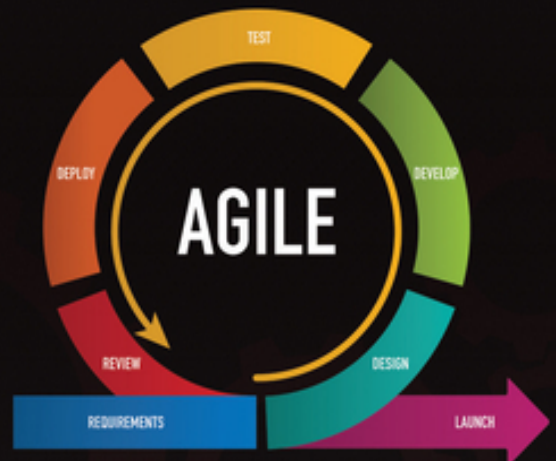
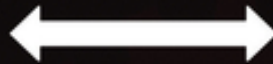
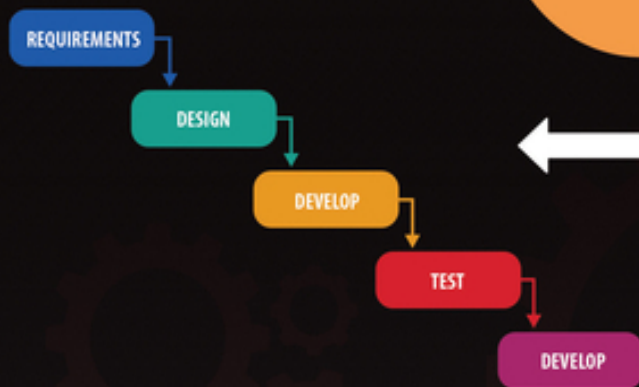


Hybrid Project Management

Cynthia Snyder Dionisio

WATERFALL



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Table of Contents

[Cover](#)

[Title Page](#)

[Copyright](#)

[Acknowledgments](#)

[Introduction](#)

[1 Introducing Project Management](#)

[THE SPECTRUM OF DEVELOPMENT
APPROACHES](#)

[HYBRID PROJECT MANAGEMENT AND
DEVELOPMENT APPROACHES](#)

[SUMMARY](#)

[2 Choosing a Development Approach](#)

[PRODUCT VARIABLES](#)

[PROJECT VARIABLES](#)

[ORGANIZATION VARIABLES](#)

[DEVELOPMENT APPROACH EVALUATION TOOL](#)

[CREATING A VISUAL DISPLAY OF THE
VARIABLES](#)

[SUMMARY](#)

[3 Project Roles](#)

[PROJECT SPONSOR](#)

[PROJECT MANAGER](#)

[PRODUCT OWNER](#)

[SCRUM MASTER](#)

[THE TEAM](#)

[HYBRID OPTIONS](#)

SUMMARY

4 Launching a Hybrid Project

VISION STATEMENTS

PROJECT VISION STATEMENTS

PROJECT CHARTER

CASE STUDY

ASSUMPTIONS AND CONSTRAINTS

SUMMARY

NOTE

5 Hybrid Project Planning and Structure

PLANNING FUNDAMENTALS

THE PROJECT MANAGEMENT PLAN

PROJECT LIFE CYCLES

KEY REVIEWS

PROJECT MANAGEMENT PLAN FOR A HYBRID PROJECT

ROADMAP

SUMMARY

6 Defining Scope in Hybrid Projects

PLANNING FOR SCOPE WITH A SCOPE MANAGEMENT PLAN

ELABORATING SCOPE WITH A SCOPE STATEMENT

ORGANIZING SCOPE WITH A WORK BREAKDOWN STRUCTURE

GETTING INTO THE DETAIL WITH A WBS DICTIONARY

WORKING WITH REQUIREMENTS

PRIORITIZING SCOPE WITH A BACKLOG

SUMMARY

7 Building a Predictive Schedule

ORGANIZING WITH A SCHEDULE MANAGEMENT PLAN

PREDICTIVE SCHEDULING

SUMMARY

8 Analyzing and Finalizing a Predictive Schedule

ANALYZING THE SCHEDULE

FINALIZING THE SCHEDULE

SUMMARY

9 Adaptive and Hybrid Scheduling

ADAPTIVE SCHEDULING

HYBRID SCHEDULING

SUMMARY

10 Estimating

ESTIMATING RANGES

ESTIMATING METHODS

ESTIMATING THE BUDGET

SUMMARY

11 Stakeholder Engagement

IDENTIFYING YOUR STAKEHOLDERS

ANALYZING STAKEHOLDERS

STAKEHOLDER REGISTER

PLANNING FOR SUCCESSFUL ENGAGEMENT

PLANNING PROJECT COMMUNICATION

STAKEHOLDER COMMUNICATION PLAN

SUMMARY

12 Maintaining Stakeholder Engagement

ENGAGING STAKEHOLDERS
COMMUNICATION COMPETENCE
PROJECT MEETINGS
SUMMARY

13 Leadership in a Hybrid Environment

EMOTIONAL INTELLIGENCE
MOTIVATORS
AGILE LEADERSHIP PRACTICES
DEVELOPING A HIGH-PERFORMING TEAM
SUMMARY

14 Planning for Risk

INTRODUCTION TO RISK MANAGEMENT
RISK TOLERANCE AND THRESHOLDS
RISK MANAGEMENT PLAN
SUMMARY

15 Identifying and Prioritizing Risk

IDENTIFYING RISKS
ANALYZING AND PRIORITIZING RISKS
SIMPLE QUANTITATIVE ANALYSIS METHODS
SUMMARY

16 Reducing Risk

RISK RESPONSES
IMPLEMENTING RESPONSES
RISK-ADJUSTED BACKLOG
RESERVE
SUMMARY

17 Leading the Team

ESTABLISHING A HEALTHY ENVIRONMENT

WAYS OF THINKING

SUPPORTING THE TEAM

CONSIDERATIONS FOR VIRTUAL TEAMS

SUMMARY

18 Maintaining Momentum

WORKING WITH CHANGE

MANAGING CHANGE IN A HYBRID

ENVIRONMENT

HELPFUL TOOLS

SUMMARY

19 Metrics for Predictive Deliverables

PREDICTIVE MEASURES

EARNED VALUE MANAGEMENT

FORECASTS

SUMMARY

20 Metrics for Adaptive Deliverables

ADAPTIVE MEASURES

CUMULATIVE FLOW DIAGRAMS

STAKEHOLDER MEASURES

SUMMARY

21 Reporting for Hybrid Projects

REPORTING

VISUAL REPORTS

INFORMATION RADIATORS

HYBRID DASHBOARDS

SUMMARY

22 Corrective Actions and Closure

PREVENTIVE AND CORRECTIVE ACTIONS

[PROJECT CLOSURE](#)

[SUMMARY](#)

[23 Making the Move to a Hybrid Environment](#)

[ESTABLISH CRITERIA](#)

[ESTABLISH THE RIGHT ENVIRONMENT](#)

[PROCESS FIRST](#)

[Glossary](#)

[Index](#)

[End User License Agreement](#)

List of Tables

Chapter 4

[TABLE 4-1 Project Charter Elements](#)

[TABLE 4-2 Dionysus Winery Assumption Log](#)

Chapter 5

[TABLE 5-1 Subsidiary Plans](#)

[TABLE 5-2 Life Cycle Phases for Publishing a Book](#)

[TABLE 5-3 Development Approaches for Dionysus Winery Project](#)

[TABLE 5-4 Life Cycle Phases for Dionysus Winery](#)

Chapter 6

[TABLE 6-1 Grand Opening Decision Analysis](#)

Chapter 7

[TABLE 7-1 Schedule Management Plan Contents](#)

[TABLE 7-2 Scheduling Abbreviations](#)

[TABLE 7-3 Resource Chart](#)

[TABLE 7-4 Responsibility Assignment Matrix](#)

Chapter 10

[TABLE 10-1 Estimating Methods](#)

[TABLE 10-2 Analogous Estimate Part 1](#)

[TABLE 10-3 Analogous Estimate Part 2](#)

[TABLE 10-4 Budget Worksheet for the Foundation](#)

Chapter 11

[TABLE 11-1 Stakeholder Register](#)

[TABLE 11-2 Formal and Informal Communication](#)

[TABLE 11-3 Stakeholder Communication Plan](#)

Chapter 13

[TABLE 13-1 Sample Motivation Techniques](#)

Chapter 15

[TABLE 15-1 Dionysus Winery Risk Statements and Comments](#)

[TABLE 15-2 Dionysus Winery Probability and Impact Analysis](#)

[TABLE 15-3 Chart with Probability, Impact, and Urgency](#)

[TABLE 15-4 Expected Monetary Value Setup](#)

[TABLE 15-5 Expected Monetary Value Path Calculation](#)

Chapter 16

[TABLE 16-1 Dionysus Winery Risk Register with Responses](#)

[TABLE 16-2 Calculating Risk-Adjusted Estimates—Step 1](#)

[TABLE 16-3 Calculating Risk-Adjusted Estimates—
Step 2](#)

[TABLE 16-4 Calculating Risk-Adjusted Estimates—
Step 4](#)

Chapter 17

[TABLE 17-1 Conflict Resolution Techniques](#)

Chapter 18

[TABLE 18-1 Change Management Plan Contents](#)

[TABLE 18-2 Change Log](#)

[TABLE 18-3 Requirements Traceability Matrix.](#)

[TABLE 18-4 Decision Log](#)

[TABLE 18-5 Issue Log](#)

[TABLE 18-6 Impediment Log](#)

Chapter 19

[TABLE 19-1 Schedule Status Table](#)

[TABLE 19-2 Material Variances](#)

[TABLE 19-3 Labor Variances](#)

[TABLE 19-4 Dionysus Winery Cost Estimates](#)

[TABLE 19-5 Performance Measurement Baseline
Table](#)

Chapter 20

[TABLE 20-1 Burndown Chart Table](#)

[TABLE 20-2 Burnup Chart Table](#)

[TABLE 20-3 Initial Cumulative Flow Diagram Table](#)

[TABLE 20-4 Week 4 Cumulative Flow Diagram
Table](#)

Chapter 21

[TABLE 21-1 Status Report](#)

[TABLE 21-2 Earned Value Analysis Report](#)

[TABLE 21-3 Stoplight Chart](#)

[TABLE 21-4 Chart Summary](#)

Chapter 22

[TABLE 22-1 Final Project Report](#)

List of Illustrations

Chapter 1

[FIGURE 1-1 Development approach.](#)

[FIGURE 1-2 Waterfall approach.](#)

[FIGURE 1-3 Iterative approach.](#)

[FIGURE 1-4 Incremental approach.](#)

[FIGURE 1-5 Agile approach.](#)

[FIGURE 1-6 Hybrid approach 1.](#)

[FIGURE 1-7 Hybrid approach 2.](#)

Chapter 2

[FIGURE 2-1 Radar chart.](#)

Chapter 3

[FIGURE 3-1 T-shaped people.](#)

[FIGURE 3-2 I-shaped people.](#)

Chapter 5

[FIGURE 5-1 Construction project sample life cycle.](#)

[FIGURE 5-2 R&D project sample life cycle.](#)

[FIGURE 5-3 Dionysus Winery life cycle phases.](#)

[FIGURE 5-4 Dionysus Winery roadmap.](#)

Chapter 6

[FIGURE 6-1 Dionysus Winery WBS.](#)

[FIGURE 6-2 WBS dictionary template.](#)

[FIGURE 6-3 Mind map for the Winery Management System.](#)

[FIGURE 6-4 Affinity diagram for the Winery Management System.](#)

[FIGURE 6-5 Requirement card.](#)

[FIGURE 6-6 Winery management system backlog.](#)

Chapter 7

[FIGURE 7-1 Network diagram with sticky notes.](#)

[FIGURE 7-2 Network diagram in software.](#)

[FIGURE 7-3 Resource breakdown structure.](#)

[FIGURE 7-4 Resource histogram with resource needs by skill level.](#)

[FIGURE 7-5 Resource histogram with resource needs by month.](#)

Chapter 8

[FIGURE 8-1 Network diagram view of convergence and divergence.](#)

[FIGURE 8-2 Gantt chart view of convergence and divergence.](#)

[FIGURE 8-3 Leveling resources.](#)

[FIGURE 8-4 Leveling hours.](#)

[FIGURE 8-5 Network diagram view of total float and free float.](#)

[FIGURE 8-6 Gantt chart view of total float and free float.](#)

[FIGURE 8-7 Gantt chart with buffers.](#)

Chapter 9

[FIGURE 9-1 Dionysus Winery system development release plan.](#)

[FIGURE 9-2 Winery system development iteration plan.](#)

[FIGURE 9-3 Sample task board.](#)

[FIGURE 9-4 Predictive schedule with releases.](#)

[FIGURE 9-5 Predictive schedule with adaptive schedule inserted.](#)

Chapter 10

[FIGURE 10-1 Range estimates over time.](#)

[FIGURE 10-2 Prioritized backlog for release 1.](#)

[FIGURE 10-3 Updated release 1 plan.](#)

[FIGURE 10-4 Wideband Delphi with outlier.](#)

[FIGURE 10-5 Wideband Delphi with rough consensus.](#)

[FIGURE 10-6 Foundation work package network diagram.](#)

[FIGURE 10-7 Budget chart for the foundation.](#)

Chapter 11

[FIGURE 11-1 Power/support grid.](#)

[FIGURE 11-2 Power/support 2 x 3 matrix.](#)

[FIGURE 11-3 Stakeholder cube.](#)

Chapter 12

[FIGURE 12-1 Four Ls retrospective board.](#)

[FIGURE 12-2 Starfish retrospective board.](#)

Chapter 13

[FIGURE 13-1 Team charter.](#)

Chapter 14

[FIGURE 14-1 Sample probability and impact matrix.](#)

[FIGURE 14-2 Risk averse probability and impact matrix.](#)

Chapter 15

[FIGURE 15-1 Probability and impact matrix for performance threats.](#)

[FIGURE 15-2 Bubble chart with probability, impact, and urgency.](#)

[FIGURE 15-3 Decision tree.](#)

Chapter 16

[FIGURE 16-1 Risk-adjusted backlog.](#)

[FIGURE 16-2 Calculating risk-adjusted estimates—step 3.](#)

Chapter 17

[FIGURE 17-1 Thinking as usual.](#)

[FIGURE 17-2 Being a critical thinker.](#)

[FIGURE 17-3 Problem-solving process.](#)

Chapter 19

[FIGURE 19-1 Schedule status Gantt chart.](#)

[FIGURE 19-2 Dionysus Winery WBS.](#)

[FIGURE 19-3 Performance measurement baseline chart.](#)

[FIGURE 19-4 EVM Measures as of August 31.](#)

Chapter 20

[FIGURE 20-1 Burndown chart.](#)

[FIGURE 20-2 Burnup chart with change in scope.](#)

[FIGURE 20-3 Velocity Chart.](#)

[FIGURE 20-4 Cumulative flow diagram for the wine club website.](#)

[FIGURE 20-5 Cumulative flow diagram with annotations.](#)

[FIGURE 20-6 Initial Task Board.](#)

[FIGURE 20-7 Task board at week 4.](#)

[FIGURE 20-8 Initial Wine Club Member Website Cumulative Flow Diagram Week 4....](#)

[FIGURE 20-9 Updated Wine Club Member Website Cumulative Flow Diagram Week 4....](#)

[FIGURE 20-10 Mood chart.](#)

Chapter 21

[FIGURE 21-1 Sample dashboard.](#)

[FIGURE 21-2 Schedule dashboard.](#)

[FIGURE 21-3 Line chart.](#)

[FIGURE 21-4 Earned value management line chart.](#)

[FIGURE 21-5 Stacked area chart.](#)

[FIGURE 21-6 Clustered bar chart.](#)

[FIGURE 21-7 Stacked bar chart.](#)

[FIGURE 21-8 100% stacked bar chart.](#)

[FIGURE 21-9 Gauges.](#)

[FIGURE 21-10 Scatter diagram.](#)

[FIGURE 21-11 Bubble Chart.](#)

[FIGURE 21-12 Pie Chart.](#)

[FIGURE 21-13 Radar chart.](#)

[FIGURE 21-14 Sample Agile Information Radiators.](#)

HYBRID PROJECT MANAGEMENT

Cynthia Snyder Dionisio

WILEY

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Introduction

Project managers make progress, change, new ideas, new technologies, and breakthroughs possible. We are a part of every profession and have proven our value through our leadership, ingenuity, courage, and discipline. We have been delivering value to organizations, governments, military, and nonprofits since before there was a profession called project management.

In the 1980s and 1990s project management was primarily linear and process driven. There was a heavy emphasis on planning, managing, and controlling project work. We were process driven and documentation heavy. Staying true to the plan, limiting scope changes, and adhering to baselines were the primary means by which we executed and controlled our projects. This approach has come to be known as a waterfall approach because we managed our projects one phase at a time in a linear fashion.

By the late 1990s it was becoming clear that this approach worked in some situations, such as building a bridge, but was a recipe for failure in other situations, such as developing software. In 2001 a group of 17 software developers met at a mountain resort and came up with a new approach that was based on four values and 12 principles. They recorded the values and principles in a document called the Agile Manifesto.

The Agile Manifesto moved away from heavy up-front planning and embraced evolving scope, collaborative working relationships, and servant leadership. The practices, mindset, and overall approach to creating deliverables was 180 degrees from the waterfall methods.

As with most new approaches, some people embraced the practices and mindsets wholeheartedly. In fact, some practitioners became rather evangelical about the Agile mindset and were termed Agilistas. Other practitioners were more along the lines of “Agile in name only.” In other words, they used the Agile terminology but did not fully embrace the mindset. Today the majority of the Agile practitioners conform to Agile practices but perhaps aren't as fanatical about their implementation as the Agilistas.

Twenty years after the Agile Manifesto was first developed, there are many practitioners who find value in the waterfall approach and the Agile approach. These practitioners recognize there are many variables that determine which method to use and that there is rarely a need to be on one end of the spectrum or another. They see significant value in embracing both approaches, using waterfall techniques for some deliverables and Agile techniques for other deliverables. We call this “hybrid project management.”

Hybrid project management is about being flexible enough to assess the project, deliverables, environment, and stakeholders to determine the best means to achieve the intended outcomes. Many hybrid projects use a waterfall framework at a high level and apply Agile approaches to specific deliverables as appropriate. It is my opinion that while the servant leadership practice that is a hallmark of Agile is not fully utilized in all hybrid projects, the practice of engagement, collaboration, and facilitation is more prevalent than the command-and-control perspective that was common in the 1980s and 1990s. Thus, we see the industry moving away from the far ends of the project management spectrum and more toward a practice that is inclusive of the best practices from each approach.

This book is intended to present a variety of ways to deliver projects. Whether you are a new practitioner or someone

with decades of experience, it is my hope that you will find some new ways of practicing our discipline and discover some new techniques you can apply on your projects.

1

Introducing Project Management

As professional project managers it is no longer enough to deliver results that conform to requirements and are on time and on budget. Our role in driving change and transformation, developing new products and updating existing products, creating new technologies and finding ever-better ways of doing things has evolved. Now we need to be more business savvy, market responsive, and aware of how our profession is changing and progressing.

Value: Something of worth or importance.

Deliverable: A component or subcomponent of a product or service. A deliverable can be stand alone, or part of a larger deliverable.

One of the most significant changes in our profession is the recognition that as professionals we must understand and embrace different ways of delivering value. After all, the whole purpose of projects is to bring value to stakeholders, whether that value is via a new product, a new service, or more efficient processes. Different project deliverables require different approaches and techniques. To excel in our role, we need to know our options for delivering value and understand the variables that determine the best fit for each deliverable.

In this chapter we will describe four ways of creating deliverables and define terms associated with each approach. Next, we will identify the variables you need to consider in order to select the best development approach for each deliverable in your project.

THE SPECTRUM OF DEVELOPMENT APPROACHES

A development approach refers to how the project team creates and evolves deliverables. Some development approaches emphasize understanding all the requirements before designing a solution and then creating the deliverables based on the solution design. Other development approaches start with a bare-bones deliverable and evolve the solution based on feedback. They are different approaches to creating project deliverables.

Development approach: The means by which the project team will create and evolve deliverables.

Warning! A development approach is not a life cycle. We will cover life cycles in [Chapter 5](#).

In this chapter we will describe four development approaches:

- Waterfall;
- Incremental;
- Iterative; and
- Agile.

A waterfall development approach is what we call predictive. In other words, we like to be able to predict the schedule and budget based on stable scope. Incremental, iterative, and Agile development approaches are adaptive, which means they are flexible enough to allow changes in requirements and scope.

Adaptive: An approach for creating deliverables that allows for uncertain or changing requirements.

Predictive: An approach for creating deliverables that seeks to define the scope, schedule, and budget toward the beginning of the project and minimize change throughout the project.

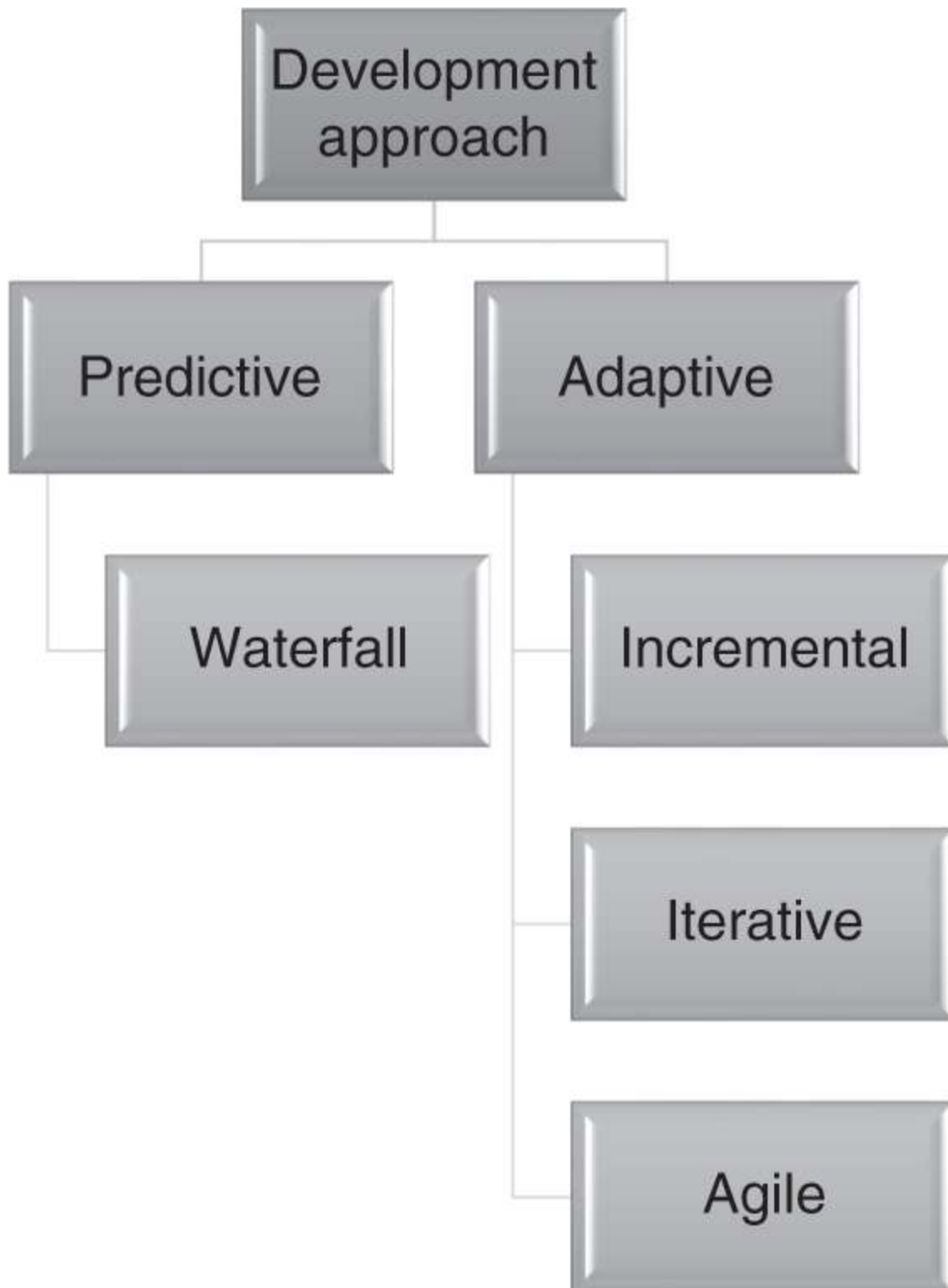


FIGURE 1-1 Development approach.

Waterfall

A waterfall development approach is predictive in nature. In other words, it starts with well-defined scope, which the project team then progressively elaborates into greater levels of detail. The work is then sequenced, duration and cost estimates are developed, and eventually a baseline is set. Throughout the project, progress will be measured against the baselines. With a waterfall approach the project manager endeavors to keep change to a minimum and follow the project plan.

Waterfall: A predictive approach for creating deliverables that follows a linear pattern of completing one phase of work before starting the next one.

[Figure 1-2](#) shows a life cycle for a light rail project that would use a waterfall approach. You can see how one phase completes before the next one begins, and the shape of the graphic looks like a waterfall. In the Environmental Impact Analysis phase, studies on expected site impact, materials analysis, geological surveys, life cycle assessment, and similar work would be conducted. In the Plan phase, detailed resource, budget, schedule, communication, risk, and other plans would be developed. At the end of the Plan phase those plans would be baselined. The Engineering phase would be comprised of blueprints, architecture, modeling, and other similar work to ensure the designs meet the needs, are compliant with regulatory requirements, and are minimally disruptive to the environment. The Construction phase is where all the physical work is carried out. It is the most visible, uses the most budget, and likely takes the longest. Progress in the Engineering and Construction phases would be compared to the baselined plans to ensure the project stays on schedule and on budget.

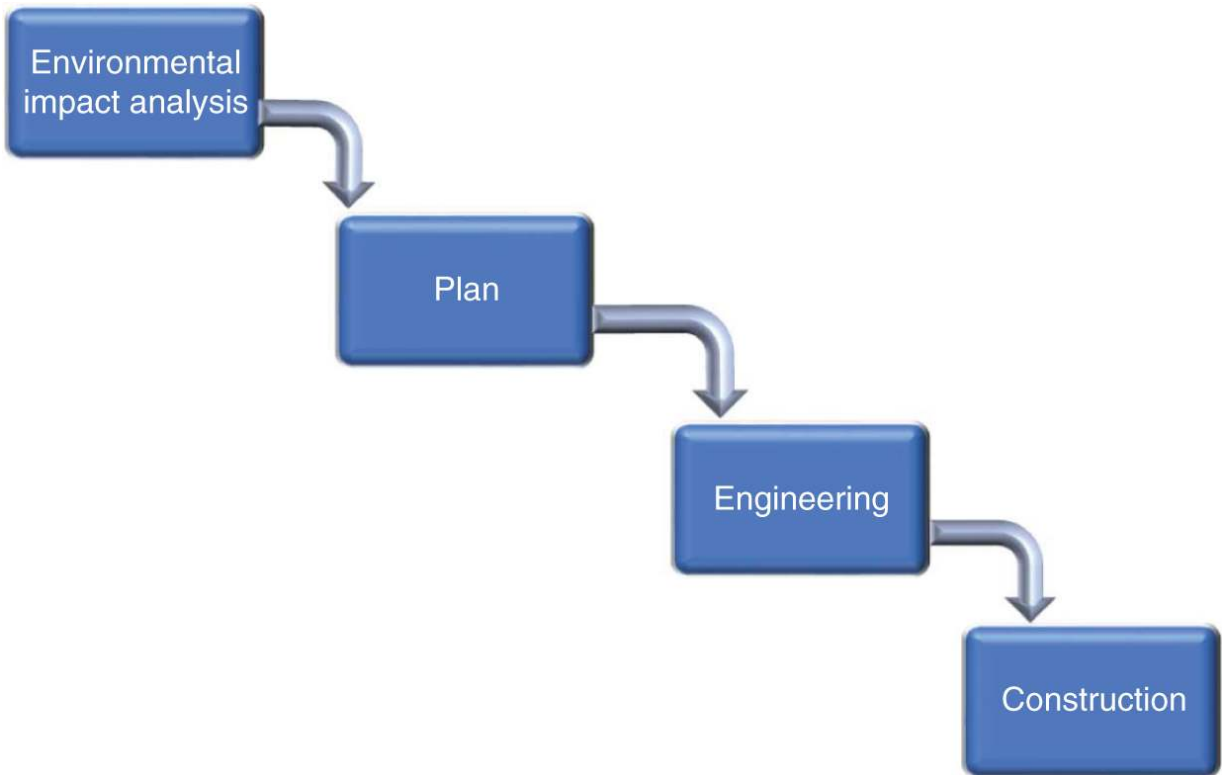


FIGURE 1-2 Waterfall approach.

A waterfall approach is best when the requirements can be defined up front and when the scope of the project is not expected to change. This approach is often used for projects with large budgets, where detailed planning can help reduce uncertainty and risks. Projects that have high-risk deliverables or have significant regulatory oversight are also a good fit for a waterfall approach.

Types of projects that use a waterfall approach include:

- Construction;
- Defense projects such as building a new aircraft, ship, or tank;
- Medical devices; and
- Infrastructure including roads, bridges, or mass transit.

Iterative

An iterative approach is adaptive in nature. It is used when there is a high-level understanding of the desired outcome, but the best way to achieve that outcome is not defined. The project team uses a series of iterations to get clarity on the best method to deliver results.

Iterative: An adaptive development approach that begins with delivering something simple and then adapts based on input and feedback.

Iteration: A brief, set time interval in a project where the team performs work. Also known as a timebox or sprint.

An iterative approach could be used for designing a new multipurpose bicycle. It might start with an idea on a drawing board that can be shown to key stakeholders for feedback. Once the stakeholders are happy with the design, the team may use cheap materials to build a cheap frame mock-up that people can look at and sit on to provide more feedback. Once the frame shape is settled, the next iterations can focus on finding the right materials. The right materials affect the ride, price, weight, handling, and expected life span.

When the frame size and materials are decided on, the team can conduct iterations to determine the best gears, brakes, and other componentry. Only when the team has incorporated all the relevant feedback will they finalize the design, materials, and specifications so they can go into production.

[Figure 1-3](#) shows a generic example of an iterative approach. Notice that each iteration provides information to the next iteration. The number of iterations depends on the feedback and when the decision makers agree that the final iteration will meet the objectives of the project.

Concept

