

Lost in Translation:

“Total Systems” from
War Room to Boardroom

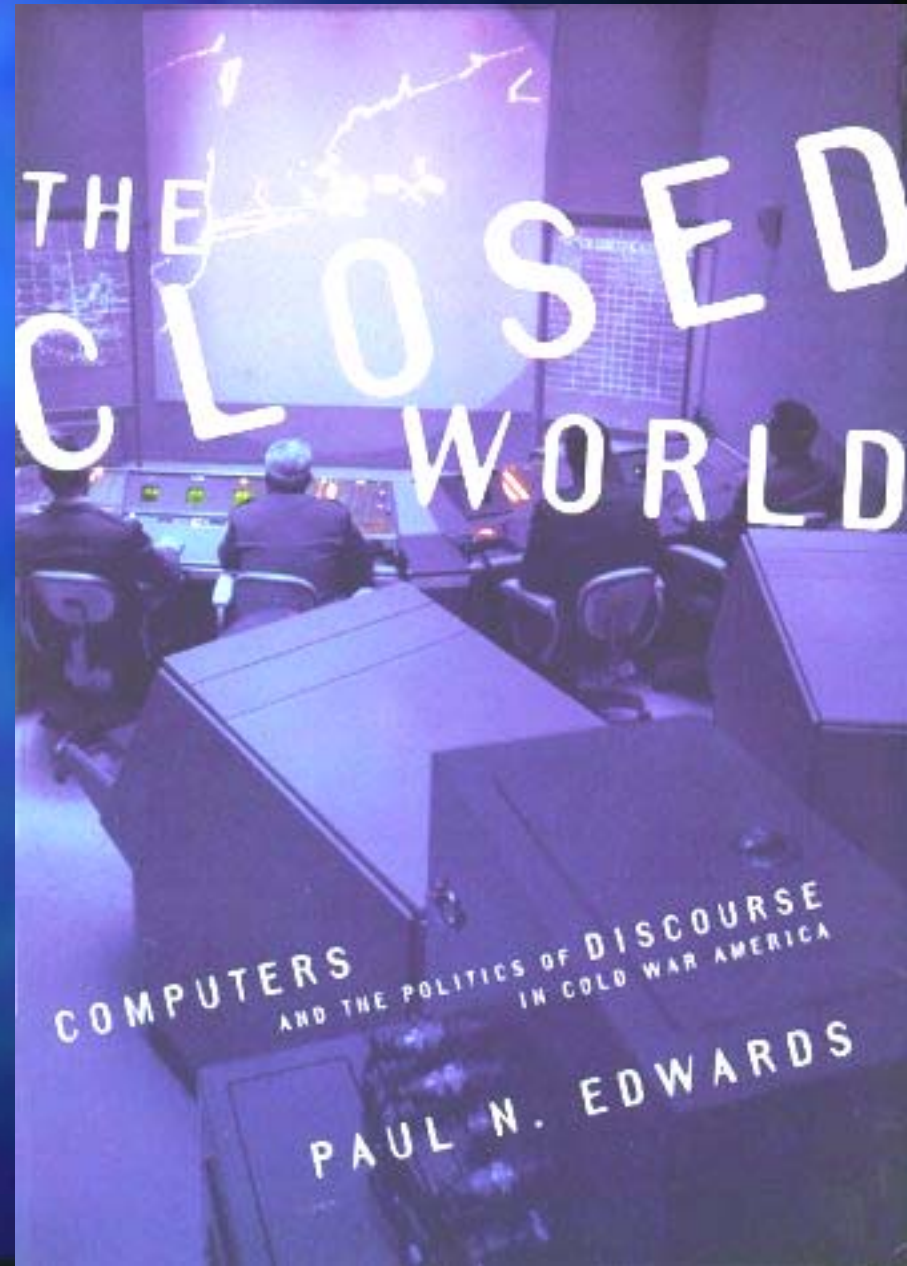


Thomas Haigh – thaigh@sas.upenn.edu
www.tomandmaria.com/tom

The Closed World

- Cultural history of the SAGE air defense system and the SDI project

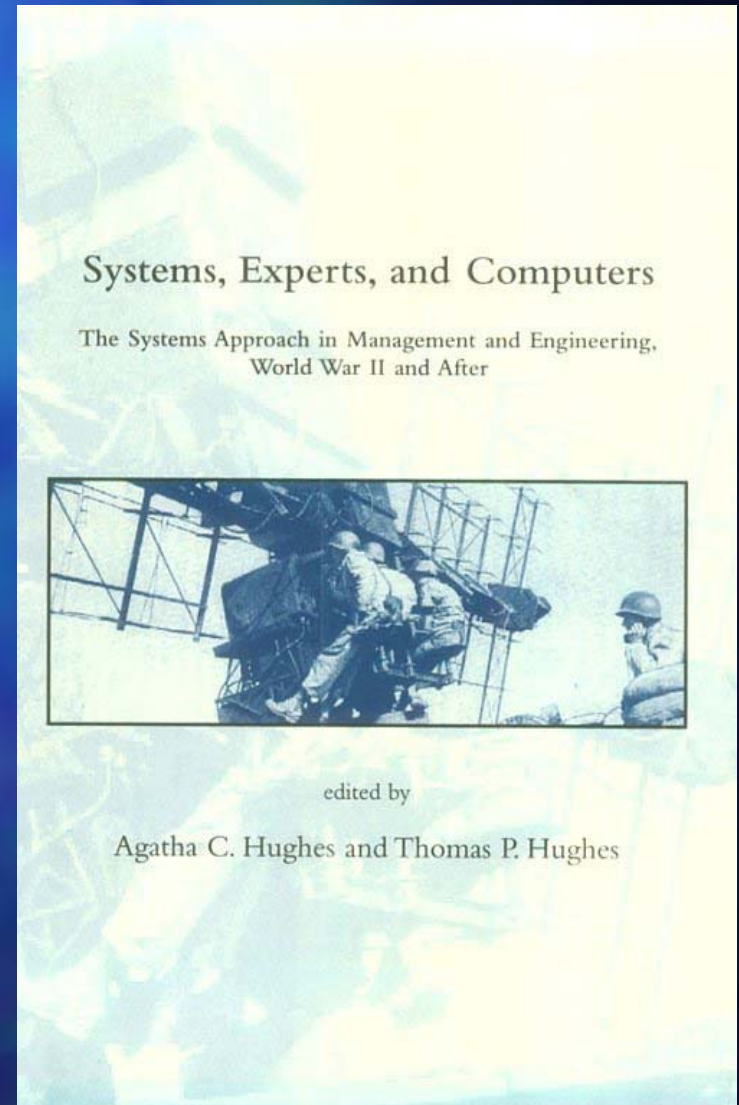
Edwards, Paul. *The Closed World: Computers and the Politics of Discourse in Cold War America*. Cambridge, MA: MIT Press, 1996.



“The Systems Approach”

Hughes, Thomas Parke. *Rescuing Prometheus*. 1st ed. New York: Pantheon Books, 1998.

Hughes, Agatha C., and Thomas Parke Hughes. *Systems, Experts, and Computers : The Systems Approach in Management and Engineering, World War II and After*, Cambridge, Mass.: MIT Press, 2000.



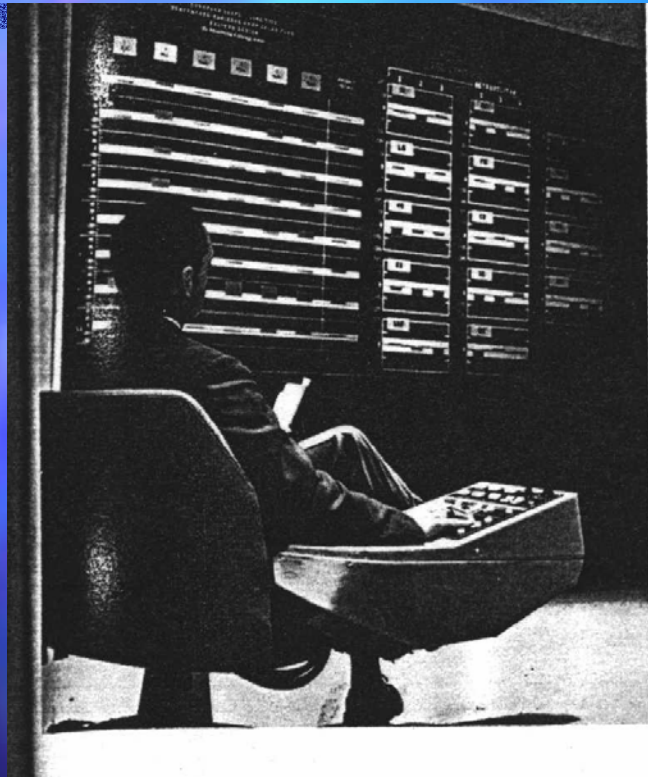
The Corporate War Room...



- "the war-room atmosphere is growing up fast" (*The Corporate Command Post*, 1968)

"one by one, the same applications that are pioneered and proven in military use ultimately find their way into business" (1968)

...a Utopian Vision



Executive armchair control panel (closeup above) reduces need for paper reporting.

Widener, W. Robert. "New Concepts of Running a Business." *Business Automation* 13, no. 4 (1966): 38-43, 63.

"a more relaxed, leisurely management environment. The uneasiness will be replaced by a feeling of confidence in the completeness and timeliness of information and in the decisions based on that information...."



SPRING 2001

CURRENT ABSTRACTS

ARCHIVES

SUBSCRIPTIONS

SUBMISSION GUIDELINES

ADVERTISING INFORMATION

REPRINT PERMISSION

EDITORIAL STAFF & ADVISORY BOARD

CONTACT INFORMATION

HBS HOME

EDUCATORS & RESEARCHERS HOME

(Burroughs Corporation photograph from 1961 courtesy of Charles Babbage Institute, Univ. of Minnesota, Minneapolis.)

HARVARD | BUSINESS | SCHOOL

Haigh, Thomas. "Inventing Information Systems: The Systems Men and the Computer, 1950-1968." *Business History Review* 75, no. 1 (2001): 15-61.

Thomas Haigh

Inventing Information Systems: The Systems Men and the Computer, 1950-1968

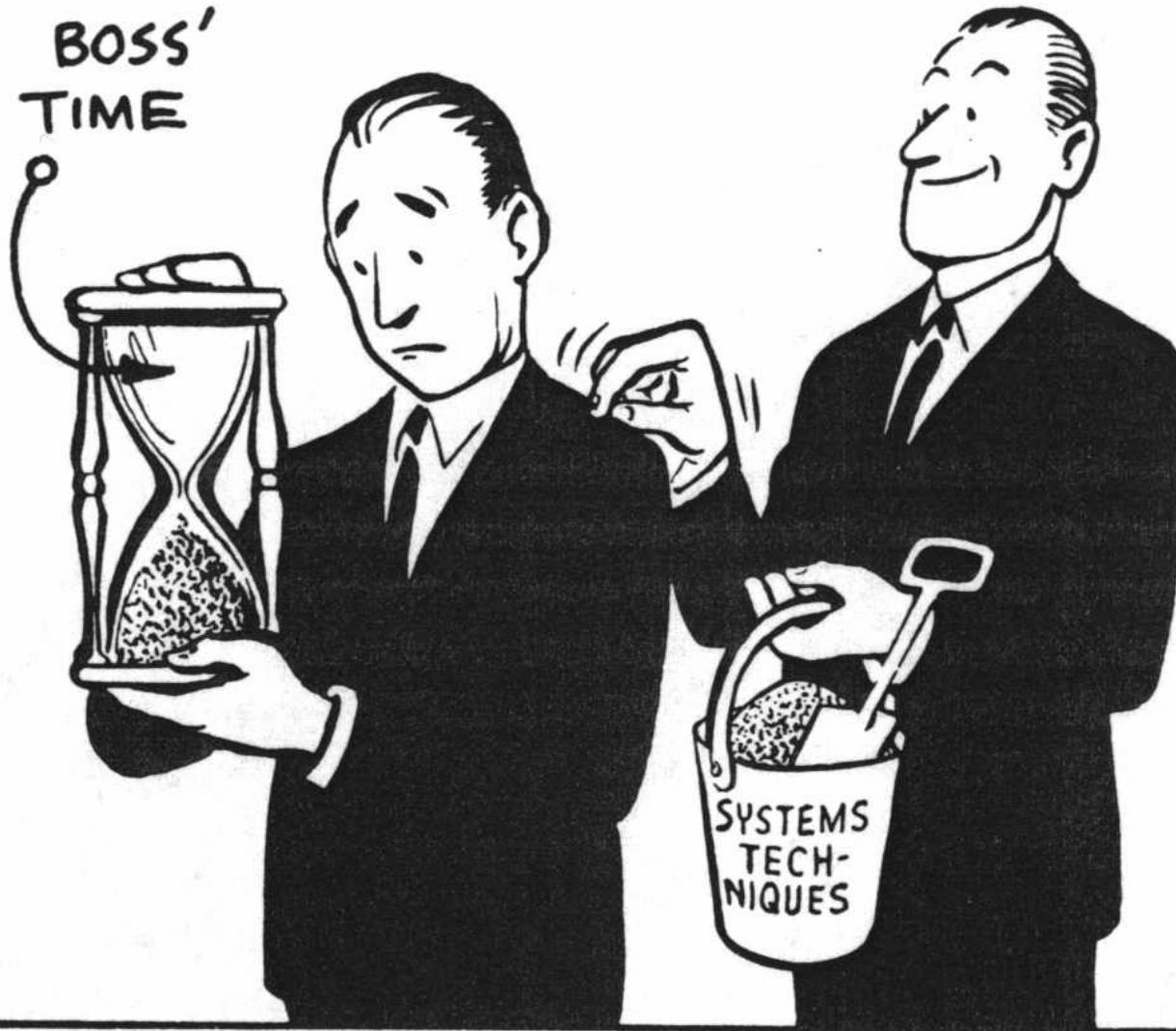
During the 1960s, many academics, consultants, computer vendors, and journalists promoted the "totally integrated management information system" (MIS) as the destiny of corporate computing and of management itself. This concept evolved out of the frustrated hopes of 1950s corporate "systems men" (represented by the Systems and Procedures Association) to establish themselves as powerful "generalist" staff experts in administrative techniques. By redefining the computer as a managerial "information system," rather than a simple technical extension of punch-card "data processing," the systems men sought to establish jurisdiction over corporate computing and to replace accountants as the primary agents of managerial control. The apparently unlimited power of the computer supported a new conception of information, defined as the exclusive domain of the systems men (assisted by operations research specialists and computer technicians). While MIS proved impossible to construct during the 1960s, both its dream of all-encompassing automated information systems and the resulting association of information with the computer endured into the twenty-first century.

During the late 1950s and early 1960s, a new and exciting concept swept through corporate America: the "totally integrated management information system" (MIS)—a comprehensive computerized system designed to span all administrative and managerial activities.

THOMAS HAIGH is a Ph.D. candidate in the History and Sociology of Science Department of the University of Pennsylvania. He would like to thank Richard B. John, Walter Licht, Mauro Guillen, Rosemary Stevens, Walter Friedson, William Aspray, David Mindell, Burt Gnal, Robert V. Head, David Hounshell, John Agar, Siegfried Buchtaupf, Heinrich Trischler, Jeremy Vetter, Josh Buhls, Carla Keiras, Jeffrey Tang and Nathan Eisenberger for their comments on earlier versions of this paper. Its preparation has been supported by fellowships from the IEEE History Center, the Charles Babbage Institute and the University of Pennsylvania.

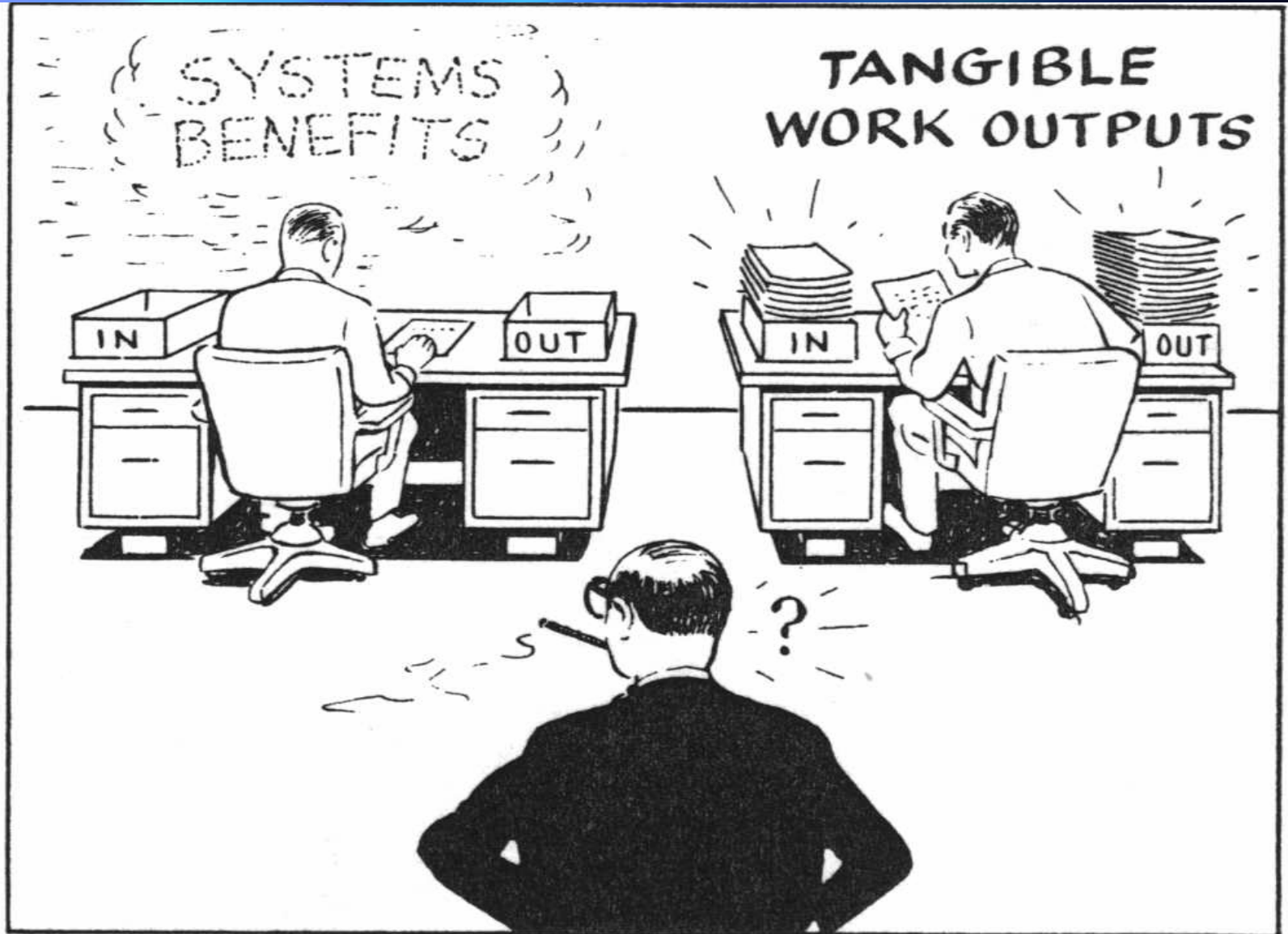
Business History Review 75 (Spring 2001): 15-61. © 2001 by The President and Fellows of Harvard College.

Great dreams...



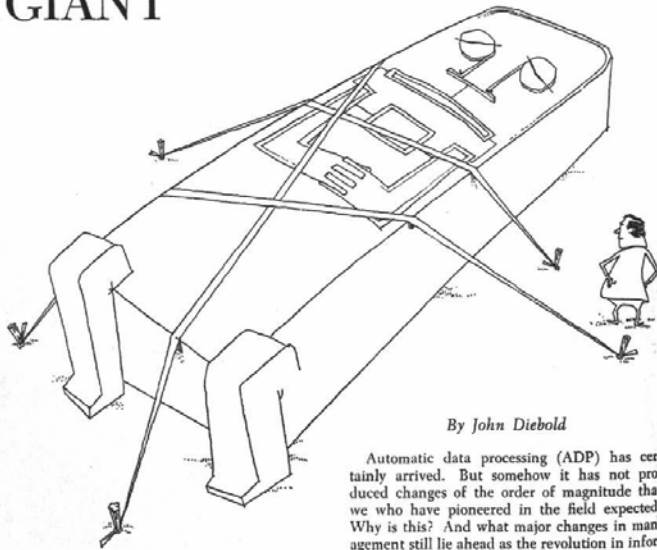
If he manages through systems, the boss will have time for leadership.

... but limited respect



MIS Will Realize Potential of computer...

ADP - THE STILL-SLEEPING GIANT



By John Diebold

Automatic data processing (ADP) has certainly arrived. But somehow it has not produced changes of the order of magnitude that we who have pioneered in the field expected. Why is this? And what major changes in management still lie ahead as the revolution in information technology gathers momentum?

Speedy and Spotty

Let's take a quick look at the record since ENIAC and Mark I made their appearance 19 years ago. In that brief period five distinct phases may be discerned:

(1) First, there was the coldness of potential users in the early 1950's. Typical of this period is the controller who quoted me Pope's "Be not the first by whom the new is tried, nor yet the last to lay the old aside." Everyone was from Missouri and had to be shown.

(2) Next came the status "kick" of 1956-1957 when corporate presidents decided they had to keep up with the Joneses. Four-color photos of walnut paneled, deep-carpeted, "showcase" installations graced corporate annual reports, and yet-to-be-realized savings by computers were what the presidents bragged about to one another out on the golf course.

(3) Then, with the onset of the 1957 recession, came disillusion as the initial installations failed to live up to expectations. Naive early projections of big payoffs changed in a matter of months to an attitude reminiscent of Damon Runyon's character, Harry the Horse, on his way to the track: "I hope I break even today - I need the money."

(4) The fourth era was ushered in during the early 1960's. It was characterized by a growing sophistication on the part of business regarding at least the obvious data-processing applications (as more programmers and other trained personnel became available). Of especial importance, there was a growing appreciation by computer manufacturers of business data-processing problems, which affected computer design.

(5) Finally, today, we have routine acceptance of the electronic computer as an everyday tool of business. Almost 15,000 computer systems are now installed in this country alone. And, of even greater significance, more computers are now on order than have been built in the past 15 years.

Unrealized Potential

Of course, many of the 15,000 ADP systems in use are more than paying their way, and some are performing tasks that were not possible before. But even in the best applications we have not come close to realizing the computer's true potential. Let me hazard some reasons why.

Automatic Data Processing 61

"BE NOT THE FIRST BY WHOM THE NEW IS TRIED, NOR YET THE LAST TO LAY THE OLD ASIDE!"



"OF COURSE OUR INSTALLATION IS A SUCCESS - FOUR-COLOR PICTURE SPREAD IN LAST MONTH'S OFFICE INTERIORS - NEXT MONTH, HOUSE BEAUTIFUL!"



"I HOPE WE BREAK EVEN TODAY - WE NEED THE MONEY!"



Deterring factors differ from installation to installation. Sometimes - but rarely now - the equipment is at fault. In most cases the problem can be laid right on management's doorstep:

- Inadequate planning, mostly parochial rather than corporate-wide in scope.
- Not enough fresh thinking, and too much reliance on canned approaches.
- Selection of the wrong people to plan the installation - i.e., technical specialists who fail to acknowledge or even appreciate their limited understanding of business practice.
- Overemphasis on hardware and underemphasis on the design of comprehensive systems.

These are serious faults. But the basic problem lies deeper. It is far more subtle, yet in a

Univac Advertisement, early 50s

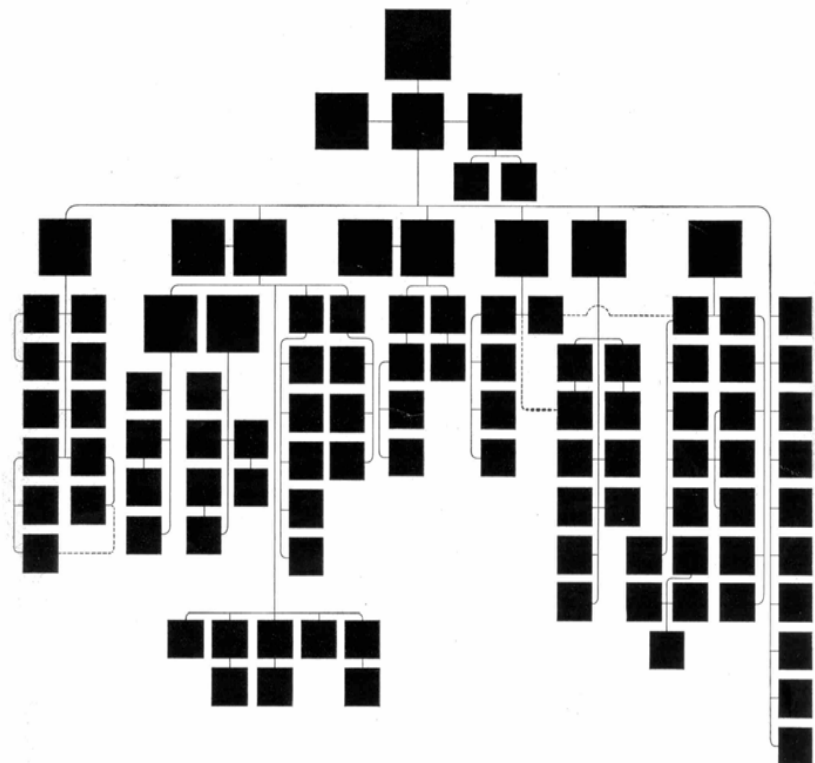
Remington Rand presents

THE ELECTRONIC ERA FOR BUSINESS WITH **UNIVAC** *

FACT-TROLLER

...THE FIRST UNIVERSAL
ELECTRONIC SYSTEM DESIGNED
FOR BOTH MANAGEMENT
AND SCIENCE

* A DEVELOPMENT OF THE ELECTRONIC COMPUTERS CORP.



Your business.



Your business with a Univac Total Management Information System.

Management is no longer the remote apex of a pyramid but the hub of a wheel. Lines of communication are direct. Every area of activity is monitored on an absolutely current basis. And centralized control of decentralized operations becomes a reality. Painlessly.

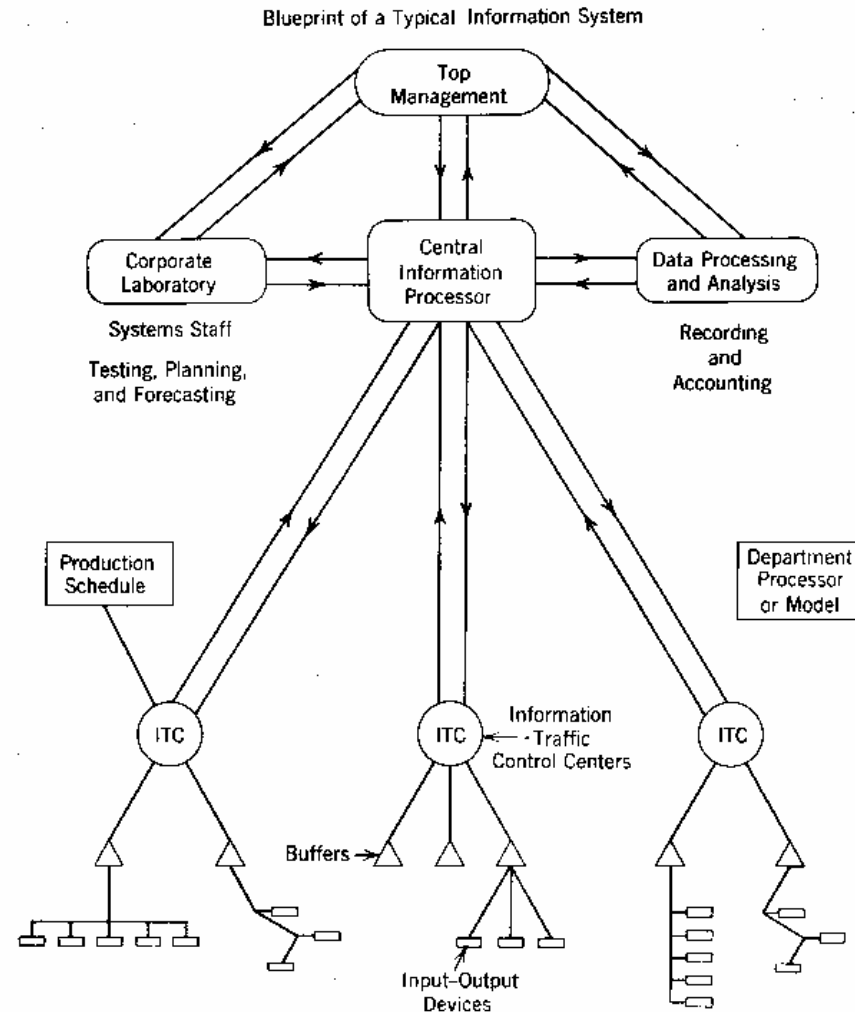
There are three distinct Total Management Information Systems graded for businesses of varying size and complexity and known collectively as The Univac Modular 490 Real-Time Systems.

For information about them, get in touch with the **Univac Division of Sperry Rand Corporation.**

"Blueprint for a Typical Information System"

Alberts, Warren E.
"Proper Perspectives in
Developing
Management Controls."
In *Management
Control Systems*, edited
by Donald G. Malcolm
and Alan J. Rowe, 13-
27. New York: John
Wiley & Sons, Inc.,
1960.

Proper Perspectives in Developing Management Controls 21



Visit My Website

- www.tomandmaria.com/tom
- Papers (4 published, one forthcoming, one draft), including “Inventing Information Systems”
- Information on research project
- Syllabi & resources from 4 distinct courses
- Computer history resource guide