

Technology Economics and Policy Research



RTI International provides independent, interdisciplinary assessments of the economic contributions of innovation programs and new technologies to society's economic, public health, and environmental welfare. Our work supports clients by providing robust quantitative accountability measures, assessing policy alternatives, and articulating the value of technology programs at the interface of complex issues.



Technological innovation yields a variety of benefits to firms and to society, including

- Gains in research or production efficiency
- Increased competition among firms
- Improvements in individual productivity
- Enhancements in product and service quality
- Employment gains and national competitiveness.

As an example, advances in our health care technology infrastructure result in invaluable medical, scientific, and public health benefits.

But technological change imposes costs as well. Organizations face both development and adoption costs, and the decision of one organization may affect many other organizations. Government often plays a role in accelerating technology adoption through such policies as information dissemination, cost sharing, or support of standardization efforts.

Drawing on the technical expertise of RTI colleagues across the physical, chemical, life, computing, and public health sciences, our economists and policy researchers independently assess the benefits, costs, and social implications of new technologies and innovation policies to inform stakeholders and provide insights into policy alternatives. Through the diversity of experience and expertise of our team members, our research provides targeted, scientifically based economic analyses to policy makers in the technology field.

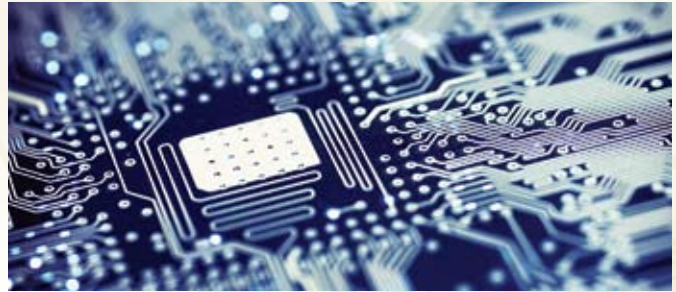
Examples of Technology Economics and Policy Research at RTI

We recently conducted a prospective analysis of the likely future technical needs and associated barriers in the biotechnology industry and a retrospective study of the past impacts of investments made in DNA analysis tools. We have conducted multiple economic impact studies to assess the costs and benefits of improvements in measurement and metrology equipment within the semiconductor industry.

RTI researchers have also assessed the costs of software bugs to the U.S. economy, the costs and benefits of adopting new Internet standards (e.g., IPv6), and the decision processes companies use to determine their level of investment in cyber security.

We developed a cost model to assess the cost savings (and quality improvements) associated with emerging technologies and methods being adopted for use in health care settings. We have developed and administered large-scale surveys and in-depth interviews to assess the economic impact of inadequate interoperability within and between industries, and we have made policy suggestions for how government can help reduce estimated inefficiencies.





Methods

The diverse backgrounds of our technology economics team help us excel at developing counterfactual scenarios involving complex technologies and a wide variety of stakeholders. To propose policy options, we provide rigorous economic impact assessments of technologies and programs and conduct decision analyses that investigate technical and market barriers. Our methods and research designs include

- Prospective and retrospective benefit-cost analysis
- Econometric and input-output modeling portfolio analysis
- Public-private partnership analysis
- Small- and large-scale surveys of technology adoption
- In-depth interviews and case studies
- Regional economic impact modeling.

Highlights of Our Research Efforts

Past and ongoing studies include

- Evaluating the impact of new DNA diagnostics technologies funded through public-private partnerships
- Modeling the impact of new health technologies licensed by the National Institutes of Health
- Estimating the impact of introducing new border security technologies aimed at improving security and the transactions costs of trade
- Evaluating the infrastructure needs of the biotechnology industry
- Evaluating and conceptualizing the cyber security decision-making processes of private-sector firms
- Evaluating the need for improved software and processes for exchanging electronic data in the automotive, aerospace, and capital facilities industries

- Estimating the impact of measurement standards and technologies in the semiconductor industry
- Benchmarking the effectiveness of state government weights and measurements programs
- Estimating the impact (cost) of software bugs
- Evaluating the role of service-sector research and development (*Innovation in the U.S. Service Sector* was published by Routledge in 2006).



Selected Clients

National Institute of Standards and Technology

U.S. Department of Homeland Security

National Institutes of Health

Centers for Disease Control and Prevention

National Science Foundation

National Telecommunications and Information
Administration

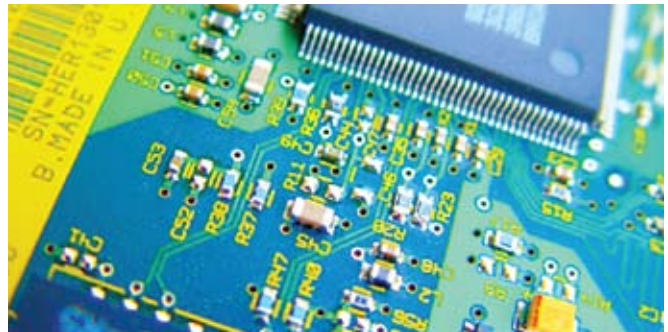
Technology Innovation Program

U.S. Environmental Protection Agency

U.S. Department of Energy

State of Oregon

State of North Carolina



More Information

Michael P. Gallaher, PhD, Director
Technology Economics and Policy

Phone: +1.919.541.5935

E-mail: mpg@rti.org

RTI International
3040 Cornwallis Road
Research Triangle Park, NC 27709-2194 USA

RTI 6248 0509



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