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EUROPEAN PARLIAMENT

*Scientific Technology  
Options Assessment*

**STOA**

# **Computer networks for research and education:**

## **A European success story – New challenges for policy makers**



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# The present situation in new EU member states

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# New member states



European Commission  
Information Society  
and Media



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# Importance

- The vision of the European Research Area: Researchers throughout Europe, irrespective of location, should be able to contribute fully to high quality research.
- Advanced Research Networks play a key role in achieving this goal.
- New EU countries are aware of this.
- Looking at the percentage of GERD (Gross Expenditure and Research and Development) which is spent on Research and Education Networks shows that on average, it is larger in new EU countries than in the old ones.
- The output however is not always adequate.
- Where then is the problem ?



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# Problems (I)

Many new EU countries face problems, the reasons include:

- **They are poor**  
The technology used is the same therefore the cost is not lower. For poorer countries this means bigger burden.
- **They are small**  
The cost of international connectivity is not dependent on the number of inhabitants. In most cases the same technology is used and the cost therefore is the same. This means that the cost per researcher is higher than in larger countries.
- **The telecommunication system has not yet been liberalized.**  
Therefore the cost of the infrastructure used in the networks is higher than in those countries where there is a full competition.

# Problems (II)

- These countries are often located on the outer borders of Europe  
Such a geographical position usually results in an expensive network connection to the rest of Europe.
- Sometimes these countries are located on islands (e.g. Malta, Cyprus)  
The usage cost of telecommunication infrastructure in such cases is obviously even higher.



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# Solutions?

- Geography can unfortunately not be changed.
- Being small: it helps if the research network also connects all education institutions in a country and in this way achieve a “critical mass”.
- Faster liberalization of telecommunication: local political will is necessary to achieve this
- Solidarity inside the GÉANT2 project: All partners in the project (all European NRENs) have agreed to support those members
  - whose infrastructure is more expensive
  - whose country is less affluent
- This helps diminishing the digital divide but is sadly not enough



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# Solutions ?

- **Other actions are also needed:**
  - **Usage of structural funds: some countries have succeeded in being able to utilize these (others not, due to rules)**
  - **Are there other, existing instruments that could be used?**
  - **Could new methods and possibilities be created to address these issues?**



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# Conclusion

- Research and Educational Networking across Europe is essential for the realization of the vision of the European Research Area.
- For most of the new EU countries the cost of connection to the pan-European network is much higher
- Although new EU countries often spent more on research networking the digital divide still exists
- Some reasons are unavoidable (geography), others will improve over time (difference in GDP, liberalization of telecommunications).
- Could the EC do more?
  - Are the current rules for the usage of structural funds actually adequate?
  - Are there other instruments?

