SPECIAL FEATURE
Capital-Intensive Software Technology Peter Wegner

7 Introduction
Each section of this four-part article deals with a different aspect of capital-intensive software technology. Together, they present an integrated view of the subject.

12 Part 1: Software Components
Software components are the capital-intensive building blocks from which large programs are constructed.

24 Part 2: Programming in the Large
Reusability is a central concept in life-cycle technology, in system evolution, and in the development of theories and models.

33 Part 3: Knowledge Engineering
In the 1990's, software technology will increasingly emphasize knowledge reusability—by both people and computers.

39 Part 4: Accomplishments and Deficiencies of Ada
Ada is a well-documented attempt to make software technology capital intensive. Its development has taught us a lot, including the fact that we have a great deal more to learn.

43 Conclusion
Periods of rapid technological change require more innovation and greater risks than periods of stability.

ARTICLES
47 Building Quality and Productivity into a Large Software System Edward M. Prell and Alan P. Sheng
The key to developing larger and more complex software systems is to improve the way we manage people and information.

56 Software Renewal: A Case Study Harry M. Sneed
Error-free software in large applications may be possible only by respecifying the original design—and may be affordable only when automatic tools become available.

65 Dynamic Task Scheduling in Hard Real-Time Distributed Systems Krithivasan Ramamritham and John A. Stankovic
This algorithm for scheduling tasks with hard real-time constraints—that is, tasks that must meet their deadlines—works dynamically on loosely coupled distributed systems.

76 Global Naming in Distributed Systems Ronald Curtis and Larry Wittie
This Unix-based global naming system, developed for debugging distributed programs, provides concise notation for accessing networks, tasks, modules, data, and files.

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Reader Service Cards, p. 112A; IEEE-CS Membership Application, p. 64.