

The book distills the most valuable information on the approach, methodologies, best practices, and frameworks used in the effort to improve any process. The author has taken information that he has used successfully and included it in a convenient volume.

Process Improvement: Understanding a Basic Approach

**Buy The Complete Version of This Book at
Booklocker.com:**

<http://www.booklocker.com/p/books/4052.html?s=pdf>

Process Improvement

Understanding a Basic Approach

Companion Guidebook to:
How to Be an Effective Analyst

By: Marc C. DiGiuseppe

Copyright © 2009 Marc C. DiGiuseppe

ISBN 978-1-60145-742-4

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, recording or otherwise, without the prior written permission of the author.

Printed in the United States of America.

Booklocker.com, Inc.

2009

Table of Contents

ACKNOWLEDGEMENTS	IX
INTRODUCTION.....	1
THE PREMIER CONCEPT OF PROCESS IMPROVEMENT: LEARN TO IDENTIFY WHAT YOU ARE REQUIRED TO CREATE OR IMPROVE.	1
COMMON DEFINITIONS OF SPECIFIC TYPES OF HUMAN ACTION WITHIN BUSINESS PROCESSES	1
PROCESS'	1
What is a Process?.....	1
PROTOCOL'	2
What is a Protocol?	2
PROCEDURE	3
What is a Procedure?	3
UNDERSTANDING THE CONCEPT OF A LIFE CYCLE	4
WHAT THE HELL IS AN SDLC, ANYWAY?	5
HOW IT'S DONE	6
APPLICABILITY.....	6
SDLC OBJECTIVES.....	7
The SDLC Supports the Use of an Integrated Project Team	8
Each Proposed Solution must have a Program Sponsor	8
A Project Manager must be selected for Each Solution	9
A Project Management Plan is required for Each Project	9
Knowledgeable Individuals must be assigned to Perform Key Roles	10
Documentation of Activity Results and Decisions for Each Stage of the Life Cycle.....	10
Each Project Must Undergo Formal Acceptance.....	11
Using "Best Practices" and Industry Standards aids in achieving a successful outcome	11
A System Project may not Proceed until Resources are Secured	11
Each System Project Should Comply with the Company's concept of Enterprise Architecture (EA).	12
GOVERNING PROTOCOL.....	12
THE INITIATION PHASE.....	16
THE BUSINESS CASE.....	16
PROGRAM AUTHORIZATION STAGE	20
THE MANAGEMENT PHASE	20
SOLUTION CONCEPT OF OPERATIONS DEVELOPMENT	21
PLANNING STAGE	21
REQUIREMENTS ANALYSIS STAGE	21
The most important feature of "functional requirements".....	22
DESIGN STAGE.....	22
DEVELOPMENT STAGE	23
INTEGRATION AND TESTING STAGE	23
IMPLEMENTATION STAGE.....	23
THE OPERATIONS PHASE.....	24

OPERATIONS AND MAINTENANCE STAGE	25
DISPOSITION STAGE	25
WORK PRODUCTS	25
CORE DOCUMENTS.....	26
<i>Project Management Plan (PMP)</i>	26
<i>System Security Plan (SSP)</i>	26
<i>Concept of Operations (CONOPS)</i>	26
<i>Acquisition Plan</i>	27
<i>Functional Requirements Document (FRD)</i>	27
<i>System Design Document (SDD)</i>	27
<i>Implementation Plan</i>	27
<i>The Maintenance Manual (and/or User's Guide)</i>	28
<i>The Disposition Plan</i>	28
SYSTEMS ANALYSIS	30
THE STUDY PHASE	30
THE DESIGN PHASE.....	30
THE DEVELOPMENT PHASE.....	31
THE OPERATION PHASE	31
MODERN BUSINESS: A “SYSTEM OF SYSTEMS”	31
WHAT IS A BUSINESS PROCESS?.....	31
DETERMINING THE CLIENT’S ORGANIZATIONAL STRUCTURE.....	33
<i>Steps to complete</i>	34
PRODUCT AND INFORMATION FLOW	34
SOME SUGGESTIONS FOR ORGANIZING EVOLVING INFORMATION.....	35
INFORMATION SYSTEM LEVELS.....	35
FEEDBACK AND CONTROL	37
MANAGEMENT INFORMATION SYSTEM CHARACTERISTICS	38
MANAGEMENT SCIENCE TECHNIQUES	39
STUDY PHASE ACTIVITIES	40
USER NEEDS.....	40
DESIGN PHASE ORGANIZATION	44
DESIGN PHASE ACTIVITIES.....	44
DEVELOPMENT PHASE ORGANIZATION	47
DEVELOPMENT PHASE ACTIVITIES	48
OPERATION PHASE STAGES	51
THE CHANGEOVER CRISIS.....	53
<i>Chaos, the Concept of “Murphy’s Law,” and Defensive Design</i>	54
Murphy’s Law explained	54
The Theory of Chaos.....	55
Defensive Design	56

<i>Understanding the risk of failure</i>	57
DEFINING PROCESS IMPROVEMENT	59
HOW DO YOU DEFINE PROCESS IMPROVEMENT?.....	59
INPUTS, OUTPUTS.....	59
<i>What are inputs and outputs?</i>	59
UNDERSTANDING THE RUDIMENTS.....	60
<i>Variability</i>	60
<i>How to Define a Process</i>	62
UNDERSTANDING THE CLASSIFICATIONS OF BUSINESS PROCESSES	64
PROCESS MODELING	66
THE BUSINESS PROCESS MODELING NOTATION (BPMN)"	68
ELEMENTS	68
<i>Flow objects</i>	69
<i>Connecting objects</i>	70
<i>Swim lanes</i>	71
<i>Artifacts</i>	72
INDUSTRY STANDARDS, BEST PRACTICES, METHODOLOGIES, AND FRAMEWORKS	73
THE FUNDAMENTALS OF USING UNIFIED MODELING LANGUAGE (UML)	78
MODELING IS, CONCEPTUALLY, IMPORTANT TO UNDERSTAND AND EXECUTE	78
<i>Process Analysis is not a boutique discipline</i>	78
WHAT IS UML?	81
USE CASE DIAGRAMS	83
SEQUENCE DIAGRAMS.....	85
COLLABORATION DIAGRAMS	86
CLASS DIAGRAMS	87
RELATIONSHIPS.....	89
MULTIPLICITY AND NAVIGATION.....	90
INHERITANCE.....	91
STATE TRANSITION DIAGRAMS.....	92
COMPONENT DIAGRAMS.....	93
DEPLOYMENT DIAGRAMS.....	94
ADDITIONAL CONSIDERATIONS	96
WHAT IS A “JAD” SESSION?	100
<i>Be Practical</i>	102
IMPORTANT OBJECTIVES	103
WHAT IS A TECHNICAL WRITER?	106
FUNDAMENTALS	112
SETTING THE TONE:	113

COMMUNICATIONS WORKFLOW	117
FEAR OF ADVERSE CONSEQUENCES.....	119
CHOICE OF WORDS	120
SUBJECTIVITY VERSUS OBJECTIVITY	122
THE MECHANICS OF TECHNICAL WRITING	123
REVISION CONTROL	124
ASSESSING THE AUDIENCE.....	125
SELECTING THE FORMAT—ESSENTIAL ELEMENTS OF A TECHNICAL DOCUMENT	125
<i>Table of Contents, List of Figures, List of Tables</i>	126
<i>Summary.....</i>	127
<i>Introduction</i>	127
<i>The Body of the Document.....</i>	127
PREPARE A DOCUMENT DEVELOPMENT SCHEDULE	130
EDITING	131
<i>Levels of Editing</i>	132
The Coordination Edit.....	134
Policy Edit	135
Integrity Edit.....	135
Screening Edit.....	136
Document Clarification Edit	136
Format Edit.....	136
Mechanical Style Edit	137
Language Edit	137
Substantive Edit.....	139
CREATING PROPOSALS.....	139
<i>No-no's.....</i>	142
<i>Lessons Learned</i>	143
INCIDENTALS	144
ILLUSTRATIONS	145
USING JARGON AND ACRONYMS	145
TOO LITTLE OR TO MUCH DETAIL.....	146
DOCUMENTATION MANAGEMENT.....	146
<i>Analysis of Document Families</i>	148
WRAPPING UP	153

List of Figures

Figure 1: The Life Cycle of a Computer-Based Information Management System.....	4
Figure 2: The SDLC Showing Associated Stages.....	14
Figure 3: The SDLC and how it encourages “Enterprise Alignment”	15
Figure 4: The SDLC accommodates an “end-to-end” progression of events in a solution life cycle	19
Figure 5: Information Structures within the command and control context	36
Figure 6: Types of Systems	37
Figure 7: Detail of the Study Phase.....	40
Figure 8: Detail of the Design Phase.....	45
Figure 9: Detail of the Development Phase.....	49
Figure 10: Detail of the Operation Phase	52
Figure 11a: A Photograph of Captain Edward A. Murphy Jr., USAF.....	54
Figure 11b: Colonel John Paul Stapp pictured here strapped into the “Gee Whiz” rocket sled during acceleration tests at Edwards Air Force Base.....	55
Figure 12: Business Process modeling using the Multi-layer Approach	67
Figure 13: Business Process Modeling using UML Event Objects.....	69
Figure 14: Business Process modeling using the UML Activity Objects.....	70
Figure 15: Business Process Modeling using UML Gateway Objects.....	70
Figure 16: Business Process Modeling using UML Connecting Objects.....	71
Figure 17: Business Process Modeling using UML Swim Lanes	71
Figure 18: Business Process modeling using UML Data Objects.....	72
Figure 19: Business Process modeling using UML Group Objects	72
Figure 20: Business Process modeling using UML Annotation Objects	73
Figure 21: Organizational concept showing how frameworks, best practices, methodologies, and standards work together to solve problems.	76
Figure 22: Activity diagram	82
Figure 23: Depicting “Actors”	83
Figure 24: Illustrating the “Use Case”	84
Figure 25: An Example of a Sequence Diagram	85
Figure 26: An Example of a Collaboration Diagram	86
Figure 27: An Example of a Class Diagram.....	87
Figure 28: Combining illustration technique for effect	88
Figure 29: Illustrating “Aggregation”	89
Figure 30: Illustrating “Dependency”	90
Figure 31: Illustrating “Multiplicity”	91
Figure 32: Illustrating “Inheritance”	92
Figure 33: Illustrating “State Transition”	93
Figure 34: Illustrating “Component Diagrams”	94
Figure 35: Illustrating “Deployment Diagrams” Example A	95
Figure 36: Illustrating “Deployment Diagrams” Example B	96
Figure 37: The JAD Session Protocol.....	102
Figure 38: How Communications Barriers work	115
Figure 39: The inverse relationships between severity, risk, and cost.....	126
Figure 40: Create a Schedule for Development.....	131
Figure 41: Standard Proofreader’s Marks.....	133
Figure 42: Microsoft WORD producing a “micro-document” to automate content creation	150
Figure 43: Concept of Operations for a Common Document Management Strategy	152
Figure 44: Documentation Management Library Schema.....	153

List of Tables

Table 1: SDLC Suggested Minimum Document Schedule.....	29
Table 2: The Requirements for Information.....	38
Table 3: Suggested Outline for a Technical Document.....	129
Table 4: Readability Levels.....	141
Table 5: Independent Validation and Verification of Document Family Design Criteria.....	151

Introduction

This document focuses on the “life cycle” concept of creating or re-engineering a business process, protocol, or standard operating procedure. The life cycle of any such approach includes four phases: (1) the study phase, (2) the design phase, (3) the development phase, and (4) the operation phase. Each phase contains information gathering activities, performance specifications, management or user requirements, and documentation. The following sections will help you understand these activities as essential to process creation or improvement. Within this context, formal systems analysis plays a very important part as the premier “tool” of modern process development or improvement.

The Premier Concept of Process Improvement: Learn to identify what you are required to create or improve.

Very often, people who are engaged in the act of identifying the components of some type of business activity are unable to distinguish between the subtle differences in the classifications of “action.” Action, as a human-engineered response to some management or production requirement, can be understood and described in three fundamental ways: as a *process*, as a *protocol*, or as a *standard operating procedure*. These three classifications of human action are not the same. Below, we define the three classifications with standard industry definitions.

Common Definitions of Specific Types of Human Action within business processes

PROCESS^{1,2}

What is a Process?

By definition, a “process” is a collection of interrelated tasks that solve a particular problem or resolve a particular issue. It constitutes a series of changes or functional activities that ultimately bring about some identifiable outcome. In this context, it is often a “collection” of recognizable operations that, when performed as described, result in a particular effect; that is, a well-defined process can produce *repeatable results*.³

proc·ess¹ (prōs'ĕs', prō'sĕs')

n., pl. proc·ess·es (prōs'ĕs'ĕz, prō'sĕs'-, prōs'ĕ-sēz', prō'sĕ-).

¹ Wikipedia, The Free Encyclopedia: Process Theory.

² Webster’s On-line Dictionary: *Process*, also The Free Dictionary by FARLEX.

³ A concept of any ITIL-compliant methodology.

- A series of actions, changes, or functions bringing about a result: the process of digestion; the process of obtaining a driver's license.
- A series of operations performed in the making or treatment of a product: a manufacturing process; leather dyed during the tanning process.
- A **business process** or **business method** is a collection of interrelated tasks, which solve a particular issue.

There are three types of business processes:

- Management processes, the processes that govern the operation of a system. Typical management processes include "Corporate Governance" and "Strategic Management."
- Operational processes, processes that constitute the core business and create the primary value stream. Typical operational processes are Purchasing, Manufacturing, Marketing, and Sales.
- Supporting processes, which support the core processes. Examples include Accounting, Recruitment, and IT-support.

A business process can be decomposed into several subordinate-processes which have their own attributes but also contribute to achieving the goal of the “super-process.” The analysis of business processes typically includes the mapping of processes and subordinate-processes down to the activity level.

PROTOCOL^{4,5}

What is a Protocol?

A “protocol” is a set of rules or conventions that govern *context*—the set of circumstances or facts that surround a particular event, situation, etc. Protocols govern *procedures* and are often subsidiary components of processes narrowing the focus of activity to specific actions and encouraging uniform awareness of the nature of the context. Thus, protocols promote a common understanding from which we can reference the *intent* of activity within the scope of the context.

proto·col (prō'tə-kōl', -kōl', -kōl') *n.*

The forms of ceremony and etiquette observed by diplomats and heads of state.

⁴ Dictionary.com

⁵ American Heritage Dictionary

A code of correct conduct: safety protocols; academic protocol.

The first copy of a treaty or other such document before its ratification.

A preliminary draft or record of a transaction.

The plan for a course of medical treatment or for a scientific experiment.

Computer Science A standard procedure for regulating data transmission between computers.

*Also called **protocol statement**, **protocol sentence**, **protocol proposition**.*

Philosophy: a statement reporting an observation or experience in the most fundamental terms without interpretation: sometimes taken as the basis of empirical verification, as of scientific laws.

PROCEDURE⁶

What is a Procedure?

Again, by definition, a “procedure” is a series of enumerated steps taken to accomplish a specific task or to achieve a particular objective. Procedures are, very often, standardized making their manner of performance predictable and repeatable.⁷ Procedures can stand alone as a set of rules to follow for achieving any specific outcome or they can be incorporated into a *protocol* that governs why, how, and when their execution must be determined necessary and/or appropriate.

pro·ce·dure (prə-sē'jər) *n.*

- a) A manner of proceeding; a way of performing or affecting something: *standard procedure*.
- b) A series of steps taken to accomplish an end: *a medical procedure; evacuation procedures*.
- c) A set of established forms or methods for conducting the affairs of an organized body such as a business, club, or government.
- d) *Computer Science.* A set of instructions that performs a specific task; a subroutine or function.

⁶ Dictionary.com

⁷ As in “ITIL-compliant” procedures.

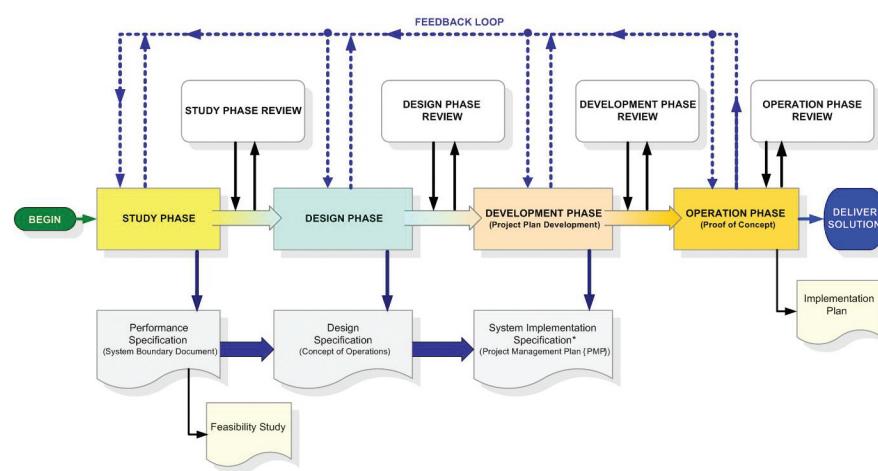
UNDERSTANDING THE CONCEPT OF A LIFE CYCLE⁸

In the context of an Information management system, processes, protocols, and procedures are created by a *dynamic* process that moves through a series of stages or “phases.” The concept of a “life cycle” has evolved, over the years, to describe the relationship between these phases. This concept not only includes *forward* time motion but also the possibility of having to return, or “cycle back”, to the activity previously completed. This “feedback” may occur because of the failure of the system to meet a real-world performance objective, or it may be the result of a user’s “redefinition” of the original system objectives. When such feedback is permitted, the methodology is known to be “agile.”

The key to modifying the life cycle concept for the management of information systems or the development processes within which protocols and procedures may reside is the observation that, while supporting documentation accompanies a “physical” end product throughout its development, documentation often *is* the end-product. This naturally leads to the identification of *four* major phases in the life cycle of a business process as it is developed. As illustrated in Figure 1, they are:

- (1) The Study Phase**
- (2) The Design Phase**
- (3) The Development Phase**
- (4) The Operation Phase**

Figure 1: The Life Cycle of a Computer-Based Information Management System



⁸ Taken from readings of works by Marvin Gore and John Stubbe who originally mapped out the formal analysis process using this method of illustration.

The book distills the most valuable information on the approach, methodologies, best practices, and frameworks used in the effort to improve any process. The author has taken information that he has used successfully and included it in a convenient volume.

Process Improvement: Understanding a Basic Approach

**Buy The Complete Version of This Book at
Booklocker.com:**

<http://www.booklocker.com/p/books/4052.html?s=pdf>