Chapter 4
The History and Repercussions of Strategic Informing Technology

ABSTRACT

This chapter outlines the history of strategic informing technology as well as its implications and impacts. The chapter begins by examining major developments that occurred in the United States, including the use of punch card machines and the creation of the internet. Next, the chapter turns to Germany and documents how strategic informing technology was employed by the Nazi state to develop advanced weapons such as the V-1 and V-2 rockets and to record demographic data used in concentration and death camps. The chapter then considers major figures and developments that occurred in Britain, such as Alan Turing's development of the Turing Machine. Next is France, with an emphasis on the role played by the company Bull. Japan is then briefly examined followed by the USSR and Poland. The chapter then examines the first attempt at a national computer development program, which took place in Poland from 1971-1975. It concludes with an examination of the Polish national information system (INFOSTRADA) and a critical evaluation the Lange economic model.

UNITED STATES

The concept of informing technology, or informatics (automated information), was developed by the French in the mid-1960s; however, the machine "processing" of information (a term borrowed from engineering, which describes metalworking) is 130 years old. The development of counting machines is also long, going back several hundred years, but their strategic application began in the United States in the 19th century when the 1890 census was recorded on punch cards. The exigence for the use of these machines was created by a massive migratory wave from Europe to the eastern and midwestern US and from China to the western US (the latter were expanding the American railway infrastructure over a large country).

Then, in the wake of the Great Depression, President F. D. Roosevelt introduced a number for every citizen in 1935 in connection with the Social Security Fund. Because of this, punch card machines were further developed, as so-called "collator matching transaction cards" were added to citizens' files to update them and to print social security checks. This represented a significant strategic application of the mechanization of data processing for the national welfare system, and this system continues to be used up to the present in its same basic form.

During World War II, the strategic weapon was the atomic bomb, which was developed at a research facility in Los Alamos, New Mexico. What would come to be known as the "Manhattan Project" was overseen by Vannevar Bush (1890–1974), who at the time headed the Office of Scientific Research and Development (OSRD). Before joining the Government, he was vice president of MIT's famous polytechnic school and dean of the University's Faculty of Engineering. He is most famously known for his engineering work on analog computers beginning in 1927. Bush constructed a differential analyzer, an analog computer with some digital components that could solve differential equations with up to 18 independent variables. The rise of Bush and others at MIT was the beginning of digital circuit design theory. Memex, which began to be developed in the 1930s, was a hypothetical microfilm browser with a structure analogous to hypertext. Memex and Bush's 1945 essay, "As We May Think*,"* influenced generations of computer scientists, who drew inspiration from his vision of the future. He had a significant influence on the thesis (1937) and doctoral dissertation (1941) of Claude Shannon (Figure 1). Shannon, in his first work, developed the basics of making electrical computations in the binary code of Boolean algebra, which replaced the counting systems on electromagnetic relays (which also gave rise to the development of computers). It should also be mentioned that Bush supervised the construction of the ENIAC electronic computer, which was used to calculate artillery firing tables after its completion in 1946. Its development, however, was not a strategic solution for Americans; instead, its creation is owed to Bush's scientific interest.

Figure 1. Left - Vannevar Bush (1890–1974), the first American advanced technology strategist; right - his student Claude Shannon (1916-2001), inventor of the 1937 electrical circuit system for calculations in binary code, which makes modern computers work (Photo: Wikipedia)

Related Content

Off the Paved Paths: Exploring Nature with a Mobile Augmented Reality Learning Tool
Kimiko Ryokaiand Alice Agogino (2013). *International Journal of Mobile Human Computer Interaction (pp. 21-49).*
www.irma-international.org/article/off-paved-paths/77621

Preparing Student Sojourners for Cultural Immersion in Multiple User Virtual Environments
Peter Galanteand Kevin W. Tharp (2012). *International Journal of Social and Organizational Dynamics in IT (pp. 48-58).*
www.irma-international.org/article/preparing-student-sojourners-cultural-immersion/72889

Founding an Organization Theory of Work Policy as Imperative Regimes of Regulated Freedom for ITC Development
Raymon R. Bruce (2012). *International Journal of Information Communication Technologies and Human Development (pp. 39-55).*
www.irma-international.org/article/founding-organization-theory-work-policy/69973

The Destructive Effect of Complex Analytics on Innovativeness
Burçin Güçlüand Miguel-Ángel Canela (2017). *International Journal of Applied Behavioral Economics (pp. 38-56).*
www.irma-international.org/article/the-destructive-effect-of-complex-analytics-on-innovativeness/196647

Security Threats for Big Data: An Empirical Study
Muhammad Nazrul Islam, Tarannum Zaki, Md. Sami Uddinand Md. Mahedi Hasan (2018). *International Journal of Information Communication Technologies and Human Development (pp. 1-18).*
www.irma-international.org/article/security-threats-for-big-data/215432