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Not Your Ordinary Systems Analysis and Design Textbooks

By Katherine M. Chudoba, McIntire School of Commerce, University of Virginia

Systems analysis and design textbooks typically focus on explaining the phases of the systems development life cycle (SDLC) from the waterfall perspective (analyze, design, code, test, implement). They may also have chapters or sections of chapters that describe various techniques associated with rapid application development (e.g., prototyping, CASE tools, staged delivery), and discuss how the SDLC may differ depending on the type of information system being developed (e.g., transaction processing system vs. expert system).

The two books described below take a somewhat different approach. While neither is as comprehensive as the leading analysis and design textbooks, both are good alternatives because of their "here's what you need to succeed" focus.

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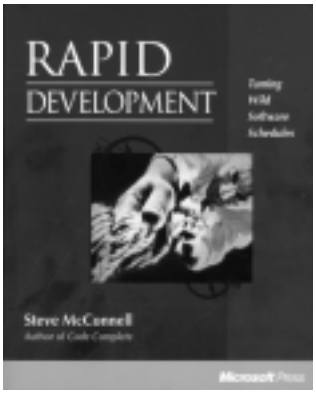


RAPID Development – Taming Wild Software Schedules

Steve McConnell
Microsoft Press, 1996, 647 pages
www.construx.com/stevemcc

RAPID DEVELOPMENT IS an extremely readable text, chock-full of suggestions for shortening the systems development life cycle. McConnell doesn't mince words in his characterization of problems that plague most development projects: "massive cost and schedule overruns; low quality; canceled projects; high turnover; friction between managers, developers, and customers…." But the author then goes on to provide numerous practical and substantive ideas that will help developers and managers overcome these problems. Thought-provoking case studies, usually written from the perspective of the development staff, are found throughout the text and illustrate the challenges of rapid software development. Although written for MIS professionals, the book is certainly appropriate as a text for advanced undergraduate and graduate analysis and design students.

The book is organized into three parts. Part 1, Efficient Development, begins with a description of rapid development and a strategy for altering the way systems are developed. McConnell then summarizes 36 classic mistakes that plague development projects. People-related mistakes include unrealistic expectations, politics placed over substance, adding people to a late project, and friction between developers and customers. Under the category of process-related mistakes, we find abandonment of planning under pressure, premature or overly frequent convergence, insufficient risk management, and planning to catch up later. Examples of product-related mistakes are requirements gold-plating and feature creep, and tech-

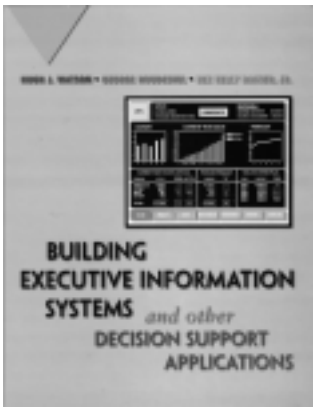
nology-related mistakes include overestimated savings from new tools or methods and lack of automated source-code control. Many traditional analysis and design textbooks include some of these mistakes, but none is as comprehensive as this—likely due to McConnell's extensive personal experience with software development projects.

Once the author describes in full detail all of the problems that can go wrong, he sets about describing how the problems can be avoided or overcome. Part 2 has 11 chapters, each about different aspects of solution effects. For example, Chapter 10 discusses customer-oriented development. Among McConnell's recommendations are to select an appropriate lifecycle model so that the customer receives steady, tangible signs of progress, and to use design practices that allow customers to change their minds occasionally.

Chapter 14 describes feature-set control, or how to manage creeping requirements. One suggestion is "requirements scrubbing." After creating the product specification, review requirements and try to eliminate unnecessary ones, simplify requirements that are more complicated than necessary, and substitute cheaper options when available. Success with this technique depends not only on paring down requirements, but doing so in such a way that users don't insist that the features are reinstated later in the development life cycle.

Part 3 includes a description of 25 best practices in rapid development. Although each of the best practices is discussed in parts 1 and 2 of the book, they are summarized in a quick-reference format that includes the risks of each best practice and its likely impact on schedule reduction.

Overall, RAPID Development is a text designed for those who are interested in a pragmatic description of analysis and design topics. Students will undoubtedly like its "real world" emphasis; however, teachers may want to couple the text with supplemental instruction in process modeling techniques since these are not discussed in the book.



Building Executive Information Systems and Other Decision Support Applications

Hugh J. Watson, George Houdeshel, and Rex Kelly Rainer, Jr.
John Wiley & Sons, 1997, 479 pages
www.wiley.com

AN EXECUTIVE INFORMATION SYSTEM (EIS) is a "computerized system that provides executives with easy access to internal and external information that is relevant to their critical success factors." Since at least the mid-1980's, MIS professionals have recognized the imperative to provide technology support to senior managers, but their challenge has been to develop information systems that are tailored to the special needs and preferences of this unique group of users. To that end, Watson and his colleagues have created a text that can be used by upper division analysis and design classes, or by MIS professionals in search of reference materials on EIS development. The book includes explanatory text and useful diagrams, lots of examples taken from actual EIS development projects, and end-of-chapter questions to help assess students' grasp of the material. Supplementary materials including an instructor's manual, videos, and software are also available.

Building Executive Information Systems has 21 chapters and four appendices that can be grouped into eight topics.

Overview/Framework (Chapters 1 and 2). The first two chapters describe what EIS are and are not, include a summary of the development process, and clarify the unique aspects of developing an EIS.

Executives and Their Information Needs (Chapters 3 and 12). These two chapters help the reader differentiate between the work of executives and that of other employees. Chapter 12 describes "soft information," or information that is "fuzzy, unofficial, intuitive, subjective, nebulous, implied, and vague." This chapter will be especially helpful for students who have relatively little experience in organizations and likely no experience at the executive level. It should also be helpful for technical MIS professionals who tend to deal in absolutes (e.g., a program executes or it doesn't) more frequently than with the less-absolute issues of managing an organization. The authors acknowledge that much is yet to be learned about the phenomenon of soft information so they offer propositions for the reader to consider rather than write as though this chapter is the final authority on the topic.

Getting Started (Chapters 4 and 5). In these chapters, the reader learns about operational issues of beginning an EIS development project, including the critical issue of gaining executive commitment. The authors also clearly describe the responsibilities and requisite skills of the EIS development team, such as respecting but not being intimidated by executives, and an ability to deal with vagueness and moving targets.

Analysis (Chapters 6, 7, 8). Consistent with many other analysis and design textbooks, these chapters include suggestions and techniques for determining system objectives, and requirements for information, hardware, and software. There is a brief discussion of each of the 15 methods that analysts might find useful in gathering requirements for an EIS, such as discussions with executives, participating in strategic planning sessions, determining critical success factors, and instituting a formal change request procedure. A major difference is that the chapters include no discussion of creating process models (e.g., data flow diagrams). This omission is not too surprising given the text's focus on EIS; however, for executives versed in flowcharting and influence diagramming, a draft model might be useful in eliciting some require-

Diagram extracted from cover of Building Executive Information.

ments specifications. As with RAPID Development, the absence of process modeling examples is a limitation for those who want to use the book in a general-purpose analysis and design class.

Design (Chapters 9, 10, 11). These chapters focus on both designing an interface suitable for executive users and designing the data foundation for the EIS. The information on interface design is good, but would be improved with more emphasis on the appropriate use of color in screen design and presentation. Chapter 11 contains useful suggestions for managing the data that supports the EIS. The discussion of data warehousing is especially timely and relevant.

Implementation (Chapters 13, 14, 18, 19). The authors devote quite a bit of time to EIS implementation issues, including overcoming political resistance, managing EIS spread and diffusion, assessing the benefits of an EIS, and keys to success. The information in these chapters provides a thorough examination of the organizational issues that are critical to successful implementation of EIS, and are especially well done. These chapters will be very helpful to MIS professionals, and the executive and operating sponsors involved with an EIS development project.

Related Systems (Chapters 15, 16, 17). In these chapters, the authors describe decision support systems, artificial intelligence with a focus on expert systems, and different examples of groupware, including group support systems and Lotus Notes. Much of the discussion centers on how these systems can be integrated with an EIS.

Examples of EIS and Future Directions (Chapters 20, 21, and Appendices A-D). The last section of the book provides examples of EIS used in the public sector, which complements the examples used throughout the text with their focus on private sector EIS implementations. The appendices include actual examples of proposal materials created early in the development life cycle for an EIS developed at the World Bank.

Overall, *Building Executive Information Systems* is a very practical text for anyone interested in the development and implementation of EIS. The book synthesizes findings from research on EIS conducted by Watson and other colleagues over more than 10 years, and thus is a good example of how researchers can translate their work into a format that's useful for both MIS students and MIS professionals.

Readers with favorite "special" systems analysis and design books of their own are welcome to contact me at **kc7m@virginia.edu**. ■

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Call for Papers: *European Journal of Operational Research*

The *European Journal of Operational Research* will publish a special issue on the theme "Recoverable Product Environments and Systems for Reuse: Integrating Environmental Issues into Decision Making."

Manuscript submissions are encouraged that are either theoretical or empirical, which investigate the following areas: conceptual development of systems to support environmentally conscious manufacturing; decision analysis with respect to reuse options; development of pollution standards; operational level decision-making and system development; financial analysis of green companies' returns, and the design of green supply chain systems. The papers should integrate environmental issues into the decision making process (via quantitative tools, operations research methods or decision analysis) in the various functional areas of an organization. Papers of an empirical (case and survey) nature that examine the environmental decision making process are also encouraged.

The feature issue EJOR, Recoverable Product Environments and Systems for Reuse: Integrating Environmental Issues into Decision Making, will be edited by: Professor W.C. Benton, (benton.1@osu.edu benton.1@osu.edu) The Ohio State University; Professor Rommert Dekker, (rdekker@few.eur.nl) Erasmus University Rotterdam; Professor V. Daniel R. Guide, Jr. (dguide@suffolk.edu), Suffolk University; Professor Rajesh Srivastava (rsrivast@afit.af.mil), The Air Force Institute of Technology and Professor Luk Van Wassenhove (wassenhove@insead.fr), INSEAD. All papers will be reviewed according to the standard EJOR process. Information regarding submissions can be obtained by getting in touch with any of the editors listed above. The deadline for submission is 31 March 1998. ■