

### Summary

International digital government research is conducted by individual scholars as well as by large and small organizations. The work is supported in a variety of ways from major, multi-year grants from government organizations, to self-funded projects sponsored by businesses as well as public and nonprofit organizations, to independent work by single investigators. Several patterns are apparent, mostly related to the missions or interests of the research sponsors.

### Overview of method and framework

We conducted a Web search for organizations and entities that either sponsor research, conduct research, or do both. We examined only the information that the organizations themselves provide on their Web sites. Government agencies like the US National Science Foundation and the European Commission Directorates General, which sponsor research programs provide the most information about program goals, application and selection processes, grant awards, and research results. Intergovernmental entities like the United Nations, World Bank, and the Organization for Economic Cooperation and Development (OECD) post review information about their programs and publications, however less is provided about the amount of funding available to researchers or the process by which such funding might be obtained. Universities and non-profit research organizations provide access to their publications but little information about the funding structures used. With few exceptions, private sector companies provide little detail about how they select, fund, and conduct research.

### Who is doing international DG research?

There appear to be three main categories of researchers – large intergovernmental organizations and multinational corporations (such as the UN, OECD, and major consulting firms), academic institutions and nonprofit research centers (some involving multi-organizational partnerships), and individual scholars. The large-scale projects are usually geared toward generating broad coverage of universal topics or practical knowledge to be used as a guide to furthering economic development and efficient incorporation of IT into public management. The smallest scale projects are usually conducted as part of traditional academic research activities without special funding, although there are exceptions depending on the scale of the project.

Intergovernmental organizations like OECD and the United Nations focus strongly on topics related to furthering the modernization of public administration around the world, but primarily in developing and emerging economies. Their interests lie in examining the role of electronic and mobile governments as a tool for meeting public sector reform agendas such as good governance, democracy, and inclusion. OECD produces a wide range of publications including best practices, framework development, and comparative studies.

Regional intergovernmental organizations conduct comparative and best practices studies, and, because most of them are organized with the purpose of enhancing the economic development of their regions, the studies are usually aimed at this aspect of digital government. The European Commission conducts studies of member countries or for the benefit of member countries sometimes drawing lessons or comparisons from additional countries of similar cultural or economic status.

Academic research represents the broadest range of topics, methods, and approaches to international digital government issues. No particular theme dominates, but rather, the variety of topics reflects the multidisciplinary nature of this study domain. We found several academic research centers in the US, EU, and Asia with units focused specifically on digital government research, including international projects or papers.

Independent think tanks, such as the Commonwealth Center, and several large multi-national companies, such as Accenture and SAP, conduct their own programs of international DG research. This research is usually done in-house. Accenture, for example, has conducted an annual benchmarking study of over 180 countries concentrating on the development of digital government capabilities worldwide. In addition, EC-funded research projects often include research partners from industry as members of large multi-disciplinary project teams.

### Who is sponsoring international DG research?

A mixture of government agencies, international governmental organizations, private industry, think tanks, and non-governmental organizations have sponsored significant programs of international digital government research. (As noted above, many of these same organizations also conduct some of the work directly.)

## How is international research accomplished?

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Global intergovernmental organizations usually sponsor global studies encompassing most or all countries. Occasionally, they concentrate on a specific group of countries, usually defined by their common level of economic development. Most of these studies concentrate on developing countries with the aim to promote economic and social development. These organizations sponsor research that appears to concentrate on two main issues – economic development and improving the efficiency and effectiveness of governance through the use of IT.

This trend is especially dominant with organizations that have economic development as one of their overarching organizational goals, such as the World Bank. The United Nations, although interested in IT in connection with its potential to spur economic development, also collects data on general IT indicators, such as the level of access, digital divide issues, and others. Research sponsored by these global intergovernmental organizations often takes the form of benchmarks, although they sometimes include best practices or case studies that are geared toward their missions.

Given their global membership, they seldom tackle politically-charged issues, such as democratization. Most studies sponsored by global intergovernmental organizations are done in-house by their own research staff, or in connection with another large organization.

Among regional intergovernmental research sponsors, the European Commission deserves special mention. Through its Directorates General for Research and Information Society and Media, it sponsors a large number of international e-government projects, concentrating mostly on EU member states, sometimes in comparison with other developed countries or other countries of similar IT development level. The sponsored studies range from internal benchmarks to transnational studies, to IT development projects, to best practices, and others.

Although diverse in topic and approach, these projects all address in some way the overarching themes of European unification, including improving government functions through the use of IT, establishing EU-wide standards, supporting internal barrier free commerce, establishing pan-European services, and generally supporting a knowledge society. Projects are generally awarded to teams of multiple partners from various countries and different disciplines, often combining private companies with academic institutions, and often with the explicit goal of product development and deployment. The awards are usually large (several million Euros), but less than two years in length. Most include goals for deployment of new products or services.

Government research organizations fund mainly academic scientific research, although there are some significant variations among countries. For example, the US NSF funds university research to advance all aspects of science and engineering, except medical science. NSF grants are awarded through a peer review process and grants carry no requirement for product development or practical deployment (although these are considered desirable extended outcomes of the science). In comparison, the EC funds not only university-based researchers, but often funds work by private companies and public-private teams. Other national research agencies, such as the UK agency for Economic and Social Research, seem to have a focus similar to the US NSF, funding mainly university-based research.

Global companies, such as SAP, also occasionally sponsor research programs or projects. IBM's Endowment for the Business of Government, for example, makes modest grants to academic researchers to conduct smaller studies and publishes white papers to help inform government practitioners on a variety of topics, some of which have international themes.

## Funding Patterns

It is virtually impossible to generalize about the funding of DG research, partly because many organizations simply do not publish this information. The organizations that make this information publicly available, namely the EC and NSF, have wide variations among their projects, ranging from millions to thousands of dollars and spanning several months in duration to four years and more. The type of study, the number of involved entities, and the number of countries studied generally determine the amount, as well as the duration of project funding. Thus, we found best practice and case studies being fairly small in the amount of funding and duration, while large transnational projects that aim at developing a certain product or framework, are funded for longer periods and with larger amounts of money.