

Global Funding of E-Collaboration Research

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INTRODUCTION

The term *e-collaboration* refers to collaboration among individuals involved in the execution of common tasks using electronic technologies (Kock, 2005, 2007). Therefore, e-collaboration can be seen as a broad term that refers to a range of technology-supported activities, such as those using computer-mediated communication technologies, telephone and telephone-like devices, and group support systems (Kock, 2005a, 2005b). Those technologies are generally referred to as e-collaboration technologies.

E-collaboration technologies that build on the infrastructure provided by the Internet have undoubtedly revolutionized business (Kock, 2005; Kock & Nosek, 2005; Sproull & Kiesler, 1991). They support a vast number of business transactions, whether they are business-to-business or business-to-consumer transactions (Gefen & Straub, 2003). E-collaboration technologies also support the creation of communities of consumers (Van Alstyne & Brynjolfsson, 2005), a trend that is becoming increasingly common among certain interest groups; for example, personal health product buyers, music aficionados, avid book readers.

The current trend toward increased global trade owes much of its existence to e-collaboration technologies (Standing & Benson, 2000). Many of the information and knowledge exchanges that precede the flow of goods and services within a country take place in large part—and in some cases in their entirety—through e-collaboration technologies. This is also true in connection with the flow of goods and services across national boundaries. Large U.S. automakers, for example, jointly design engine parts with offshore contractors using sophisticated e-collaboration suites. Those parts are then manufactured by the contractors, shipped to the automakers, and incorporated into car engines.

The rising price of oil has added another advantage to the use of e-collaboration technologies in business. As oil prices go up, so does the cost of face-to-face interaction between individuals located in different cities, states, or countries. The farther those individu-

als are, geographically speaking, the more expensive it is to have them interact face-to-face. Since almost no trade can effectively take place without the exchange of information and knowledge, the potential return on investment in e-collaboration technologies is likely to increase as time goes by.

Of course, the above scenario may not become a reality if oil prices were to go down, or cheap oil alternatives hit the market, in the next few years. Even if that were the case, there would also be other related drivers toward an increasing use of e-collaboration technologies as alternatives to commuting and travel for face-to-face interaction. One such driver is the growing body of evidence that burning fossil fuels leads to a rise in global temperatures, with potentially disastrous consequences looming on the horizon.

Alternatives to fossil fuels have their problems as well. One of them is that they regularly end up consuming a great deal of the very same fossil fuels that they are meant to replace. Electricity, for example, which is used to power hybrid cars, is often produced by burning coal or natural gas. Ethanol may be an exception, but recent studies suggest that its production on a scale large enough to replace fossil fuels may have a dramatic negative impact on the availability of grains used for human and animal food consumption. It seems that instead of trying to reduce fossil fuel emissions related to a higher demand for transportation, the use of e-collaboration technologies should be promoted as a replacement for at least some of the face-to-face interaction among geographically distributed workers.

DIVERSE NATIONAL GOVERNMENT FUNDING AGENDAS

Technologies with great e-collaboration potential usually attract government interest and soon become the target of organized government research funding. This is particularly true in countries like the United States and New Zealand, and country groups like the European Union (EU). A significant amount of government fund-

ing is channeled to research on e-collaboration every year. This is often done indirectly through the creation of funded research programs in much broader areas such as information and communication technologies.

Because different countries and country groups vary in their industry composition and natural culture, it is no surprise that they end up having markedly different agendas. For example, a number of companies that develop and commercialize e-collaboration software are primarily based in the United States—much more than in Europe. Thus, it would be natural to see a stronger emphasis on e-collaboration research using open source software in Europe than in the United States—which seems to be what is currently happening.

A good example of clearly divergent agendas in government research funding in the area of e-collaboration is the comparison between the EU and the U.S. models. In the EU, emphasis is placed on applied results, such as interconnection of rural businesses, in terms of government funding of e-collaboration research. In contrast, the U.S. tends to favor projects that will lead to original findings, which are expected to be published in selective academic publication outlets such as conferences and journals.

FUNDING IN THE EU AND THE U.S.

Table 1 provides an example of divergent approaches for funding funding in the different countries and country groups. It summarizes key characteristics of the funding model adopted by the EU, and contrasts that with the funding model employed by the main equivalent funding agency in the United States, namely the National Science Foundation. The term *principal investigator* is used to refer to the researcher who is the main coordinator of a research project.

As it can be seen from Table 1, there are key differences in the funding models employed by the EU and the United States. It is beyond the scope of this article to provide a detailed discussion of the merits of each funding model, or a detailed analysis of the likely consequences of each model in terms of research impacts on ICT development in the EU and the United States. While such discussion would undoubtedly add value to the article, the complexities associated with such a broad comparison would probably be better addressed through a book-length publication. Also, much more consultation is needed with researchers in the EU and

United States to produce such a detailed discussion. Hopefully this article will provide the motivation for this and other related initiatives.

Interestingly, one could argue that the EU model fosters research that is better aligned with the “action research” tradition (see, e.g., Kock, 2003, 2006), in which inquiry is seen as aimed at having a positive impact on the participating organizations and society at the same time as the investigation is being conducted. The U.S. model arguably fosters research that is better aligned with the “experimental research” model, whereby inquiry is guided by the goal of testing theory and related hypotheses either in laboratories or the field.

It is important to note that comparing the European Commission with the National Science Foundation presents several challenges, which means that the discussion presented in the article should be examined with some caution. One of the problems is that there are other research funding bodies in the EU other than the European Commission. The situation is the same in the United States, with several other research funding organization other than the National Science Foundation; for example, DARPA, Office of Naval Research, Army Research Institute, Air Force Research Laboratory. Nevertheless, it seems that the National Science Foundation, due to its breadth of research coverage, is the organization the fits best the notion of a U.S. counterpart of the European Commission in the EU.

It is also important to note that comparing the EU with the United States leads to some unavoidable limitations in the conclusions drawn from that comparison. While the EU and the United States present some macro-level similarities, such as economic size and overall level of development, they also are different in many aspects. While the EU is a multination body with diverse constituents, the United States is one single country. (Although some would argue that there is a lot of diversity among the States that make up the United States—e.g., a visit to the southern part of Texas may conceivably look like an overseas trip to a New York State resident.) Also, many different languages are spoken in the EU, whereas in the U.S. English is spoken by the vast majority of the population. (Spanish is also spoken but is far behind English, and is often spoken among bilinguals.)

A more detailed comparison of the EU and U.S. models for government funding of e-collaboration research is provided in an article by Kock and Antunes (2007).

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