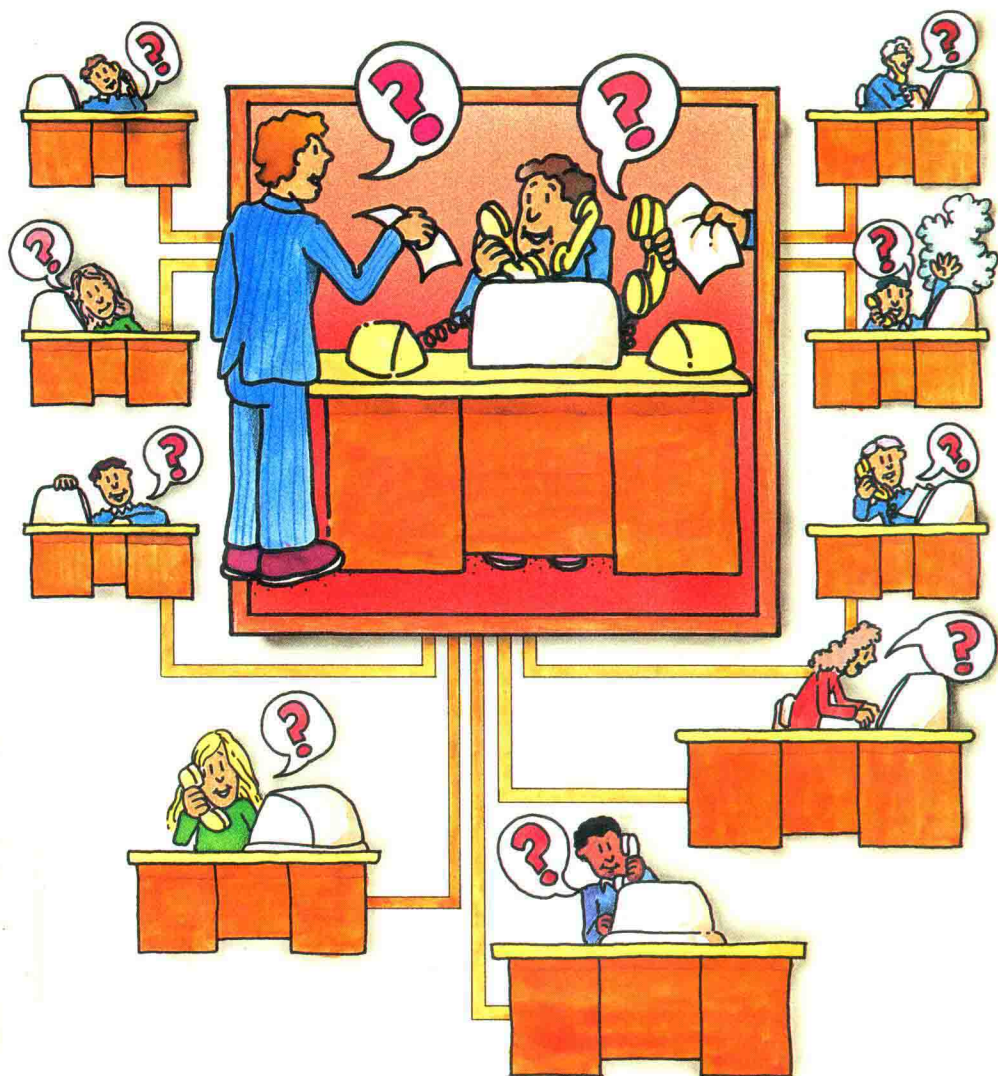


CRITICAL ISSUES IN OFFICE AUTOMATION



WALTER A. KLEINSCHROD

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CRITICAL ISSUES IN OFFICE AUTOMATION

TO PAT

Preface

A basic issue in office automation is that so few people even agree on what it is. OA is an arrangement of technology which helps business use and move information more effectively. It is an evolving business phenomenon with origins in data processing and word processing, spreading now into personal computing, networking, and other professional use of electronic systems. It is not evolutionary but revolutionary, as an *idea* replacing management's older understanding of what offices are with new understanding of the competitive tools that offices can become. It is a powerful agent of change, affecting organizational structures and individual ways of working, altering society and the world at large. It is some of the above and all of the above. Office automation, like beauty, is in the eye of the beholder.

Because technology is the most tangible of OA's manifestations, technology gets the most attention in the lectures and literature which have enveloped the field. There can be little argument about the functions or speeds or capacities of hardware and software—they can be demonstrated and described—although the *inability* of these products to perform certain tasks with ease gives rise to a special class of arguments, as discussed in the book. Technology is also where most “news” in the field comes from. Hardly a day goes by without several an-

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nouncements of new or forthcoming products, new or forthcoming enhancements, new companies, new partnerships, and even new publications in which to find word of the major and minor events of this fast-moving, high-tech industry.

As a journalist who has covered the office scene for more than thirty years, I continue to share the excitement of the new, the fast, and the powerful which can be felt in the beat of technology. But I also continue to feel there are deeper and more meaningful stories to be told about office automation—the clash of ideas which surround it; the effects it has on organizations, workers, and *workplaces*; the fears it can engender; the turf battles it can spark; the jobs it can threaten. These are OA's emotional negatives to set beside its immediate and longer-range positives: first, the costs it can cut, the productivity it can boost, the time it can save; and second, a payout only now being recognized, the executive and professional *performance* it can enhance, the competitive *edge* it can sharpen, the informational *capital* it can create for corporate strength and success. These negatives and positives are the less told stories. Together with issues of technology, they are what this book examines.

There is no question that managements serious about introducing automated information-handling systems into their offices must have technological expertise on call, and must themselves have some basic understanding of what technology can and cannot do. There is no question that organizations introducing OA must go through a fairly involved planning process if they are to manage the change successfully. Bookshelves and magazine racks brim with the literature and “specs” of OA's intricate, abundant ware; and many so-called cookbooks can guide a reader step by step through the fact-gathering and vendor-assessment process of OA planning.

Though this book also deals with planning strategies and product options, it does so more on a basis of the issues these options raise than on any basis of settled procedure. I have endeavored to present here the views of many of the OA authorities—managers, consultants, vendors, fellow journalists—it has been my privilege to know and sometimes to cover over the years. Their views often clash. At this early stage, we can be grateful that certain OA issues are at least definable; settling them is a matter of sorting out solutions as the issues clarify. How to settle them is ultimately what you, the reader, must determine for your own particular situation.

This book, then, is less a “how-to” manual than a “think-through” examination of a range of issues which affect OA and to which OA itself gives rise. It is a book that covers the OA scene broadly, critically, questioningly, and sometimes, I confess, with a bit of deserved

irreverence. But if this book enables the business executive, the business student, and the lay reader to have a better understanding of what office automation is, does, means, and *can be* for us and our world, as well as what yet must be reconciled if OA is to truly fulfill its promise, I will have accomplished my mission.

Acknowledgments

Any author who comes to a given subject as always the journalist-observer of the matters under review, never their actual doer, has more than the usual number of people to thank for the ideas, experiences, and words of advice that have helped to form the book.

And so it is with me. I am grateful to all the many sources I have quoted or paraphrased in the course of this work; their insights and expertise, if not always in agreement one with another, go far toward making the book the “issues” work it is. However, I would be remiss if I did not single out the following for special mention:

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1

Issues . . . What Issues?

How Management Woke Up to the Office

Big changes are taking place in offices, and I don't mean all that new technology. I mean *big* changes. Attitude changes. People are beginning to see their offices and understand their offices and even get excited about their offices in ways they never did before. These fervent mind openings stir a chain of events we tamely call office automation. What they're actually stirring is a revolution. A business, social, and managerial revolution. Sure, technology plays a part, but it no more causes this revolution than muskets caused the American Revolution. People cause revolutions—when the ideas they get, the conclusions they draw, the feelings of resolve they muster cause them to cause revolutions.

Management begins to realize that in offices it has been focusing on minor targets of opportunity—things like improving departmental productivity and lowering administrative overhead. All well and good, but hardly revolutionary.

Suddenly they see that advanced office technology can help them perform better and compete better—as an *organization*. These are major targets of opportunity; new ideas.

This new technology, properly used, speeds the flow of information and peoples' access to it, and advantages like these give companies

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extraordinary leverage in today's rambunctious business climate. Business has long used technology to machine its products and increase its profits, but seldom has it employed *information* technology to this extent, and that is a new idea.

Moreover, this technology is office-based technology. And so, suddenly, the office, that taken-for-granted albatross of business, is being seen as a systematized, computerized locus of new opportunity. Its technology puts powerful tools into the hands of knowledge workers and lets information be used in ways that were never possible before. The office becomes a resource for competitive prowess, and perhaps even for survival, at a time when all enterprise stands at the threshold of a postindustrial age. And these are new ideas.

The office is not that different yet, but it is being *seen* as that different, and it is being transformed in many organizations. The vision is revolutionary.

The issue is:

Awareness. Who has it and who doesn't? Many do.

So seek no further for the source of office automation. It lies in this new understanding of offices on the part of countless executives who may have worked in these places all their adult lives, but who never saw offices for what they were, why they were, or what they could become. Technology helps to mold that understanding and to tool up for new levels of business performance, but it is managerial insight and resolve that stir the currents of office change.

HOW IT WAS

Perhaps no institutions of business have been more ossified than offices. They were never *the* business, only unavoidable parts *of* business. Places to send bills out from, collect revenue at, file things in. Places for the boss to sit in. People tended to ignore offices, even though that's where they worked, in order to think about "business." For almost a century, offices hardly changed. Yes, they may have been prettied up from time to time—art going up on the walls, music coming out of the ceiling—but they remained as inefficient and organizationally straightjacketed as the drafty, cluttered workrooms we moderns smile at in old brown photographs. Even when the big computers arrived, back in the 1950s and 1960s, little about offices changed, institutionally.

In late-night movies of Spencer Tracy–Katharine Hepburn vin-

tage, where he is the big tycoon, she the hard-driving executive, we can see the office institution in all its changeless character. The cars look different. The airplanes (or more likely, the trains) look different. But the offices, except for the shape of the phones, not only look the same, but fundamentally are the same, as the majority of offices today.

Bosses and secretaries. Clerks and mail. Phone messages. Meetings. Get me that file. Where's that report? Lots of paper. Organizational strictures. Decisions delayed. Time wasted. Another day shot.

Suddenly executives by the thousand are actually seeing—comprehending—that scene for the very first time. What a mess! Inefficient. Costly. And so long ignored.

To truly see the office, we must look beyond the filing and meetings and all the sending out of bills to what these activities have in common. Information: its management, movement, and use. That's what office work is. Executives and the many other professionals who work in offices are fundamentally knowledge workers, information users. To one degree or another, their support staffs—secretaries, typists, and the like—are their information processors and providers. To an increasing degree, these services are being automated through computers and other electronic devices, linked or “networked” together.

WHAT AUTOMATION DOES

Office automation (OA) has many definitions. It can be:

- The application of electronics to office operations
- A process that improves the flow of and access to information within an organization
- A network-based system of advanced technology which allows workers to perform more effectively
- An organization-wide system which supports the generic needs all office workers have

We shall encounter more definitions as we go along. A common denominator of them all, a generic need, is *work with information*—accessing it, updating it, putting it to use—in two basic types of environments. In the first, increasingly referred to as Type I, work is *processed* and routine, as in data processing or centralized word processing departments. In the second, Type II, work involves *non-routine* informational tasks typically performed by managers, professionals, and other knowledge workers.

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Office automation supports the generic needs of both types of workers, and often for different purposes: to improve productivity (best sought in Type I offices) and to improve performance (a Type II rationale).

That managements often seek only productivity *savings* and not performance *improvements* is an issue for later, too. For now let's simply recognize that, for most firms, performance improvement is the second big battle of their OA revolution, the easier objective of productivity through processing having been the first. The goal of aiding the worker, not of processing the work, is a later—and greater—attitude change occurring in offices now.

OA development is and will continue to be as much a series of managerial mind openings as it is of technological breakthroughs.

The issue is:

Understanding information. How workers process it. How workers use it. How OA can best support both activities. And why this is vital to business.

Managers rely on information as a basis for sounder decisions. Financial executives use information to monitor company performance and competitors' performance and other external factors. Office-based professionals such as engineers and marketing executives need information—diagrammatic, tabular, textual—to create and sell new products and services. Sales personnel look up information to handle customer queries. Meanwhile, clerical personnel process the information that others will use. In time, many say, professional and managerial end users will themselves create and process much of the information they use. OA will have made the task easier, or will have changed the task, as OA always changes tasks, so that clerical intervention will not be as needed.

The office has been called "the control system for the business," the "support function" to the business, and an "organism which uses resources to enable better decisions." Those controls and those supports *use resources* which *are* information. The office, in short, is an information center. Soon it may not be possible to distinguish "office" from "business"; the two may blend inseparably.

Today, alert executives grasp the heady idea that offices, as information centers, are not only strong potential profit centers and vital business resources but also, because of management's historic careless attitude toward them, sources for great savings. Through better means and machines for the processing of information—target of easy oppor-

tunity though that be—offices are mines of untapped “administrative profits,” savings which go right to the bottom line of real profits.

In short, *organizations that process information efficiently and allow workers to use it effectively are organizations that perform well and prosper*. More and more managements now know they must find a way of accomplishing that condition for their own organizations. The way is OA.

OA POWER

So that is the revolutionary call to arms. Power to save. Power to excel. Power to outrun the competition. Power to the worker. Power to the balance sheet.

The weaponry is technology in the form of extraordinary tools, some available and proven, others still more promise than reality. Computers. Word processors. Networks. Printers. Electronic mail. Intelligent copiers. Disk storage. Software. All of them tools to manage, move, and store information.

In many offices today, workers communicate by revolutionary means that threaten to bury the traditional mails and telephone services. Employees send text and drawings almost instantaneously from screen to computer screen. They send messages to the telephonic or computer “mailboxes” of co-workers to avoid the wasteful game of telephone tag—that annoying rigmarole of back-and-forth calling and not getting through because the called party is so often not there. They confer with colleagues in widely separated locations by means of the videoconference—a televised meeting often cheaper to arrange than a face-to-face gathering with its heavy tabs for travel and lodgings.

Office workers process information on machines that resemble typewriters only in that both have keyboards—machines that outperform ordinary typewriters by orders of magnitude. These extraordinary devices—text editors, personal computers, professional workstations, call them what you will—edit text the way older typewriters never could, create charts and graphs the way older computers never could, and direct other devices to print the end products with a speed and artistry that the traditional office duplicator never . . . duplicated.

But have we the manpower and womanpower to shoulder all this weaponry? OA tools are often difficult to use; a worry. They are often very costly. A worry. *Does OA pay?* A big worry. Then there's the strategic planning needed to automate and win—a crucial worry, despite the failure of so many managements to recognize it.

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Revolutions are, to say the least, worrisome. They demand sacrifice. They upset tradition. They seldom deliver fully on all they promise. Not all the battles end in victory—sometimes the muskets don't work—and not all dreams of workers' utopia come true even when the computers do perform. These are the kinds of worries—or, to use a less emotional word, issues—this book will attempt to weigh in the trade-off scales of good managerial judgment.

- *Organizational issues.* The effects of OA on work life, work-at-home life, management policy, span of control, worker attitudes, professional competence—effects sometimes dimly perceived among business people, just as the office, until recently, has been dimly understood.
- *Social issues.* The effects of OA on union activity, health and safety rulings, job-bias actions (charges of sex discrimination, and legal or other actions resulting therefrom), privacy laws, security measures.
- *Global issues.* The role of OA in national and international agreements (or disagreements) on equipment standards and information flow across borders; and its contribution to nations' conflicting views on proper uses of information in a world split disproportionately among the highly developed, the developing, and those at subsistence levels.
- *Payout issues.* Can we measure OA's worth? It is possible of course to measure paperwork, but can one ever gauge the productivity of better information and the value of surer knowledge?
- And of course, *technology issues.*

Within a building or campuslike cluster of buildings, machines now talk to other machines over local area networks, or LANs. These loop-shaped and star-shaped arrays of cables could be just the communicational underpinning that office automators are looking for. Or maybe not; they are fraught with controversy. Which shape or "architecture" provides the best system? Which capacity, baseband or broadband? And will new, "intelligent" versions of the good old telephone switch—the PBX (private branch exchange) or PABX (private automated branch exchange)—relegate LANs to a passing footnote in the annals of OA development? Issues of systems design.

Laser printers, laser disks, fiber optics, satellite services, cellular radio, long-distance networks (AT&T's and the others'), and other offerings vie for the chance to move and produce information. If not now, soon. A key issue for management arises from this very abundance. Which OA weapons are the right ones? Which are too limited? Which amount to overkill? Which ones will people actually use? And