Opportunities Amidst Confusion

“Then there’s your gray mist. You take a night when there’s one of these drizzly, gray mists, and then there isn’t any particular shape to a shore.” Life on the Mississippi by Mark Twain

In less than a decade, the microcomputer has advanced from a hobbyists’ curiosity to an indispensable workstation used by millions of managers, professionals, and their staffs. The rapid proliferation of these tools has caused a great deal of confusion. Senior managers are asking “Are we getting enough value out of our investment in personal computing? What further steps should we be taking?” They are told that the “islands of information technology” should be integrated (McFarlan et al, 1983). But the route to integration is by no means clear; indeed the “islands” themselves are shrouded in a heavy mist, and the winds of technological change obscure our vision.

In recent years, a host of articles have described information technology as a tool for attaining competitive advantage (Ives and Learmonth, 1984, McFarlan, 1984). But personal computers are rarely discussed in this context (Henderson and Treacy, 1986). This paper explains how end-user computing can play two key roles in attaining competitive advantage:

a) helping managers learn about information technology, so they can identify appropriate new uses, and
b) helping managers quickly prototype new systems, which can then be handed over to the information systems professionals for full-scale development.

Managers who do not attend to the risks and opportunities posed by end-user computing may find that their organizations are less able to harness information technologies for competitive advantage. This paper outlines the key issues which must be addressed.

**Key Observations**

Advice on the management of personal computing often fails to recognize three key concepts:
1. Personal computing is often not “personal”
2. Personal computing is often not “computing.”
3. Measures must be taken to balance personal computing opportunities versus risks.

**Personal Computing is not Necessarily Personal:** The label “personal computing” should not be taken at face value. Because processing power is available on the individual’s desk, and because an intermediary is not required to help the individual use the tool, it is considered “personal.” But many applications go well beyond the individual level (Lehman, 1985; Porter and Gogan, 1988). An Index Group study observed three personal computing “beneficiary domains”:

* Systems that impact the Individual
* Systems that impact the Functional Unit
* Systems that impact the Organization

Each personal computing domain represents a different set of activities and a very different set of managerial and technical issues.

**Personal Computing is not Necessarily “Computing”:** Many microcomputer applications are fundamentally different from the repetitious number “crunching” typically associated with computers. Many users never “compute” at all; they manipulate words and symbols, using word processing packages, expert system shells, presentation graphics, etc. Users tap into external databases such as Dow Jones, LEXIS and Prodigy for legal, corporate, and other categories of textual information. They use their PC as an electronic mail terminal or as a shopping aid.

Sometimes a PC user identifies a new task that would not have been possible or would have been previously unthinkable before the user acquired microcomputer expertise. For example, at a publishing firm a newly computer-literate manager conceived of an idea to sell computer-related books via an electronic bulletin board (McGraw-Hill, 1985), essentially inventing a new marketing channel. In other cases, managers identified new ways of dealing with suppliers or of linking with other functions within the organization.

**Opportunities versus Risks:** Some observers have emphasized the opportunities presented by personal computing. Given a free rein, it is said that users who experiment with their PC’s will identify many opportunities for using information technology. But observers also express concerns about the risks of personal computing: unrestrained, users might make poor decisions because of improperly constructed or documented models or because they are working with inaccurate data. (Alavi and Weiss, 1986; Carman, 1988; Klenk, 1985). Unfortunately, managers cannot simultaneously maximize opportunities and minimize risks. The actions one takes to reduce exposure to risks will tend to inhibit users’ creativity and experimentation (Gogan 1989). Hence, a critical managerial challenge is to achieve a balance between encouraging experimentation and preventing problems.

**Personal Computing Domains**

Personal computing is not necessarily “personal;” a range of activities occur across three separate domains: that of the individual user, the functional group, and the organization. Each domain represents a different set of activities, and

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