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## James P. Ware, Principal

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Information Technology *is* driving organizational change, whether managers or academics want it to or not. The challenge for practitioners is simple to state but extremely difficult to accomplish: how to build a business and an organization that can achieve sustained competitive advantage. This objective means ensuring that IT investments are implemented solely for business purposes -- to enhance productivity, to improve product/market capabilities, or to improve managerial decision making. But it also means that line managers, from the CEO on down, must develop a much deeper understanding of what I/T is doing to organizational forms and practices, what it can do, and how to make the changes both organizationally productive and individually appealing.

New forms of organization and management are emerging today, whether by design or default. IT is making possible much flatter organizations, with characteristics often more like informal, loosely coupled networks than classic bureaucracies. Organizations with rich and extensive IT support appear to operate very differently from traditional models. Horizontal communication is more extensive, more frequent, and more informal. Decisions are reached more quickly, and the organization typically tolerates a wider range of behaviors, decisions, and practices. There is often more emphasis on results, less on forms. These changes, which amount to fundamental culture shifts, are usually subtle, and are frequently unrecognized by senior executives. On rare occasions, the changes are planned and managed. But, more typically, the changes begin evolving in some niche or department within the organization and then meet substantial resistance from entrenched managers, who are unwilling to undergo the personal changes in role, influence, power, and style that must be accomplished if the optimum benefits of the new technologies and new practices are to be fully realized.

We have observed how the impact of technology on organizational practices seems to develop over time through four distinct phases: technological automation, task automation, managerial transformation, and strategic transformation. While there are elements of each phase present in any organization at any one time, there is typically a dominant theme that depends on the organization's level of experience with the new technology. The critical issue, however, is that progression from one level to another is neither simple nor automatic; only when organizations undergo fundamental paradigm shifts do they actually achieve the higher benefits that accompany broader and more fundamental change.

In our research and consulting experience, the major benefits of I/T are achieved only when technological change is introduced in support of business change. While some I/T R&D is of course necessary, the only long-lasting and effective applications of technology that we have seen are those that are clearly and explicitly "packaged" to address defined business problems or opportunities. Most organizations are "stuck" in technology-driven visions that are not producing significant business benefits.

The organizational world of the 21st century will be very different from the one we know today. We face two basic challenges: defining that vision (what is possible, practical, and appropriate); and describing the pathway to get there from here.