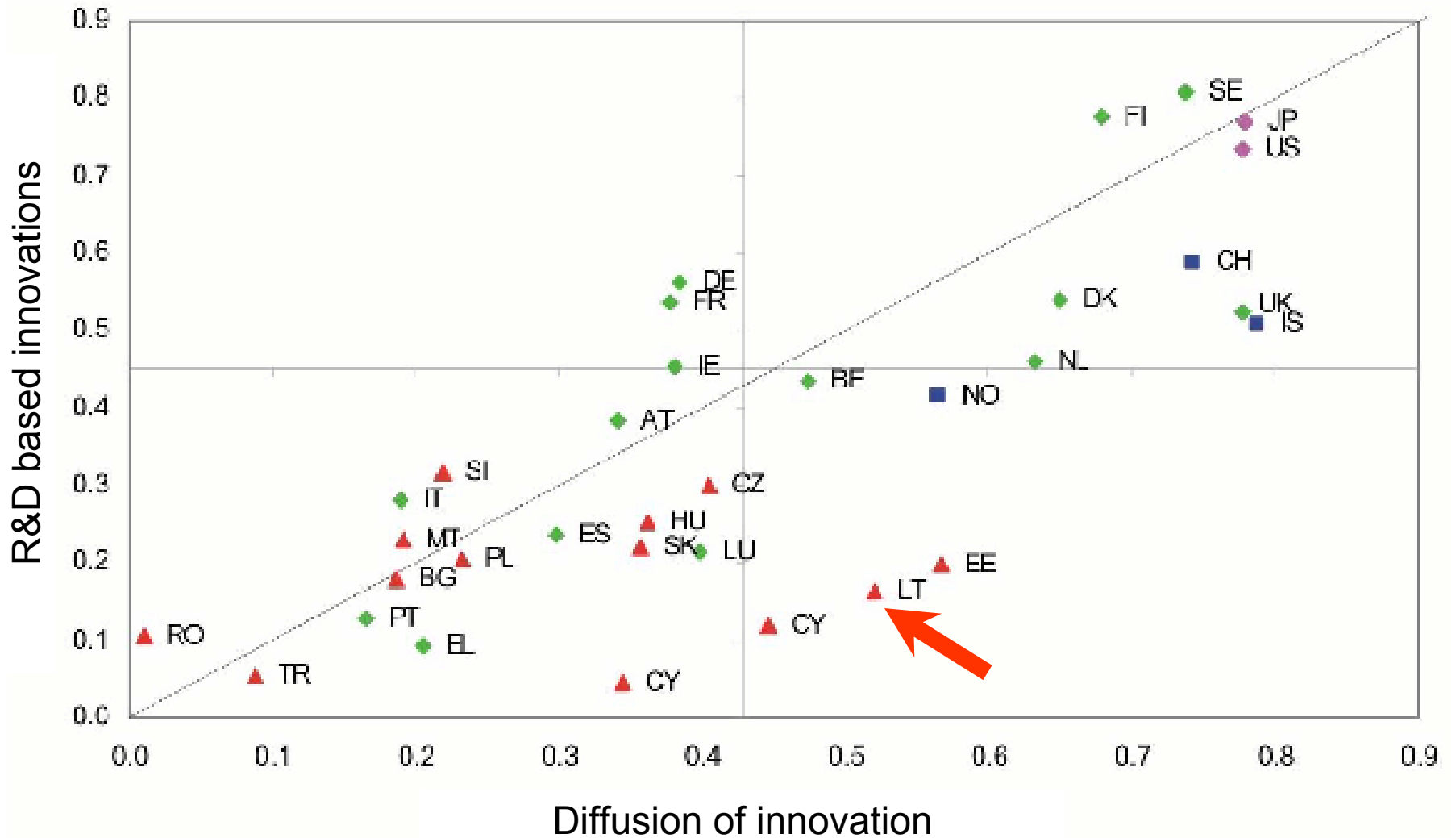
Innovation policy uptake by firms LITHUANIA

- **24.3% firms that use any innovation support programme,**
- **By each type of programme:**
 - **Market 1.9 %**
 - **Research 1.9 %**
 - **Hiring 0.0 %**
 - **Training 4.9 %**
 - **Networking 1.9 %**
 - **Processes 1.9 %**
 - **Collaboration 3.9 %**
 - **Advice 17.5 %**
- **2.9 % report that policy support was crucial to their ability to innovate**

LITHUANIA



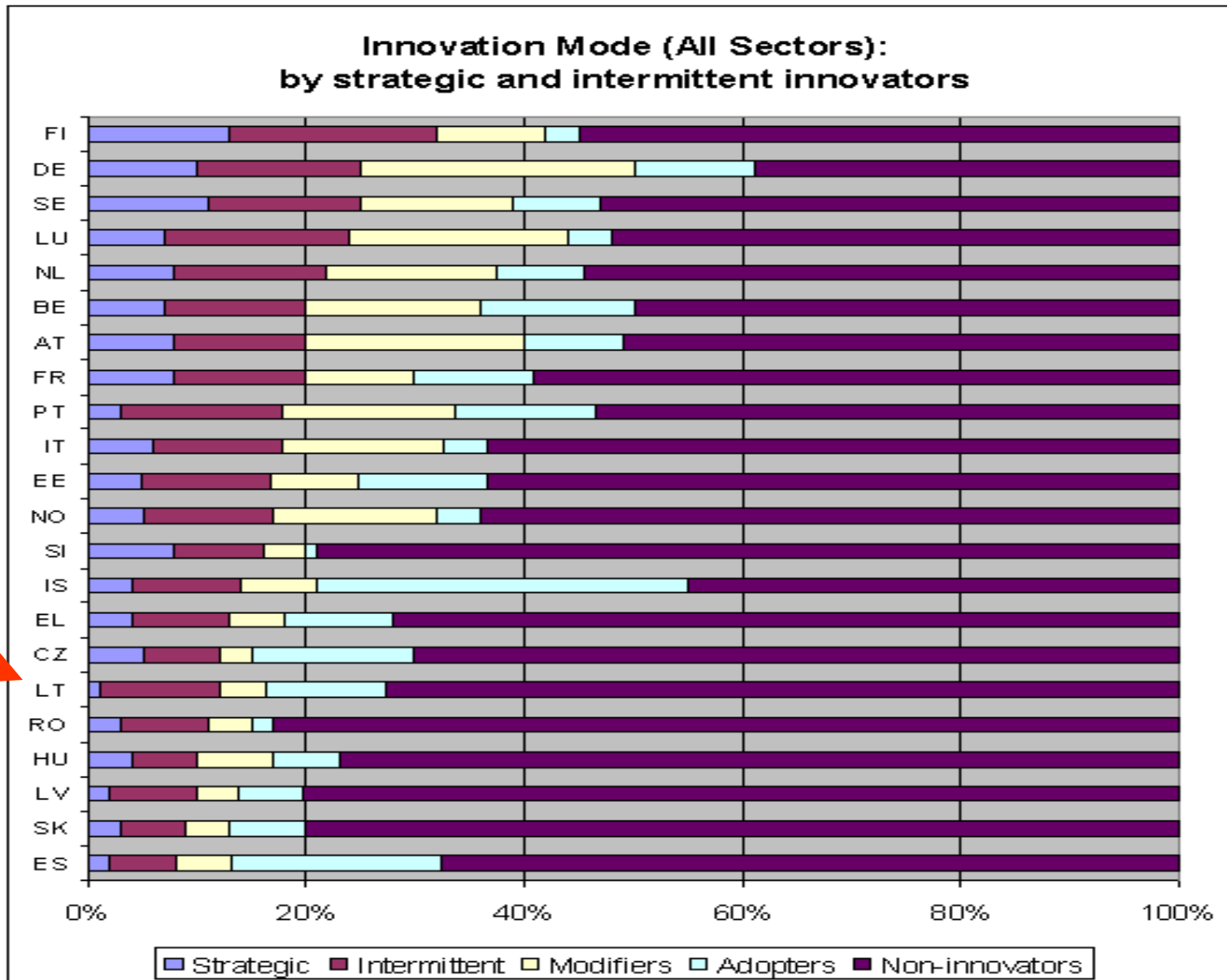
Innovation development (European Innovation Scoreboard'2004)



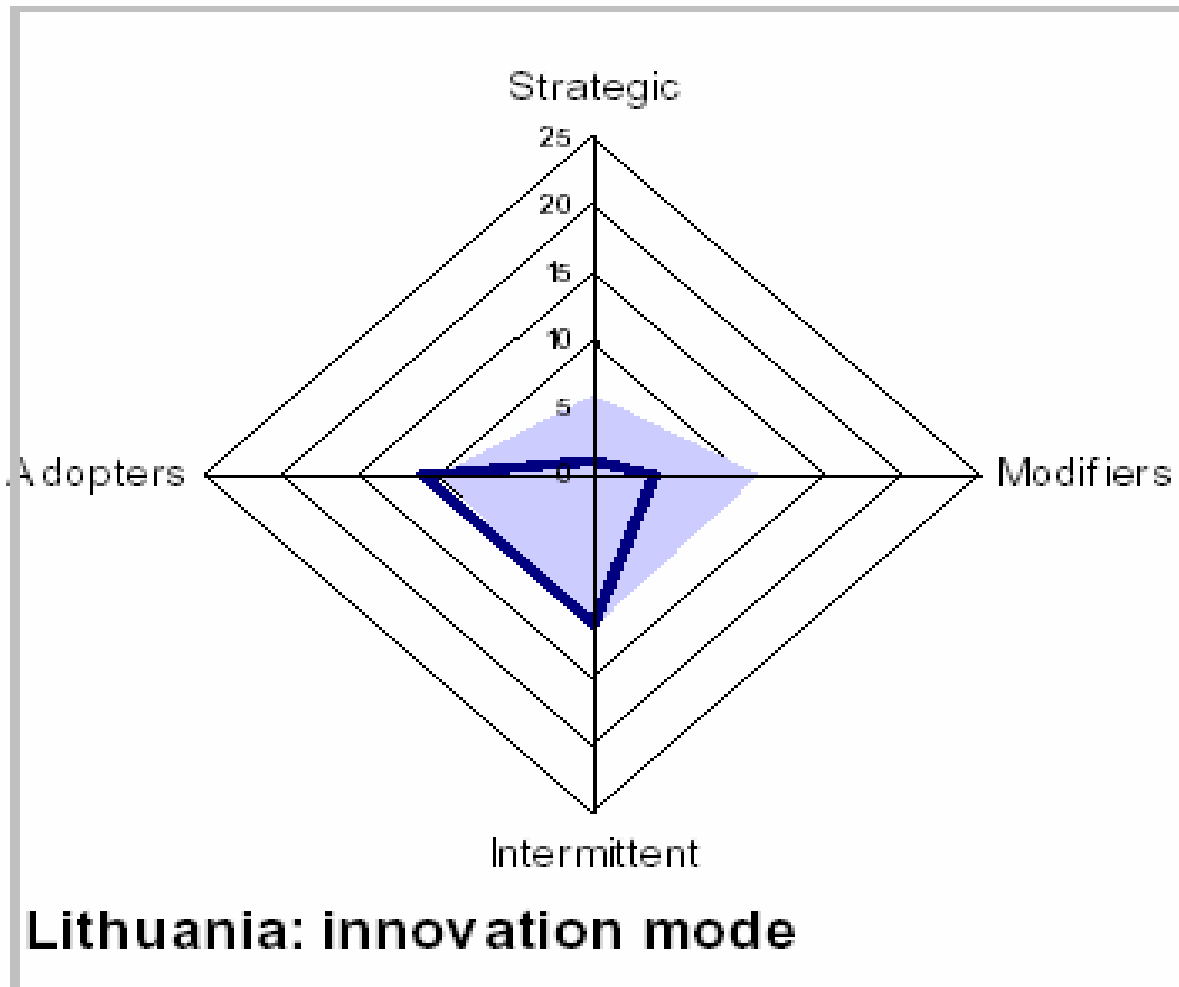
Innovation modes by firms

- *Strategic innovators*: For these firms, innovation is a core component of their competitive strategy. They perform R&D on a continuous basis to develop novel product or process innovations. They are the main source of innovations that diffuse to other firms.
- *Intermittent innovators*: These firms perform R&D and develop innovations in-house when necessary or favourable, but innovation is not a core strategic activity. For some, their R&D efforts focus on adapting new technology developed by other firms to their own needs.
- *Technology modifiers*: These firms modify their existing products or processes through non-R&D based activities. Many firms in this group are essentially process innovators that innovate through production engineering.
- *Technology adopters (21.0% of all innovative firms)*: These firms primarily innovate by adopting innovations developed by other firms or organisations.

Innovation mode



Innovation mode



Main challenges

- The main challenge for Lithuania is whether or not to strongly encourage innovation diffusion or to encourage both creative innovation and innovation diffusion. The educational performance of Lithuania leaves both options open, although a decision to support creative innovation would require an improvement in the supply of S&E graduates and a massive increase in business R&D. Neither of the trends for these two indicators are stable and positive, suggesting that there is no in-built momentum for improvements over time. A concerted policy effort to improve both would therefore be required in order to develop creative innovation capabilities.
- The Government introduced a long-term R&D strategy in 2003 that will partly replace core funding for R&D by the public sector with competitive bidding. This might improve the quality of research and provide spillovers into the private sector.
- The alternative is to stress innovation diffusion. Several indicators are positive, including close to average levels of ICT investment and total innovation expenditures, and above average performance on several education indicators. The cooperation by SMEs also supports the idea.

Key developments in policy governance

- ✓ Increasing political attention to Lithuanian R&D policy development and implementation in relation to broader concept of innovation policy framework– shift from S&T to Innovation
- ✓ Linear concept of R&D and innovation policy functioning in practice
- ✓ Institutional gap between R&D (Ministry of Education and Science) and innovation policies (Ministry of Economy)
- ✓ Continuing gap between R&D and industrial/innovation policy implementation (inflexible funding mechanisms, etc.)
- ✓ Continuing integration efforts towards European R&D and innovation agenda (participation in international R&D programmes)

Key Challenges for Innovation governance

- ✓ Overcome **fragmentation** of R&D and innovation policy
 - ✓ **Institutional**: across Lithuanian authorities – universities, R&D institutes
 - ✓ **Conceptual**: between Education and science and Economy ministries
- ✓ Consider “**policy mixes**” rather than isolated instruments – within and across authorities and build up an institutional capacity for such actions
- ✓ Close the gap between R&D and business communities
- ✓ Between generations in science community

Thematic orientations

General priorities:

- ✓ Quality of Human life
- ✓ Knowledge society
- ✓ Nanotechnologies
- ✓ Nuclear safety
- ✓ International competitiveness of Lithuanian Industry

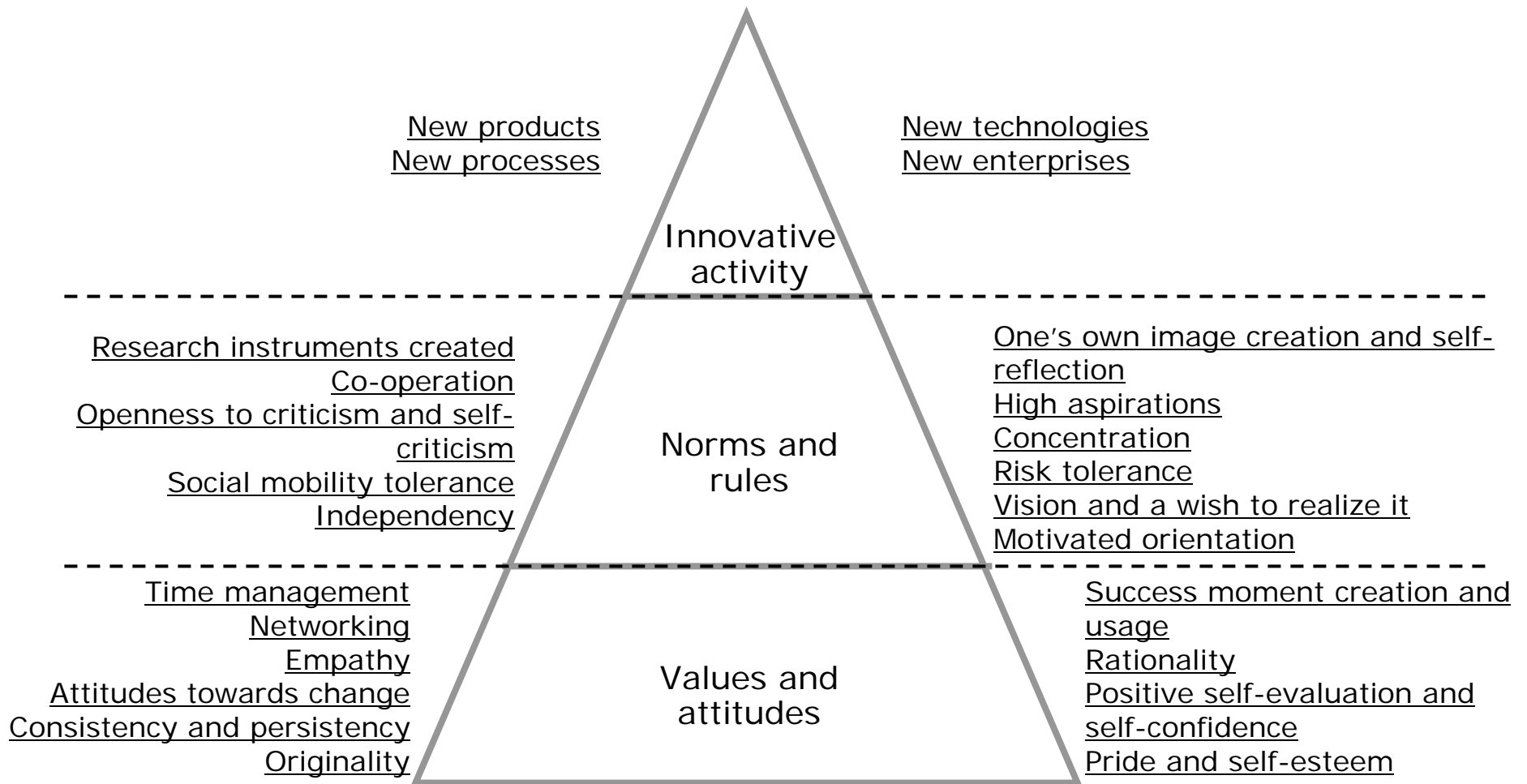
Specific R&D and technology development programmes

- ✓ High technology development programme – ICT, lasers, biotechnology, nanotechnology and mechatronics – set as a national priority areas
- ✓ **Regional dimension** - development of specialised science and technology parks, based on regional R&D and industrial competencies, Regional

Search for management decisions

- Cluster studies and analysis – are there a socio-economic preconditions for clusterisation?
- Innovation policy analysis and evaluation
- Industrial competitiveness
- R&D and higher education policy
- What's beyond the indicators? – innovation readiness, innovation culture, learning within the economy (learning cities, e-cities), social innovation, educational innovations
- Reconstructing social reality?

Relation between the levels of individuals'



Positive attitudes
towards learning and
scientific achievements

Positive attitudes towards
change and innovation

Range of interest

Activity motivated by
acknowledgement

Social mobility
tolerance

Co-operation

Strong expression of
vision

Adaption versus
innovativeness



Low risk tolerance

Creativity in
everyday life

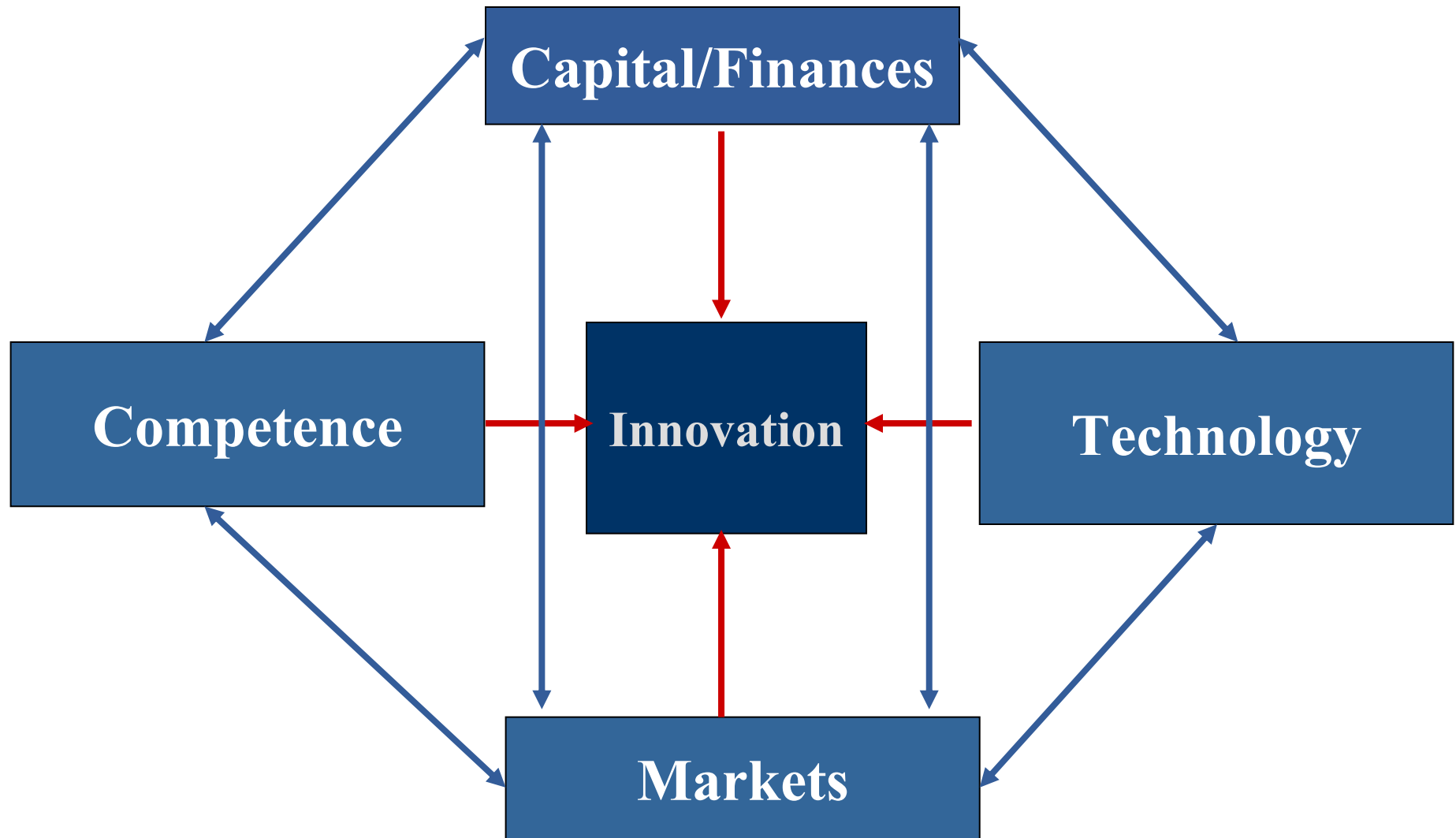
Originality

The vision is clear,
but the activity to
achieve it is
postponed

Individuality

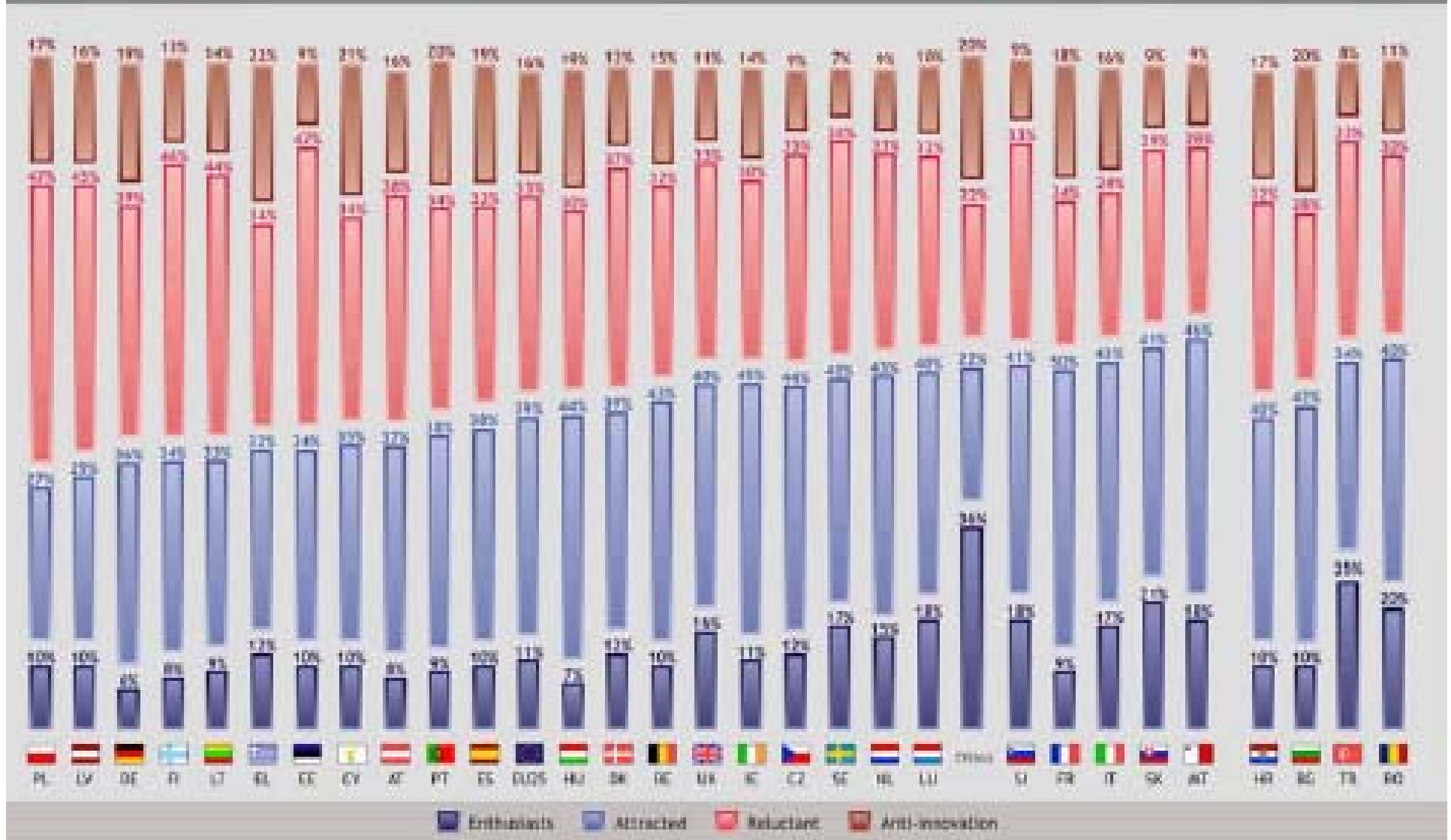
Thank you😊

Preconditions for successful innovation activities



Readiness for innovation

Typology on Innovation



- Peer group countries for performance: Spain and Slovenia.
- Most similar countries for the pattern of strengths and weaknesses (Euclidian distance in parentheses): Spain (0.300), Greece (0.306), Slovenia (0.330).

LT	Value	Rank	Out of no. EU countries
2005 EIS Summary Innovation Index (SII)	0.27	19	25
EIS Composite Index for Innovation drivers	0.46	10	25
EIS Composite Index for Knowledge creation	0.40	13	25
EIS Composite Index for Innovation & entrepreneurship	0.36	15	23
EIS Composite Index for Applications	0.15	22	25
EIS Composite Index for Intellectual Property	0.01	24	25
Index for domestic innovation demand	0.49	7	24
Index for innovation governance	0.39	16	22
Percent strategic innovators	1	19	19
Percent intermittent innovators	11	12	19
Percent technology modifiers	4	15	19
Percent technology adopters	11	6	19
Percent non-innovative firms	72	14	19

Sritys, liekančios už EIS ribų

- Inovacinė veikla, o ypač jos poreikiai ir specifika ne aukštųjų technologijų gamybos sektoriuose
 - Inovacinė veikla, o ypač jos poreikiai ir specifika ne aukštųjų technologijų paslaugose
 - Inovacinė veikla viešajame, ne pelno sektoriuje
 - Inovacinės veiklos sąsaja su šalies, regiono ūkio struktūros specifika
 - Socio-kultūriniai novacinės veiklos veiksniai
- Ką kitos ES valstybės daro šiuo klausimu?
 - Kuria originalius regioninę ir/ar sektorinę specifiką atitinkančius inovacinės veiklos indikatorius
 - Kuria regionines – nacionalinę ūkio specifiką atitinkančias inovacijų skatinimo programas (pvz., Turizmo MT ir inovacijų skatinimo programa Graikijoje)

Highlights

Memorandum between **Political Parties** of the **Republic of Lithuania** and **Institutions of Academic Community**

- ✓ 1% of GDP for R&D in 2010
- ✓ Attractive environment for business investment into R&D sector
- ✓ 50% of EU SF support for R&D and human resources development in the period 2007 – 2013. (Strike of students of higher education institutions)

National agreement of Seimas on Lithuanian development towards Knowledge economy (2002)

Lithuanian **white paper on R&D and Technologies** implementation programme (2003)

Innovation in Business Programme

Effective implementation mechanisms and measures
still have to be developed...

Artimiausio/vidutinio laikotarpio prioritetinės priemonės (iki 2007 metų)

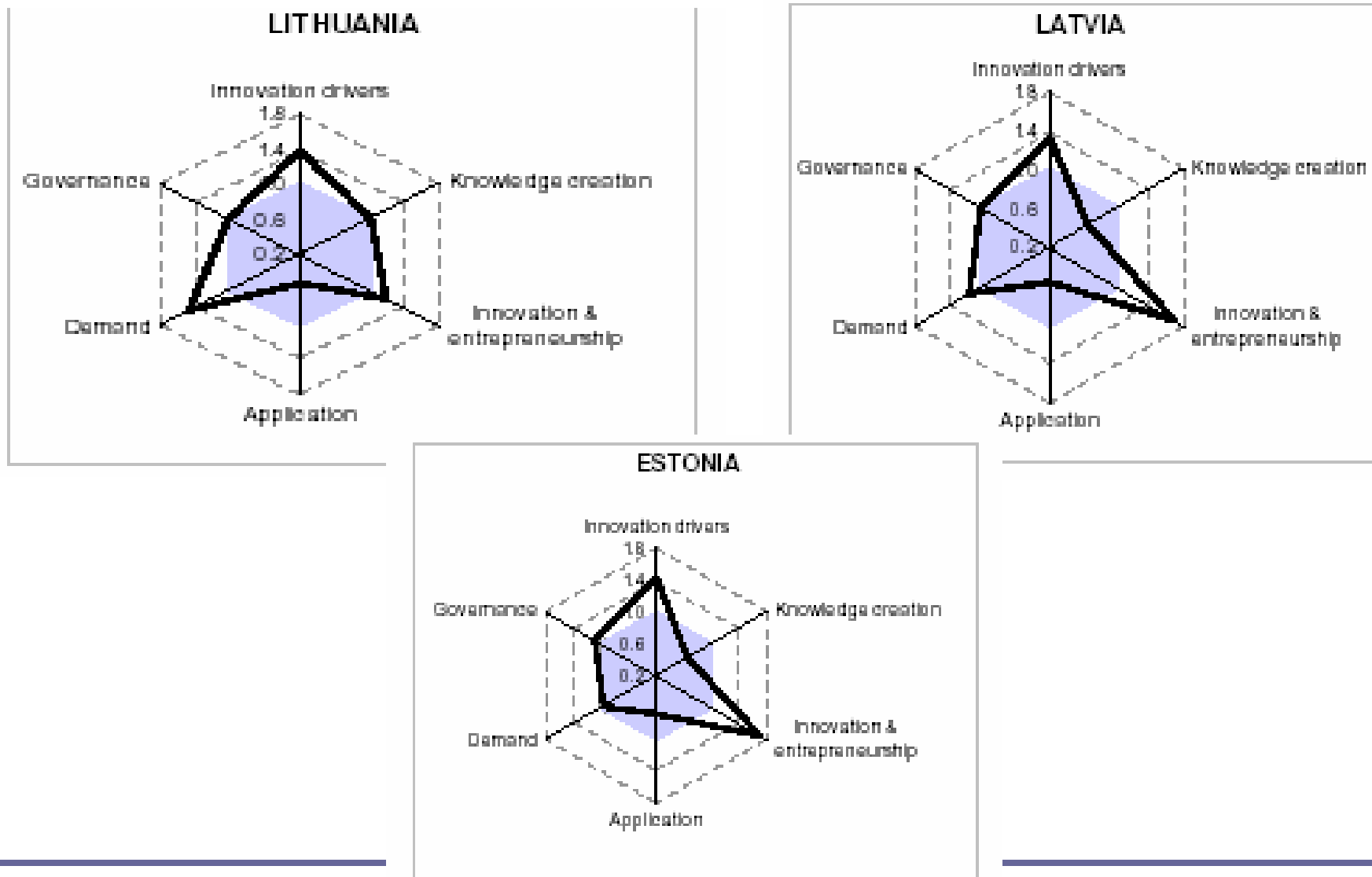
- Įvesti ir patvirtinti nacionalinių inovacinės veiklos vertinimo **kriterijų ir rodiklių sistemą**;
- Sukurti nacionalinio lygio inovacijų politikos įgyvendinimo **stebėsenos mechanizmus** (svarstyti centrinės inovacijų politikos įgyvendinimą koordinuojančios institucijos sukūrimo klausimas);
- Apibrėžti **tarpinstitucinius ryšius** tarp dviejų pagrindinių institucijų, dalyvaujančių įgyvendinant mokslo ir tyrimų politiką – Ūkio ministerijos ir Švietimo ir mokslo ministerijos (reikalui esant - formalizuoti);
- Teisiškai ir politiškai įtvirtinti **inovacijų finansavimo instrumentus** (atsižvelgiant į CIP ateityje numatomas galimybes pritraukti atitinkamas ES fondų lėšas);
- Atlikti sisteminių tyrimą, leisiantį atskleisti esminius **patentavimo aplinkos** trūkumus ir jos tobulinimo būdus;
- Suformuoti inovacijų ir patentavimo **konsultantų tinklą** (siekiant stiprinti Lietuvos įmonių gebėjimus ir pasirengimą dalyvauti tarptautiniuose ES inovaciniuose projektuose);
- Atlikti **tiesioginių užsienio investicijų** pritraukimo į mokslui ir tyrimams imlias sritis galimybių studiją



Pagrindinės susijusios studijos

- Innovation policy in 7 applicant countries: the challenges (Lithuania)
- European TrendChart on Innovation
- Lietuvos pramonės klasterių plėtros programinė studija
- Ekspertų grupės darbo "Įmonių klasteriai ir jų tinklai" galutinė ataskaita
- Klasterių kūrimo Lietuvoje prielaidų analizė ir rekomendacijų parengimas
...ir kitos susijusios studijos

Normalized strengths and weaknesses across six composite indices



Pagrindinės inovacijų politikos veiksmų kryptys/ prioritetai: OECD šalys ir Lietuva

SVV naujų technologijų srityje
skatinimas

Inovacijų politikos
racionalizavimas

Atsakas į mokslo ir tyrimų
globalizaciją

Inovacijos paslaugų srityje

Pramonės ir mokslo ryšių
stiprinimas

Valstybės sektoriaus ryšių
su pramone skatinimas

Ryšių tarp įmonių
skatinimas (naujose ir
tradicinėse šakose)

OECD
šalys

Inovacijų kultūros stiprinimas
Inovacinės veiklos gebėjimų
stiprinimas, mokymas darbo vietose

Inovacijų finansavimo (privataus ir
valstybinio) tobulinimas

Kova su specialistų *protų*
nutekėjimu

Mokslo ir tyrimų bazės aukštųjų
technologijų srityje sukūrimas

Ryšių tarp atskirų
nacionalinės inovacijų
sistemos dalių / veikėjų
sukūrimas

Lietuva
(pagal ETCI)

