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RUSSIAN NATIONAL SYSTEM OF INNOVATION IN THE ERA OF UNCERTAINTIES

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GLOBAL CHALLENGES AT THE BEGINNING OF 90s

- **MARKET GLOBALIZATION & RHYTHM OF EVOLUTION ACCELERATION**
- **TRANSITION TO TECHNOLOGICAL BASE OF KNOWLEDGE- BASE SOCIETY & INTERLACING OF BASIC TECHNOLOGIES OF 21ST CENTURY**
- **GOWING COMPLEXITY OF PROBLEMS**
- **CHANGING ROLE OF DIFFERENT ACTORS**
- **ENVIRONMENTAL CHALLENGES**



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GLOBAL CHALLENGES AT THE BEGINNING OF 90s

MARKET GLOBALIZATION & RHYTHM OF EVOLUTION ACCELARATION

- **CALL FOR THE DEVELOPMENT OF MORE ADOPTIVE NIS**
- **RETHINKING THE ROLE OF DIFFERENT INSTITUTIONS & COLLABORATION**
- **BRINGING RESEARCH MORE CLOSELY TO INDUSTRY**
- **STRENGTHENING THE INDUSTRIAL RESEARCH**
- **RETHINKING THE IDEA OF COMPETITIVENESS AND PERFORMANCE**
- **TRANSITION TO NEW INNOVATION CULTURE**



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GLOBAL CHALLENGES AT THE BEGINNING OF 90s

TRANSITION TO TECHNOLOGICAL BASE OF KNOWLEDGE- BASE SOCIETY & INTERLACING OF BASIC TECHNOLOGIES OF 21ST CENTURY

- **Rethinking R&D priorities and critical technologies**
- **Interdisciplinary research**
- **New role of basic knowledge & AoS**
- **Creation of new clusters**
- **New role of technology transfer institutions and a call for their transformation**
- **Encouragement of start up of spin- offs and technology- based firms**
- **Building human capacity**
- **Linkages between S-I-T-E policies to prevent mismatches between labor supply and demand**



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GLOBAL CHALLENGES AT THE BEGINNING OF 90s

GROWING COMPLEXITY OF PROBLEMS

- **Rethinking policy – areas & linkages between different policy areas and political institutions**
- **Involving different stakeholders in policy development and implementation**
- **Adopting the methodology of Foresight to new requirements**
- **Strengthening regional dimensions of innovation policy as well as vertical linkages and trans-regional networks**



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GLOBAL CHALLENGES AT THE BEGINNING OF 90s

ENVIRONMENTAL CHALLENGES

- **Environmentally friendly technologies and behavior**



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GLOBAL CHALLENGES AT THE BEGINNING OF 90s

Changing role of different actors

- **Dialogue and networks between actors**
- **Involvement of different actors in vision development and policy making process**



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INSTITUTIONAL GAP

- **Response:BI, ITC, SP, international centers, SRC, financial institutions**
- **Gaps:**
 - **Lack of measures to support start up, TBI**
 - **No measures to support:**
 - **spin- offs,**
 - **technology- based firms**
 - **specialized incubators**



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INSTITUTIONAL GAP

- **Fragmentation of NIS**
- **Lack of policy actions oriented on supporting collaboration and networks**
- **Huge gap between regions**
 - **Number of institutes**
 - **Capacity of institutes**
 - **Digital gap**



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INSTITUTIONAL GAP

- **Political institutions**
 - **Lack of collaboration between institutions**
 - **Status of different actors is not determined**



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Competitiveness gap and transition to technological base of knowledge- based society

- **Response:**
 - **Critical technologies**
 - **Foresight**
 - **Not in participatory manner**
 - **Capacity in different fields were not evaluated**
 - **Confirmed the agenda of 90s and even 80s**



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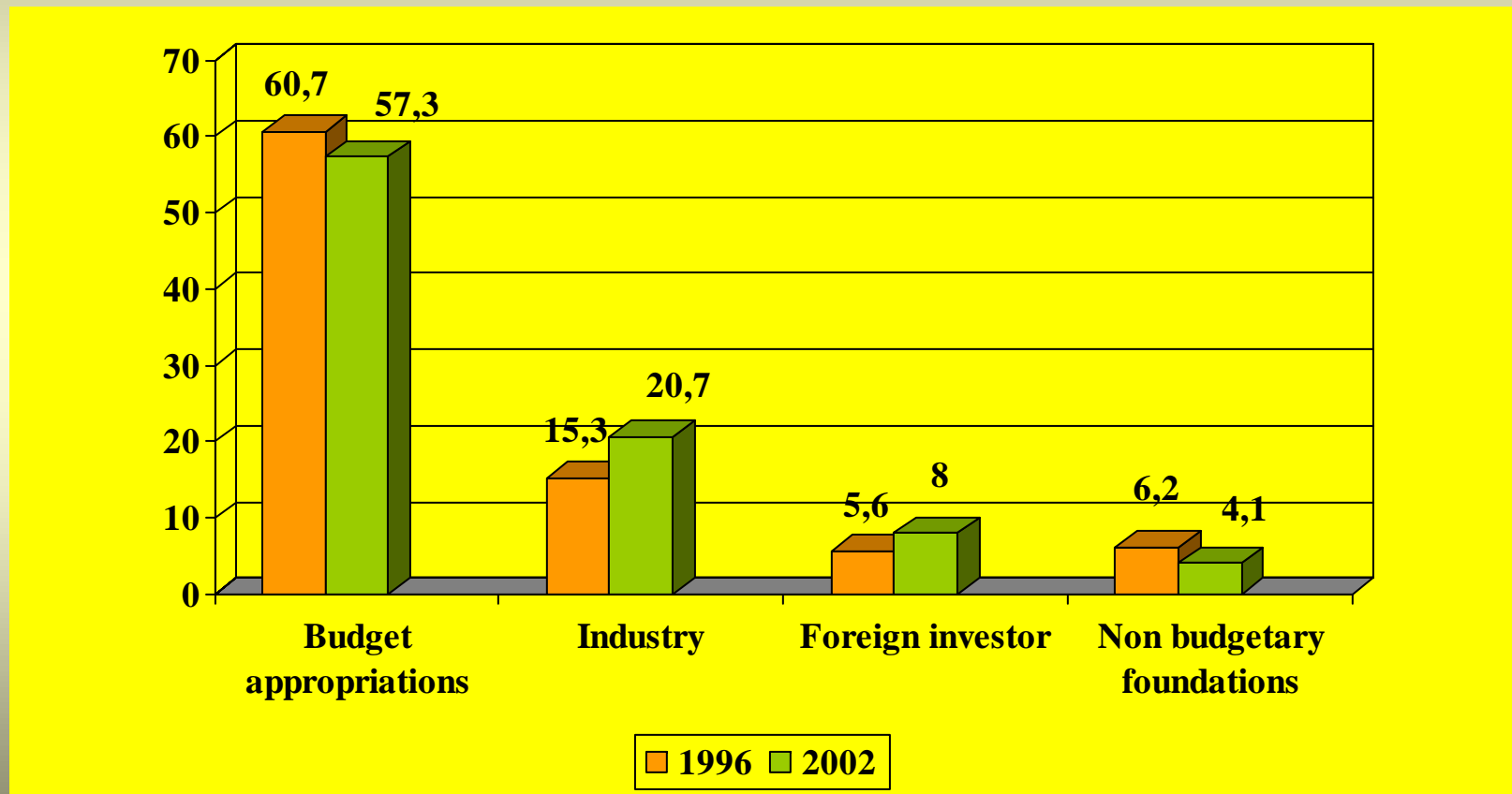
Competitiveness gap and transition to technological base of knowledge- based society

- **National Programs were not oriented on the competitiveness strengthening**
 - **220 commissions& councils under the government**
 - **Abolished 159**
 - **Competitiveness and business undertakings Counsel**



Competitiveness gap and transition to technological base of knowledge-based society

Bringing R&D closer to Industry





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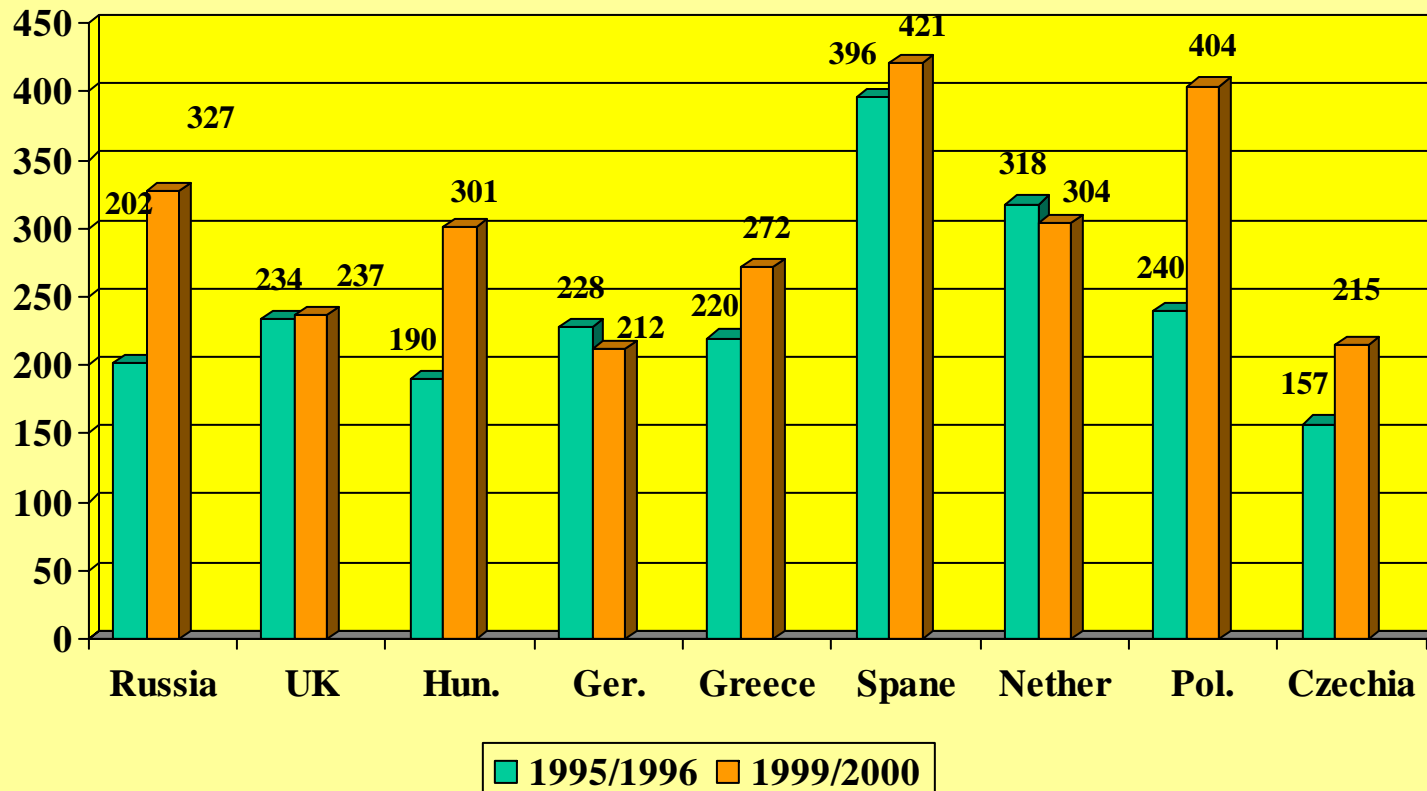
Digital Gap

- **National Programs**
 - **eRussia**
 - **Education**
 - **ECommerce**
- **Private sector**



Building human capacity

Number of students per 10 00 of population

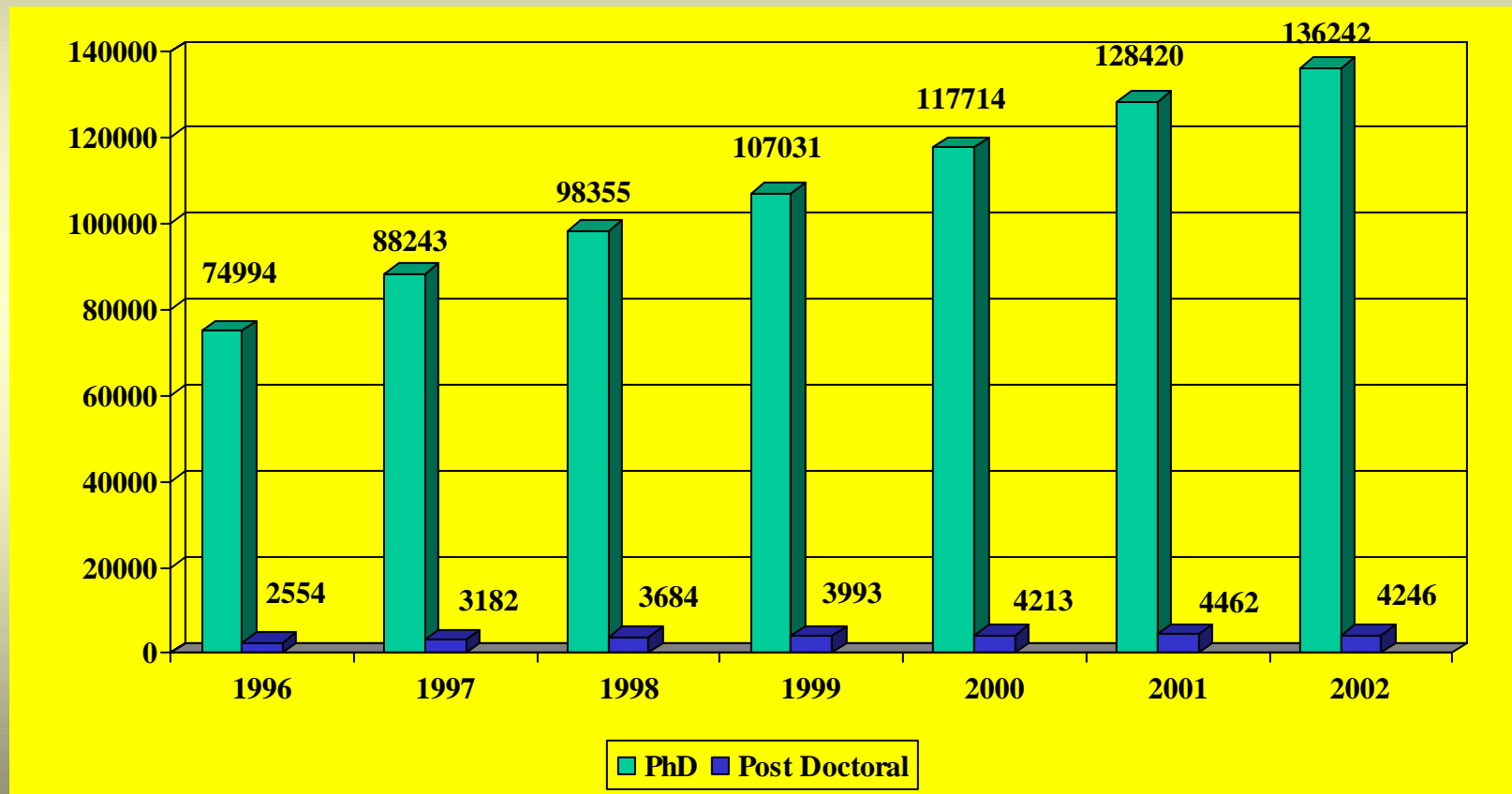




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Building human capacity

Number of PhD & post Doctoral

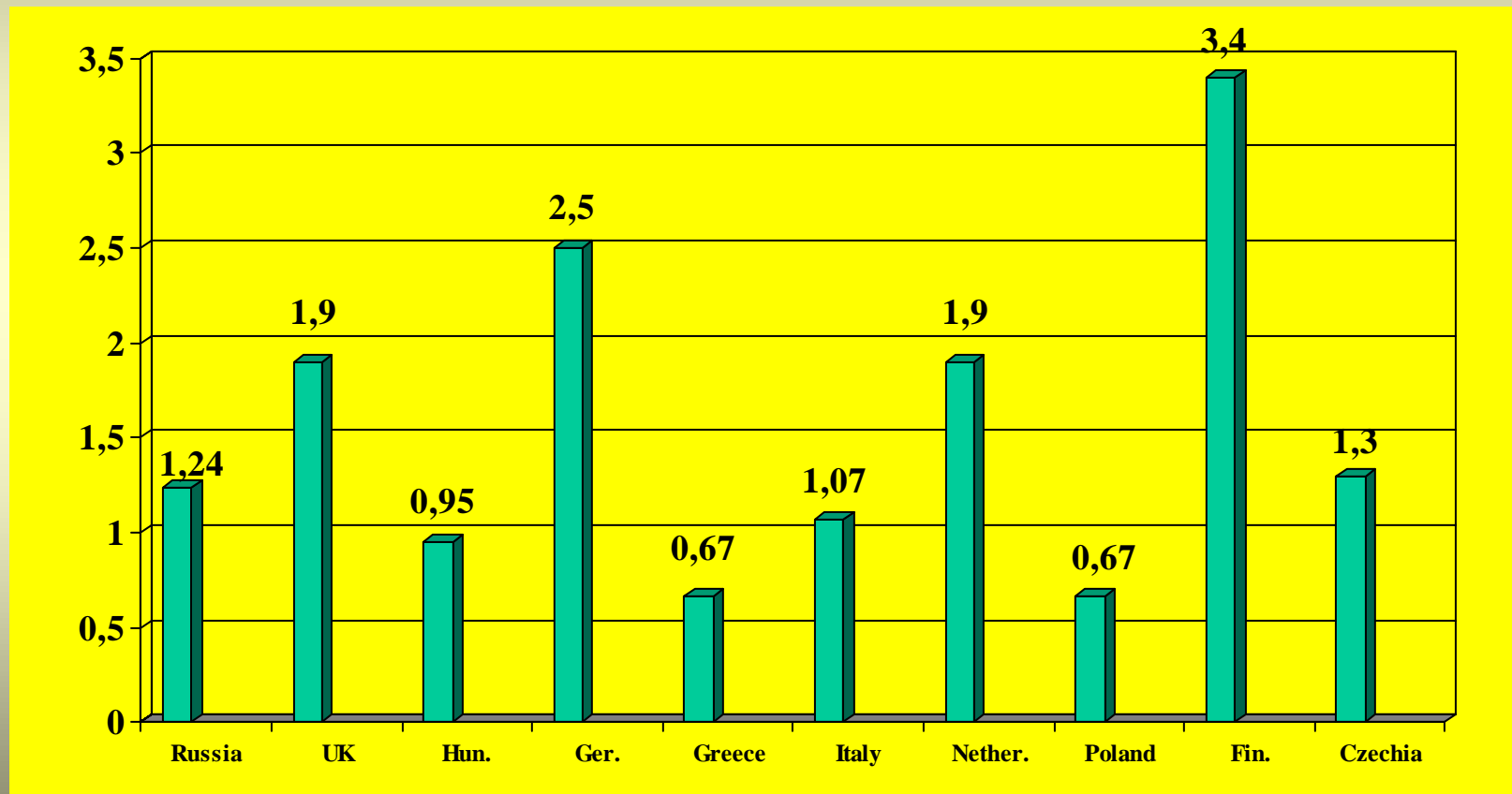




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KNOWLEDGE PRODUCTION

R&D expenditures as percentages of GDP

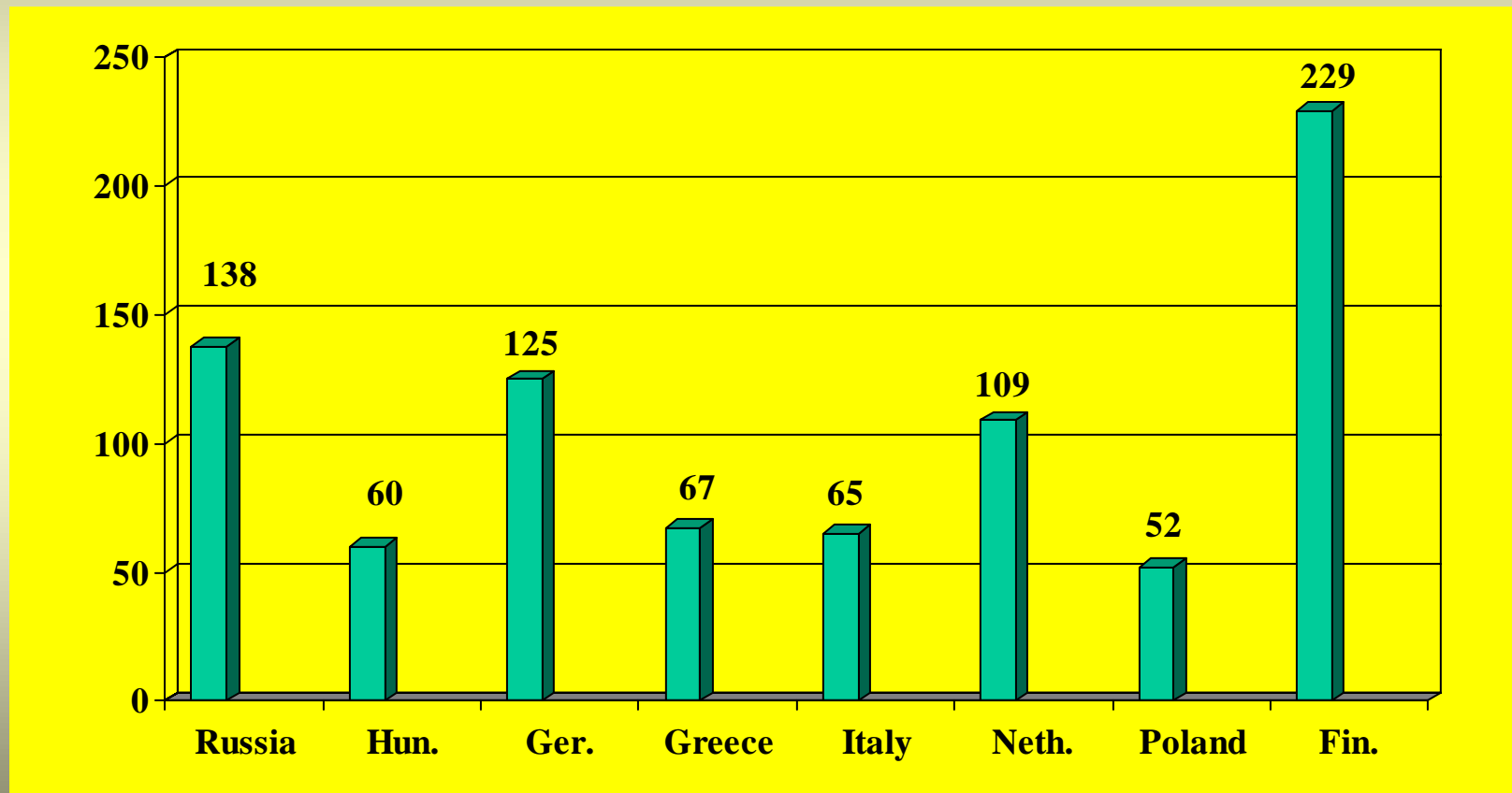




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KNOWLEDGE PRODUCTION

R&D personnel per 10 000 of population





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NEW CHALLENGES

- **Addressing security and sustainability issues**
- **Impact of natural and technological disastrous**
- **Emergency of new and rebirth of old diseases**
- **Biotech >>>>**



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NEW CHALLENGES INSTITUTIONS

& COLLABORATION

- **Interlacing with new policy areas: climate change impact, emergency situations, security**
- **Egovernment**
- **Managing uncertainties: information base and decision models in the are of rapid changes and high uncertainties**
- **New culture of policy development**
- **Shift to trust and enhancing the value of collaboration**
- **Shift from adoptive towards learning institutions**
- **Shift from trans- regional towards trans-national collaboration**



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NEW CHALLENGES

RESPONSE TO NEW STAGE OF MARKET GLOBALIZATION

- **Ecommerce: general regulatory framework for ecommerce in Europe**
- **Eco- standards**
- **European labour market & scholars market**
 - **Aging population & R&D personal**
 - **Demand for skills & skills gap**
 - **Framework for the regulation investment in education and skills in Europe**