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documentation & procedures manual

LARRY E. LONG

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Data Processing Documentation and Procedures Manual

LARRY E. LONG
Lehigh University

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Data Processing Documentation and Procedures Manual

To Nancy

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Preface

From their inception, computer centers follow very similar growth patterns and suffer many of the same growing pains. Virtually every computer center has experienced, or will experience, the consequences of the lack of standardized documentation and procedures. The Data Processing Documentation and Procedures Manual (called "DP Manual" for short) is designed for use by a computer center whose management and personnel have recognized the importance of systems and general computer center documentation and of internal and external DP procedures standardization. The DP Manual is intended to minimize the effort required to develop a standardized documentation and procedures package while maximizing the effectiveness and usefulness of the final product.

Though few corporate officers will admit it, the computer center is becoming, or perhaps already is, the nucleus of corporate operations. As the scope and integration of computer-based information systems increases, so will the corporate dependency on the computer center for a smooth and efficient operation. Unfortunately, because of the inordinate corporate demands, personnel turnover, and lack of standardized DP procedures, computer centers as a whole are not well organized (often through no fault of DP management). Implementation of the DP Manual will help curb inordinate corporate demands by standardizing DP procedures and will ease the pain of the loss of key personnel through the judicious use of documentation.

There exists a myriad of approaches to the development of a DP Manual—this manual illustrates one approach and its final product. The DP Manual is based on a standardized system development methodology, which is presented, in depth, in the manual. The approach used emphasizes two very important aspects of successful computer center operation. First, the user and top management are continually involved as a matter of policy and according to standard procedures. Second, in order to eliminate misunderstandings and numerous subsequent revisions of previous work, all communications and documentation are written according to a comprehensive set of instructions. The manual is not limited to documentation and procedures for systems and programming; it also encompasses all aspects of routine computer center operation.

The approach taken in the preparation of this manual was to make it as ready-to-use as possible. It is 90 to 100 percent ready-to-use depending upon what minor local changes would be required. Many computer centers cannot afford the luxury of dedicating 1 to 3 man-years of effort to the development of a DP documentation and procedures manual (especially when there is no guarantee that the end result will be acceptable). This manual will enable computer center staff to implement a comprehensive set of standardized documentation practices and procedures with a minimum expenditure of time and effort. Implementing the complete DP Manual is not necessary. Using specific forms and/or procedures, or even parts of each, may be helpful.

The implementation of the DP Documentation and Procedures Manual can have a very positive effect on management efficiency. The DP Manual provides an excellent vehicle for project management. It includes project management aids made possible by the standardized methodology and project management procedures. The aids enable management to gather historical data that will aid in future project resource estimation. The basic project management procedures set forth in the DP Manual can be easily automated on an in-house basis. The DP Manual eases the requirement for DP management to direct every activity by detailing each person's responsibilities and tasks. The procedures detailed in the DP Manual dictate that DP efforts be channelled to projects on a priority basis and only when resources become available. As a result of establishing rigorous project initiation procedures, management will probably experience substantial decreases (up to 75 percent) in the number of work requests.

The DP Manual is divided into four parts. Part I, System Documentation and Procedures in the DP Environment, discusses documentation in general and explains how to use the remainder of the manual. Part II, System Development and Implementation, provides a vehicle by which comprehensive system and program documentation can be routinely compiled and maintained for on-line and batch systems, and a set of standard procedures for system development that are intended to improve the programmer–analyst–management interface and the DP–user interface. These procedures should substantially increase the effectiveness of all persons concerned in system development and implementation. Part III, General Computer Center Documentation, contains techniques for documenting computer center hardware, defining the organizational structure and personnel functions, and establishing a comprehensive training and career development program. Finally, Part IV, Hardware and Software Evaluation and Selection, presents a standard procedure, complete with forms and instructions, for the evaluation and selection of computer hardware and software. Parts III and IV address areas of computer center documentation and procedures that traditionally have been overlooked in favor of the

crisis-oriented system development process; however, the importance of these areas is becoming more visible as computer centers become operationally more complex.

Part II, System Development and Implementation, because of its unique format, needs further explanation. The format of Part II is unique within the industry. All user–DP activities and documentation forms are conveniently interrelated via work flow diagrams. This completely integrated approach to systems development provides a master plan by which both users and DP professionals can be proactive, rather than reactive, to each other during system development and implementation. Part II, which is hardware and software independent, contains three types of documentation—intermediate, permanent, and project management. The intermediate documentation is a vehicle by which analysts and programmers can make orderly transitions through the various phases of the system development process. Permanent documentation provides for a comprehensive description of all facets of a given information system. Project management documentation provides the framework for scheduling, control, and evaluation of projects.

Every entry in every form of Part II was carefully studied with respect to usefulness, maintainability, space requirements, responsibility, and redundancy. These entries were screened so that only those that are absolutely necessary are included in the permanent documentation. Where possible, forms are designed in a matrix format, which is easy to complete and use. Those pieces of documentation that are primarily text are completed on a more flexible general purpose form. Each form has instructions that include purpose, assignment of responsibility, and specific instructions for the completion of each entry. Design and maintenance of data base management systems have been incorporated into the procedures and forms of the DP Manual.

Part III, Chapter 8, "Hardware Documentation: Computer, Peripherals, Communications," details a standardized procedure and a methodology for maintaining an up-to-date Hardware Configuration Chart complete with the hardware specifications necessary for hardware selection and interfacing, and for systems analysis and design. Chapter 9, "Structural Organization and Personnel," formally establishes the lines of authority, responsibilities, and duties of all computer center personnel. For the purposes of morale, personnel retention, and maintaining state-of-the-art expertise, each computer center should maintain a training and career development program. Chapter 10, "Training and Career Development," provides an effective and efficient method for establishing and maintaining such a program.

The decision to purchase or lease a particular proprietary software package, a new computer system, or a computer service could have far reaching effects on the corporation. Therefore, these decisions should be based on the

best available information and a rigorous evaluation and selection methodology. Part IV presents an evaluation and selection methodology that ensures that all facets of the decision process are investigated and properly evaluated.

The DP Manual should prove useful to all persons involved in DP management: systems analysts, programmers, data base administrators, users of DP, and people in specialized positions dealing with DP standards, documentation, and procedures. A given computer center could save several man-years of effort by adopting the DP Manual in its entirety. However, if the manual as a whole is not appropriate, each of the above named persons can extract hundreds of ideas, approaches, methods, and/or procedures from the DP Manual. Used in this manner, the DP Manual can still save man-months, perhaps even man-years, of effort.

The DP Manual was written as a professional DP reference manual; however, it is an excellent supplemental text for college/university courses in systems analysis and design. Most texts in this area are usually too general and lack the detail necessary to give the student a good feel for the systems development process. The DP Manual contains a concise, yet complete methodology, which explicitly defines the job functions of the various DP professionals and implicitly defines the "real world" in which the DP professional works. Also, any class projects, systems analysis, and/or programming can be completed utilizing the procedures set forth in the DP Manual. The DP Manual has been tried, and proven effective, in the university classroom.

The successful computer centers of today and tomorrow have or will have DP documentation and procedures manuals of some kind. The need for DP project management, the mobility of DP personnel, the increasing requests from auditors to investigate certain aspects of computer-based information systems, and the complexity of on-line systems development are among the factors that make an internal DP manual an absolute necessity. This DP Manual will be of help in the improvement and/or preparation of such manuals.

Larry E. Long

8064436

Contents

Preface xiii

Part I
SYSTEM DOCUMENTATION AND PROCEDURES IN THE DP ENVIRONMENT

1 Documentation Principles and Practices 3

System and System Development Documentation, *3*
General Computer Center Documentation, *5*
Hardware and Software Evaluation and Selection, *6*

2 Use of the DP Documentation and Procedures Manual in System Development and Implementation 7

Introduction, *7*
Overview of Part II, *7*
Maintenance of DP Manual and System Documentation, *11*
Standardized Position Definitions, *11*
The Information Systems Policy Committee, *13*
Standardized Forms, *14*

3 Condensed Work Flow Diagram of the System Development Process 15

Condensed Work Flow Diagram, *16*

Part II
SYSTEM DEVELOPMENT AND IMPLEMENTATION

4 Phase I—System Initiation and Feasibility Study 19

Work Flow Diagrams—Phase I, *20*
Block Descriptions—Phase I, *22*
Documentation Instructions and Forms—Phase I, *33*
Applications Descriptions—I10, *33*
Definition of Proposed System—I20, *35*
System Design Constraints—I30, *36*
System Reports and Documents—I40, *37*
System Data Files—I50, *40*
System Data Elements—I60, *43*
Present System General Flowchart—I70, *46*
Proposed System General Flowchart—I80, *47*
Scope of System Development—I90, *48*
Glossary of Unique Terms—I100, *49*
Benefits Report—I110, *50*
Cost Report—I120, *51*
Feasibility Study Cover—I130, *55*
System Status Report (SSR)—I140, *57*

5 Phase II—System Analysis, Design, Programming, Conversion, and Implementation 59

Part 1—System Analysis and Design

Work Flow Diagrams—Phase II, Part I, *60*
Block Descriptions, *62*
Documentation Instructions and Forms—Phase II, *74*
Estimated Personnel Requirements—II300, *74*
Personnel Training Requirements—II310, *76*
Work Progress Chart—II320, *77*
Output Reference List—II330, *80*
Output Description—II340, *82*
Data Element Matrix—II350, *85*
Data Element Codes—II360, *88*
Data Base/File Description—II370, *91*
Record Layout—II380, *97*

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Data Base Schema—II390, *100*
Detail System Flowchart—II400, *104*
Decision Table—II410, II420, *106*
Printer Layout—II430, *110*
CRT Layout—II440, *112*
Keypunch Description—II450, *114*
Key-to-Disk Description—II460, *117*
System Controls—II470, *118*
Backup Procedures—II480, *119*
Program Description—II490, *120*

Part 2—Programming

Work Flow Diagram—Phase II, Part 2, *124*
Block Descriptions—Phase II, Part 2, *125*
Documentation Instructions and Forms—Phase II, Part 2, *131*
Program Progress Chart—II500, *131*
Program-File Matrix—II510, *134*
Schema Listing (DDL)—II520, *136*
Subschema Description—II530, *137*
General Program Flowchart—II540, *138*
Detail Program Flowchart—II550, *139*
Program Decision Tables—II560, *140*
Coding Forms—II570, II580, *141*
Run Instructions—II590, *144*

Part 3—Conversion and Implementation

Work Flow Diagrams—Phase II, Part 3, *150*
Block Descriptions—Phase II, Part 3, *151*
Documentation Instructions and Forms—Phase II, Part 3, *157*
Testing Plan—II700, *157*
File Conversion and Parallel Operation Plan—II710, *158*
Operating Schedule—II720, *159*
System Documentation Summary—II730, *160*
System Development Documentation Summary—II740, *162*

6 Phase III—Evaluation and Ongoing Operation 165

Work Flow Diagrams—Phase III, *166*
Block Descriptions—Phase III, *167*
Documentation Instructions and Forms—Phase III, *169*
Postimplementation System Evaluation—III900, *169*

System Review Schedule—III910, *170*
Summary of Periodic System Review—III920, *172*

7 General Reports **173**

Introduction, *173*
Documentation Instructions and Forms—General, *174*
General Purpose Form (GP)—G10, *174*
Flowcharting Form—G20, *176*
Document Revision Log—G30, *178*

Part III
GENERAL COMPUTER CENTER DOCUMENTATION

8 Hardware Documentation: Computer, Peripherals, Communications **183**

Introduction, *183*
Documentation Instructions, *184*
Hardware Configuration Chart—IV10, *184*

9 Structural Organization and Personnel **187**

Introduction, *187*
Documentation Instructions, *188*
Organizational Chart—IV20, *188*
Position Description (PD)—IV30, *191*

10 Training and Career Development **193**

Introduction, *193*
Training Program Implementation, *193*
The Training Matrix, *194*
Documentation Instructions and Forms, *195*
Training Matrix—IV40, *195*

Part IV
HARDWARE AND SOFTWARE EVALUATION AND SELECTION

11 Hardware Evaluation and Selection **205**

Introduction, *205*
The Hardware Selection Committee, *205*
Request for Information, *205*
Request for Proposal, *206*
User Surveys As an Aid to Evaluation, *206*
Evaluation of Responses to the RFP, *207*
Standardized Forms, *207*
Documentation Instructions and Forms, *208*
Request for Information (RFI)—V10, *208*
Request for Proposal—V20, *209*
Hardware/Software Vendor Questionnaire—V30, *213*
System Characteristics—V40, *219*
Cost Summary—V50, *221*
Benchmark Results—V60, *224*
User Survey—V70, *226*
Proposal Evaluation Worksheet—V80, *227*

12 Software Evaluation and Selection **229**

Introduction, *229*
Categories of Commercially Available Proprietary Software, *229*
Sources of Information for Software Selection, *230*
The Request for Information, *230*
Request for Proposal, *230*
User Surveys as an Aid to Evaluation, *231*
Evaluation of Responses to the RFP, *231*

Appendix—Abbreviations Used in the DP Manual **233**

Index **235**

I

System Documentation and Procedures in the DP Environment

1

Documentation Principles and Practices

System and System Development Documentation

Perhaps the single most important ingredient for the ultimate success in an automated data processing environment is strict adherence to sound documentation principles and practices by both user and DP personnel both during system development and after implementation. Certainly construction of an office building would not begin until plans had been drawn and approved by all concerned. And so it is with developing a new computer system. System documentation provides the foundation for the development of the computer system and provides a mechanism to ensure that the system will accomplish the original objectives. After system implementation there is a need to maintain a computer system just as there is a need to perform maintenance on a skyscraper. For efficient maintenance, system documentation is as necessary for a computer system as a blueprint is for a building.

Documentation is often thought of as noncreative by both user and DP personnel alike. It is, and has been in the past (in less sophisticated DP environments), given a very low priority during and after the system development process. Therefore, any documentation compiled at project completion was usually haphazard and incomplete (sometimes causing more harm than good).

In DP, there is always another fire to fight, and too often the emphasis has been on implementation at any cost. System documentation has been brushed over lightly, if at all, and another fire fight begins. An unsuccessful DP shop can operate indefinitely without establishing formal standards for documentation. The Data Processing Documentation and Procedures Manual (the DP Manual) provides a mechanism for insuring that standard procedures, as well as proper documentation principles and practices, are adhered to during the system development process and after system implementation (Part II).

Documentation takes personnel time, and consequently added costs are incurred. However, it should be noted, and often it is not, that the savings in personnel time as a result of proper documentation far exceed the costs over

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