ECONOMIC DRIVER

Government’s Touch Pervades Technology

By Nicholas Mercuro

Even technologies are entirely independent of the government’s commitment of resources to technological innovation and development.

The government has “institutionalized” the United States’ mixed-market economy by giving it structure, support and legitimacy. The market owes much of its success or failure to the government institutions that support and operate through it.

As George Will explains: “A mature capitalist economy is a government project. A properly functioning free market system does not spring spontaneously from society’s souls as dandelions spring from suburban lawns. Rather, it is a complex creation of laws and mores.” One facet of institutionalization of the market comes about by virtue of the government’s ongoing role in advancing certain technologies, which in turn can affect market performance through the economy. Technology affects behavior and ultimately market performance over time by expanding the choice set, or tools, that are available for production and consumption.

The government drives the evolution of certain technologies by committing resources to them—sometimes directly, sometimes indirectly.

But the effect the government has on the market manifests itself in different ways:

• First, the government allocates resources to drive certain technologies for the direct benefit of particular industries. The fields of energy, transportation, agriculture, medicine and pharmaceuticals, and, of course, the military are sectors of the economy where agencies traditionally allocate scarce resources to support select technological initiatives.

• Second, in some instances, the government’s commitment of resources to one field spills over into others. A prime example is technology innovation work done for the military, which results in tools that often gain broad use by civilian agencies and outside the government altogether.

Nowhere is this more evident than in the projects of the Defense Advanced Research Projects Agency, the central research and development arm of the Defense Department. DARPA brings together academic, industry and military communities to invest in basic and innovative technologies and to explore revolutionary ideas. The goal is to foster and advance technologies and systems that will give the military significant advantages.

The agency’s focus is on military technologies, but it also develops generic technologies, most notably those related to microelectronics, computing, networking and other information technologies.

The technologies DARPA pursues generally have nonmilitary applications that lead to innovations in the private sector. DARPA’s most significant non-military accomplishment was its work on ARPANet, the wide area network that was the precursor to the Internet.

• Third, the government affects markets by forcing certain technologies on society. This is abundantly obvious in the fields of environmental protection and homeland security.

For most of the past 35 years, the Environmental Protection Agency has relied on a command and control approach that has forced certain technologies on select industries. The consequence: The market sector, attuned to these government-prescribed requirements, steps in and supplies equipment that meets EPA-mandated air emission and water effluent restrictions.

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Precisely the same phenomenon is currently taking place as the Homeland Security Department begins to require that agencies at all levels of government and industry adopt certain technologies to defend the homeland.

Again, as with EPA, companies track the developments within Homeland Security and situate themselves in the marketplace to respond to the government’s technology-forcing directives.

A Last Example

• Finally, for another example of the government’s impact on technology and markets, consider the Small Business Administration’s online information and services.

Although many agencies are in the information-providing business, SBA work has a direct cause-and-effect in the marketplace and on the economy. SBA views itself as the gateway for small U.S. businesses to connect with agencies. It provides specific tools and resources to help small companies grow their businesses and create jobs.

The government inevitably drives certain technologies by committing resources to them, which in turn continually forms and reforms institutionalized markets throughout the U.S. economy.