

Chapter 11

Trends in Terminology: From Punched Cards to Digital Informing

abstract

The purpose of this chapter is to analyze and review trends in digital terminology. The chapter begins by examining the origins of computerization in the United States during the 19th and 20th centuries. Next, the chapter examines the key concepts punch cards and computer science. The chapter then discusses how the term computer science is misleading. This is followed by a discussion of how information technology became the most popular term in the US. The chapter then switches focus to Europe and discusses France's promotion of informatique as well as Europe's switch from informatics to ICT. Next, the chapter considers how the internet has given rise to terms like e-commerce. The chapter concludes by considering the transition from ICT to digital informing and informing technology.

US BUSINESS STARTS COMPUTERIZATION

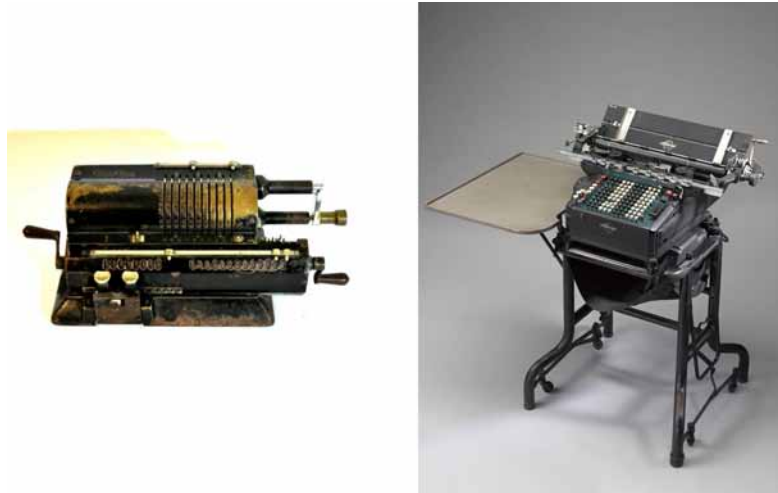
The development of counting machines began during the Industrial Revolution in the 19th century. After this, at the beginning of the 20th century, machine calculations developed along two distinct paths.

- Handheld arithmometers and bookkeeping machines,
- Punched cards machines for mass census mechanization (used first in 1890 in the US) and for large volumes of business data, a market which, since 1924, has been dominated by IBM.

As a result of the Great Depression (1929-39), the *Social Security Act* was signed by President Franklin D. Roosevelt on August 14th, 1935, to create a social insurance. Social security numbers were created and provided for each resident in the US. This act triggered the broad application of IBM punch-card machines.

DOI: 10.4018/978-1-7998-8036-3.ch011

Figure 1. The 19th century Odhner arithmometer was in use almost up into the present, as was the book-keeping machine (Photos: public domain)



During this period, the term *punched card systems* was the dominate terminology. This technique introduced the term *programming*, which was initially done on external boards where cables connected the instructions. However, this programming system was also used on an electronic computer, ENIAC (1946). Soon, punched card machines were replaced by computers, such as IBM 1400 (where the data was still on punched cards). The Americans called this EDP (*Electronic Data Processing*) or ADP (*Automatic Data Processing*). From this point on in the United States began the popular term *data processing*.

THE UNITED STATE SWITCHES FROM PUNCH CARDS TO COMPUTER SCIENCE

The term “computer science” appears in a 1959 article in the journal *Communications of the ACM*, in which Louis Fein (1959) argues for the creation of a *Graduate School in Computer Sciences* analogous to the Harvard Business School (established in 1908). He defended the name by saying that, like *management science*, the subject is applied and interdisciplinary, while having the characteristics typical of an academic discipline. Perhaps mainly due to the broad application of computers in data processing for businesses and government in the 1960s, *computer science* came into its own as a discipline. The first *computer science* department in the US was formed at Purdue University in 1962.¹ The first person to receive a Ph. D. from a *computer science department* was Richard Wexelblat at the University of Pennsylvania in December 1965.

Computer science deals with the theory of computation, algorithms, computational problems, and the design of hardware, software, and applications for computer systems. A complete definition of computer science is provided Peter J. Denning in the article “Computer Science: The Discipline” (in the *Encyclopedia of Computer Science*).

In Poland, the term *data processing* was used for the first time in A. Targowski’ s thesis “the use of computing machines in comprehensive enterprise data processing,” defended on January 23, 1961, at

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