22 Prospects for Internet Policy Research

Brian Kahin

This chapter will discuss the economics perspective of policy research. There is much action in this area and we are seeing major changes in the way that business is conducted. We are beginning to see a lot of academic work, much of it from the business school perspective, on how firms are adapting to this new environment, what new strategies they are developing, and so on. First, I will address what this policy research is, then the problems facing it, where we are in policy research, and, finally, how it goes forward in an environment that is as turbulent as is the one we have today. I will also briefly explore economic changes, economic issues, and scale economies.

What Is Policy Research?

In this context, policy research seeks to understand how the changes in the environment might affect our laws, regulations, or other policies on a national or international level. It is very hard to make decisions unless you have good information (although this is done all the time).

What Are the Problems Facing Economic Policy Research?

The first problem is the rapid rate of change. Things are moving so fast that it is hard to get a handle on the circumstances that are informing policy decisions. The second problem is not having enough

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Brian Kahin is a fellow at the Internet Policy Institute, and a visiting professor at the University of Maryland. *This article is based on remarks delivered at the 25th Anniversary AAAS Colloquium on Science and Technology Policy, held April 11–13, 2000, in Washington, DC.*

data. We do not have empirical information about the present, let alone the future. Compare this to the data that we had in the past when we made policy, especially regulatory, decisions in telecommunications. The Federal Communications Commission routinely collects masses of data on how the telecommunications and broadcasting industries function. We do not have anything like that for electronic commerce and for the kinds of policy issues such as privacy and intellectual property that are increasingly important.

Another challenge lies at the borders. This is a methodological problem, a disciplinary problem, and an academic problem. People are promoted and given tenure on the basis of advanced work in a specialty. Interdisciplinary work tends to get short shrift, especially work that is as interdisciplinary as much policy research is. So we do not have a strong professional community, or even support within academia, for much of the research that needs to be done.

At another level this is a statistics problem. With the rapid changes in the electronic commerce environment, we have a continuing problem of how to classify emerging business models and emerging industry segments. We are seeing a profusion of new models of transactions and new kinds of relationships. We have problems categorizing both. Many variations on these strategic relationships are also hard to classify and quantify.

We also have the problem of policy sprawl. In the area of energy and the environment, we have a relatively stable, well-established set of coherent questions and issues. That is not the case here. The issues are continually unfolding. For example, when discussing privacy, we see all sorts of angles and we have no idea what we are talking about. This is especially true of intellectual property. Does that mean patents, copyrights, trademarks, trade secrets, or domain names? Each one of them operates very differently. Part of the problem we have with the patent system is the way lawyers look at the system as "one size fits all." So we have no accounting for industry differences, even though the empirical research tells us that different industries look at patents very differently.

Once we get beyond these problems, we have the problems of policy development that face policy research. That is, how do we make policy? If you are doing policy research, you should want it to be relevant, especially if you are not going to get academic recognition for it.

Path dependence is a chronic problem for policymakers. Once you do something, it is very hard to undo it. This can lead you in all sorts of directions that you would not head in if you had the big picture. Inertia is similar to path dependence, but it operates in several different ways. Some existing stakeholders do not want to see change because they build business models on the way things were. This means that the most established companies get the biggest say. The new companies that are totally focused on making money in a fast-changing marketplace have no margin to address policy. Of course, those businesses that have yet to come into being do not get represented at all.

Institutions present another challenge. The further you are away from the discipline of the marketplace, the more conservative you tend to be. That is a problem for government agencies; it is also a problem for nonprofit institutions. When intermediaries get institutionally established, they have a vested interest in keeping the system going, as it is quite apart from the interests of the ultimate beneficiaries of that system.

The final challenge is bandwidth—not the bandwidth of fiber in the ground, but mental bandwidth, particularly in a place like Congress. Here, policymakers deal with a whole spectrum of issues, including issues that, according to Supreme Court decisions on federalism, are properly decided by the States. We have seen Congress repeatedly address those issues.

Where Are We in Policy Research?

Figure 1 shows the principles of the Framework for Global Electronic Commerce, which was developed by Ira Magaziner's task force, the Electronic Commerce Working Group.[1] This framework was promulgated in the middle of 1997, after undergoing a substantial open review. The first three principles are almost corollaries of one another: that the private sector should lead and the government should be restrained. Even the fourth one, "recognize the unique qualities of the Internet," was framed with that kind of philosophy—i.e., that we should not assume that old regulatory models apply. All of these, with the possible exception of the third one, are not substantive principles, but principles of posture. That is, they tell us the way we should do policy, but they do not tell us what the policy should be.

Figure 1
Framework for Global Electronic Commerce Principles

1. The private sector should lead.
2. Governments should avoid undue restrictions on electronic commerce.
3. Where governmental involvement is needed, its aim should be to support and enforce a predictable, minimalist, consistent and simple legal environment for commerce.
4. Governments should recognize the unique qualities of the Internet.
5. Electronic Commerce over the Internet should be facilitated on a global basis.

The document lists a number of areas and goes into a policy discussion of each one. This is basically the scope of Internet policy development as it is practiced by the Administration today. This sets the framework, and these are the issues that we think of when we think of policy domains that relate to the Internet.

The Electronic Commerce Working Group has issued annual reports the last couple of years as well as new initiatives. These initiatives tend to move away from particular policy problems and on to larger themes or issues, such as the Internet in developing countries, understanding the digital economy, and the role of small business. The issues addressed in the last year—e-government, e-society, and the digital divide—are very broad.

In contrast, a large number of consultants and business writers talk (as Don Tapscott did in his 1995 book, *The Digital Economy*) about thematic developments in business processes and electronic commerce. Figure 2 shows Tapscott's list. You can see how different the formulation of this environment is from the business perspective.

Figure 2
Digital Economy Themes (Tapscott 1995)

- Knowledge
- Digitization
- Virtualization
- Molecularization
- Integration/ Internetworking
- Convergence
- Innovation
- Prosumption
- Immediacy
- Globalization
- Discordance

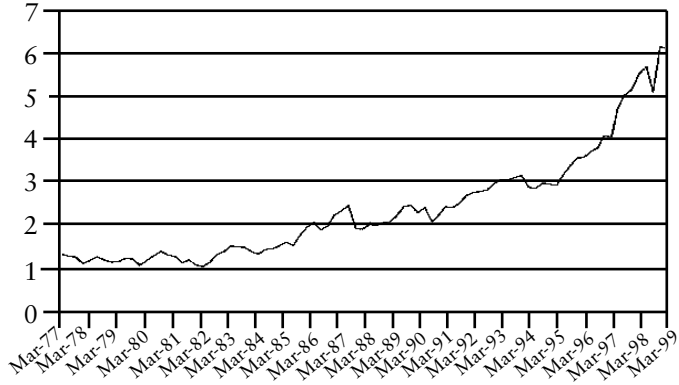
Disintermediation

How do we resolve this problem? The challenge, as I see it, is how to build some kind of understanding of cause and effect into this environment. I will start with the relatively simple concept of drivers.

The first driver is dematerialization, or the problem of intangibles. This is the same thing, but at two different levels. Figure 3 shows the growing role of intangibles in terms of the market-to-book ratio for the Standard & Poor's 500 Stock Price Index over the last 22 years. Starting in 1984 and over the past 15 years you see this market-to-book ratio move from, basically, parity to six-to-one. That is to say that most (83 percent) of the value in a stock cannot be derived from its book value.

Figure 3
Growing Role for Intangibles

Market-to-book for S&P 500: 1977-1999



Source: Merrill Lynch

A huge discrepancy is developing that is presumably due to the value of intangible assets that we don't measure under current accounting methods. This has precipitated debate over whether we should try to measure these assets more carefully, what kind of distortions that would create, and what kind of people would be upset if we did it (e.g., venture capitalists in the high-tech industry who do not want to see the value of their investment recognized when they merge with another company). Along with this is the problem of dematerialization, a long-

standing economic trend. If you reduce the value of the inputs that you put into finished goods and make them lighter and easier to transport, then you can overcome what was in classical economics the diseconomies of scale, the diminishing returns that resulted because a factory could not produce very well when it reached a certain scale. You had to bring resources in from great distances and distribute to great distances. Logistically, everything would get difficult to manage. As goods become dematerialized, this is less of a problem, and the economies of scale that come with advanced manufacturing can be exploited.

The next driver is globalization. Globalization started well before the Internet. It has a lot to do with the politics of the 20th century, trade liberalization, and sheer market forces. A good measure of the growing importance of globalization is a remark made by Alan Greenspan about a year ago:

> By far the largest contributor to growth of our price adjusted GDP or value added has been ideas, insights that leveraged physical reality. The consequent downsizing of output, of course, meant that products were easier and hence less costly to move and most especially across national borders. Imports of goods and services as a percent of gross domestic products worldwide, on average, have risen from approximately 14 percent 25 years ago to 24 percent today.[2]

The growth in physical weight of such trade generally has been far less. For example, U.S. data on both exports and imports indicate that the price-adjusted value of our trade per pound has risen by approximately four percent per year over these same three decades. In other words, the physical weight of a dollar's worth of trade is shrinking by four percent per year. But this understates what is going on. For example, VCRs in 1979 weighed 40 pounds and cost $800. Now they cost $100 and weigh between five and ten pounds.

The third driver is digitization and its relationship to dematerialization. The two often get confused because digitization gives us incredible ability to compact text and data. What it has done to text and data, just as the Victorian Internet—the telegraph—did, has been revolutionary. But in a way it does the same thing that dematerialization has always done. Digitization has also been closely related to globalization because it has given every person, every file, and every resource in the world a global address that is instantly accessible from any other address on the Internet.

Economic Changes, Economic Issues, and Scale Economies

I want to give a quick overview of economic changes, economic issues, and scale economies by addressing five issues. The first issue is network effects. This relates to digitization because the Internet gives us the ability to construct networks out of information. The ability to move from Web site to Web site over hyperlinks is basically creating networks out of information. Editorial value is added in the form of the embedded links that create networks. You do not need miles and miles of copper wire, optical fiber, or expensive right-of-ways. You can create networks at a very, very high level, and very "virtually."

Scope economies is a more problematic issue. Digitization allows us to put all kinds of information into a common channel. If you have a CD-ROM you can cram all sorts of functionality into that one very lightweight plastic medium. We see a lot of unresolved issues about scope economies and software development.

Transaction costs have become a critically important strategic issue. Reducing transaction costs is one of the big promises of technology. As one moves into virtual products and services the production and distribution costs become less, but the transaction costs can stay at a very high level. They become, from a business perspective, extremely important. In fact, some of those transaction costs are very hard to squeeze out using technology (For example, the cost of lawyers). The cost of doing contracts and managing legal issues basically remains the same.

Non-excludability is an important issue with information products and services. It has been a major factor in the debate around copyright. At one level, technology and globalization make it extremely easy to move information products around. This makes it appear that they are extremely unprotected and in need of additional protection. But technology can also be used, through encryption and copyright management systems, to create locks on information that did not exist before. These locks can be much stronger than what we have in the physical world.

Finally, limited attention is the ultimate limitation that we run up against. It becomes a very synergistic factor with things like transaction costs. For example, people do not read click-wrap licenses. But lawyers think they are extremely important and go to great lengths to devise appropriate licenses that protect the interests of their clients.

How Do We Go Forward?

We can move from an understanding of the economic environment to the business phenomenon by considering six issues. First, bundling is extremely important. If you look at transaction costs, the excludability problem, and the limits of attention together, you can see why advertising has proven to be so critically important on the Web. The Web has become a medium for channeling eyeballs, bundling information, and gaining attention. Bundling becomes a commonplace strategy in more ways than we ever imagined.

Second, consumers are empowered by the technology. Their empowerment leads to the disintermediation of many traditional business models. This plus the network externalities create very strong first-mover advantages, which result in competition for the market rather than within the market. There are huge advantages to being first. The promise held out to many new Internet companies is if they get there fastest like Amazon did, they can get the whole thing, or at least enough of it so that the market tips in their favor and they virtually get a monopoly in the space they designed for themselves. At the same time, however, new forms of intermediation crop up. There are new ways to add value to virtual value chains by pulling different pieces together and packaging them as a tool for consumers or businesses.

Outsourcing strategic relationships is much discussed. If we look at this in terms of political economy, we see that individual empowerment becomes a significant force. Some believe that it may transform politics, although there is very little empirical evidence on that as yet.

Enhanced markets is the third issue. This issue combines with individual empowerment to give us an extraordinary faith in the ability of markets to be more effective and more transparent, connecting buyers and sellers in ways that weren't possible before. Openness and transparency are traditionally thought of in political terms, but openness has become critically important for marketing. IBM, for example, presents a totally different business model that in some ways seems to be built on the standards lesson of the Internet. Can you move that standards lesson onto the next higher level and use it to support operating systems and applications, not just protocols for using the Internet?

Fourth, standards development becomes increasingly important. In fact, one of the radical lessons of the Internet is the importance of

standards for not only raising all boats, but also providing a constantly moving platform on which proprietary innovation can take place.

Fifth, technology-mediated policy gives us the hope that technology can help us resolve some of the problems like content control, privacy, and contracting in the virtual environment.

Finally, the blurring of borders is a terribly complex and important issue. We see a lot of blurring of boundaries whether they are national jurisdictions, departments within companies, or boundaries between firms that engage in different forms of strategic alliances. Having an information infrastructure that can transcend those boundaries has the effect of weakening them. But at the same time, new business models and policy problems will demand that new kinds of boundaries are erected.

Conclusion

There will be lots of winners and losers. But that is how the policy debate is often going to be framed.

Where does this lead us in terms of the context of policy development? We have a hugely expanded private sphere. That is where the action is. What the private sector experiences as a multitude of strategic opportunities, policymakers may look at as a plethora of new stakeholders and new issues that they don't have time to address properly.

The limit here is the fixed competence and resources for policy development. This is not just Congress, but the executive branch broadly. Congress does not want to see the executive branch have any more policy development capabilities than it has. One person's policy is another person's politics, and so we have very few resources. We lost the Office of Technology Assessment. President Clinton promised to cut the White House staff 25 percent in the 1992 campaign, and he did.

Policy developers are newly empowered. But so is everybody else. This gets us entangled in the issues around the digital divide because it takes place in an environment where everybody's being empowered, so empowerment is relative. Individuals are empowered, big companies are empowered, people in Africa are empowered, people in America are empowered.

There is a lot of feeling that "digital divide" is the wrong term and we should be looking at "digital opportunity." My favorite is actually "universal participation." In any case, what was thought of as an equity issue in the old context of universal service and public libraries

has become an economic issue. We want to grow the economy as large as possible. We want to take advantage of the network effects that come from having everybody on board and participating. This involves training, education, having a computer at home, and having a credit card so you can engage in electronic commerce.

Growth orientation has become extremely important. You hear about it in the debate over taxation. The Internet is the greatest thing humans have ever created, so we don't want to do anything to slow it down. Tax policy be damned.

Interaction with economic policy is another issue. Empirically it is very hard to understand the connection that exists between our personal experience with personal computers (which have clearly changed our individual lives), firm-level experience with information technology (where we can demonstrate change at least through case studies and some statistical information), and the macro-economic level (where the productivity paradox has persisted). Only in the past few years have economists been able to show with any degree of consensus that there has been a payoff. And that may be because of Intranets. Having taken off in the early 90s, they have finally had measurable impact at the highest level. It is too soon to measure any substantial impact of electronic commerce or other manifestations of the public Internet.

Finally, we can look at the rebalancing and barrier reconstruction as a long-term policy-development exercise. Barriers get knocked down, perforated, or overcome, so we have to keep thinking about how this changes all the old laws and regulations that were developed in the industrial economy. Do we go in and rebalance some of the jurisprudence when the underlying factors are changing?[3]

Endnotes

1. *A Framework for Global Electronic Commerce*. Electronic Commerce Working Group; (July 1997).
2. Remarks by Chairman Alan Greenspan, "Trade and technology," Before the Alliance for the Commonwealth, Conference on International Business, Boston, Massachusetts, June 2, 1999.
3. For those who are interested in exploring further the questions raised in this chapter I recommend Lawrence Lessig's book *Code and Other Laws of Cyberspace;* Basic Books, New York, NY, 1999.