

Much of the identified research is focused on specific government program areas. The following programmatic areas have been identified based on the preliminary review:

- Economic Development and Commerce
- Public Safety
- Health and Human Services
- Environment and Natural Resources

Economic Development

The information technology industry represents an increasingly larger proportion of the world economy. Government policies that affect the use and development of information technology products and services can have substantial impacts on national and sub-national economies. Information is a critical resource in assessing economic conditions and in policy and decision making. Additionally government organizations collect, process, and disseminate critical information and forecasts that drive the decisions of economic agents.

Accurate, timely, and comprehensive information is required to support economic development decision and policy making at all levels of government. Additionally, appropriate information must be identified and used to evaluate the effectiveness of policies and decisions. Many argue that development decisions have traditionally been made without sufficient consideration of environmental and social effects. The concept and principles of sustainable development have been promoted to more effectively account for environmental and social factors in economic development decision making Brundtland (1987). Kelly (forthcoming) indicates that identifying policies and programs to support sustainable development requires the integration of information about economic, environmental, and social factors. She suggests a systems approach to identifying decisive information for sustainable development policy and decision making and argues that such an approach supports the identification of causal linkages and feedback among the types of factors, an increased understanding of the effects of policy scenarios, and an increased capability in the necessary communication across disciplines.

Public safety

Sparrow (1990) discusses the 911 phone system as well as other innovative uses of technology to support policing activities in departments in Los Angeles, Virginia, and London.

Health and Human Services

Smith and Lipsky (1992) discuss the notion of privatization in health and human services. They note that an increasingly common form of privatization involves contracting with nonprofit organizations and that such practices do not follow market principles. In particular, these arrangements are fraught with politics and inadequate information and are built upon long-term relationships between government and contract agencies. They indicate that contracting hides, to some degree, the growth of government in part due to the fact that the press and government critics are not accustomed to making contract employees an issue. Some additional problems associated with the privatization of health and human services include: substantial consumer and contract administrator transaction costs, high costs associated with monitoring and evaluating service providers, and inequitable distribution of services. Sparrow (1996) reviews methods of Medicare and Medicaid fraud in the US and argues that electronic claims processing will result in an increase in fraudulent claims.

Environment and Natural Resources

Bartels et al. (1993) describe the Market Clearing Auction (MCA), a computer-assisted smart auction designed to replicate the outcome of an efficient market in sulfur dioxide (SO₂) emissions allowances created by the Clean Air Act Amendment of 1990. The system is a centralized marketplace for trading SO₂ emission allowances and accepts bids and offers for any combination of allowances and for streams of allowances covering more than one year.
