I served as an advisor on US Internet and telecom technology developments for the head of the RACE (Research in Advanced Communications in Europe) program for about 5 years during the early 1990s. During this period the European Commission developed the initial Framework Programs.

I believe that the important role of academic research centers and the emergence of the Internet exerted a great influence on the Commission’s efforts to shape Europe’s telecom technology initiatives.

I believe that these influences led European policymakers to create a “converged” approach to policy. This linked computing innovations to telecom advances. It also resulted in far more sensitivity to the creation of new services than has been appreciated.
Original Goals of the European Commission’s RACE Program

Two overarching goals:
- 1. Improve European Competitiveness in Telecom
- 2. Build a Technology Base in Telecom

Key “Mashups”
- 1. National vs. European R&D Centers --
  - How to integrate National Telco Labs into Effort
  - Impossible to Create a single “Bell Labs”
- 2. Overcome Rigidity in Research Focus
  - Europe had been slow to adopt IP; Lacked Netscape,
    but did create WWW.

How Was the Technology Issue Resolved?

Three pronged approach:
- 1. National inputs from R&D Centers and Universities
- 2. Leaving Room for Inputs from Computing and IT Experts as Well as Telco Experts -- “the Netscape Effect”
- 3. Provide Structures for Industry to Comment on Directions, but Not Decide on Directions
Changing Terminology Shapes Thinking

- **National R&D Efforts -- Move to “eScience”**
  - eScience includes IT and Telecom
  - National eScience Efforts Linked to infrastructure and computing advances

- **Building National Computing Networks moves to “eInfrastructure”**
  - National efforts build high speed research nets, but European efforts focus on adding intelligence and services to infrastructure

Suggestions for NRC Next Steps

- **Focusing on End-to-End Technologies in Telecom may not be as Crucial as Providing Ways to Integrate New Software/Computing Innovations into the Network**
- **Convergence between Computing and Networking will Drastically Change Networks**
- **Service creation will Drive Network Change and Development - How to Link End-Uses to Technology Changes is a key issue!**
NESSI: European Strategy to Create Technology Platforms

NESSI is the Networked European Software and Services Initiative and Services Initiative.

NESSI will create:
- a services platform that includes advanced functionality
- Infrastructure that can be assembled dynamically and
- Services that are immediately useable