University of Mosul

College of Computer Sciences and Mathematics

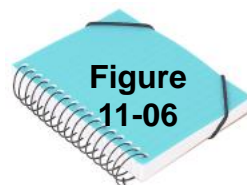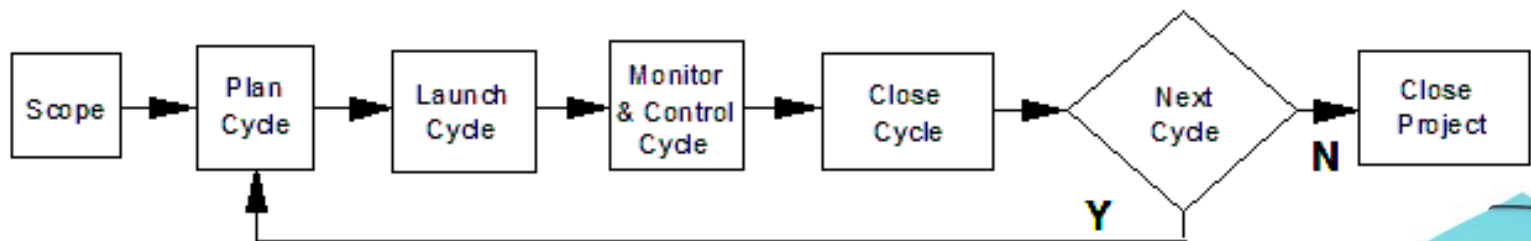## Department of Computer Science

Software Project Management

Agile Project Management

Adaptive Project Management Life Cycle Model

Definition

- Adaptive PMLC Models are those that proceed from iteration to iteration based on very limited specification of solution. Each iteration learns from the proceeding ones and redirects the next iteration in an attempt to converge on an acceptable solution. At the discretion of the client an iteration may release a partial solution.

Adaptive

Scope → Plan Cycle → Launch Cycle → Monitor & Control Cycle → Close Cycle → Next Cycle
- Next Cycle → N → Close Project
- Next Cycle → Y → (back to Plan Cycle)

Figure 11-06
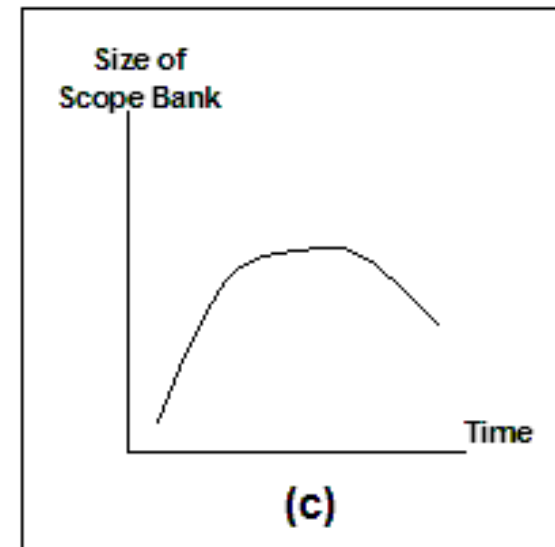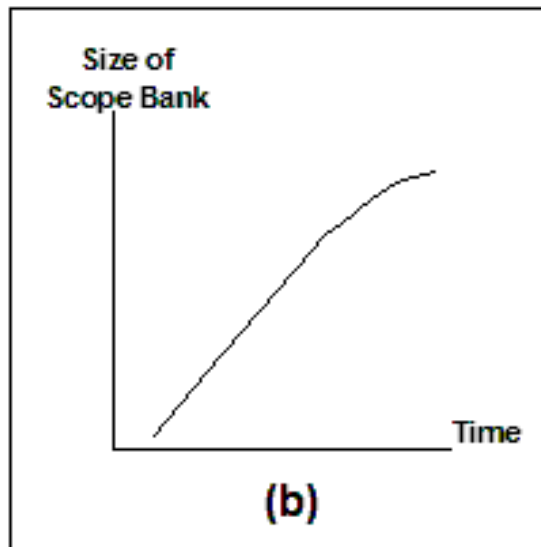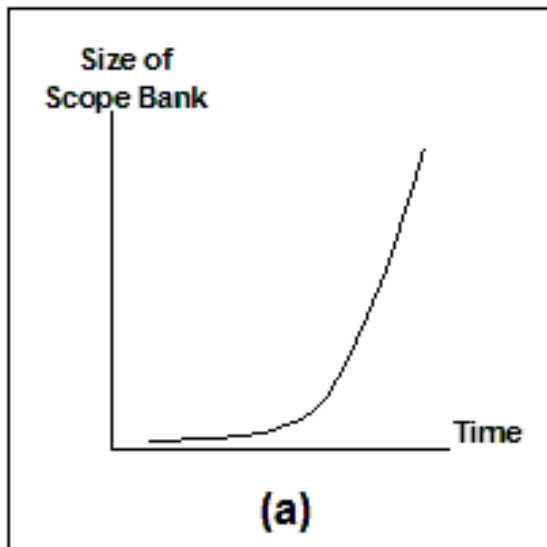
Adaptive PMLC Model

- Scope Phase
  - Sets the boundaries and high-level parameters for the project
  - Specify number of cycles and cycle length
  - Tentatively map out cycle objectives
- Plan Phase
  - Uses the Planning Process Group tools, templates and processes for the coming cycle functionality
- Launch Phase
  - Same as Iterative PMLC Model
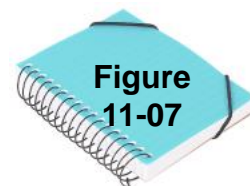 - Establish sub-teams to work on concurrent swim lanes

Adaptive

Adaptive PMLC Model

➤ Monitor & Control Phase

Adaptive

Figure 11-07

➤ Close Phase

Adaptive PMLC Model

Characteristics
- ➤ Iterative structure
- ➤ Just-in-time planning
- ➤ Critical mission projects
- ➤ Thrives on change by learning and discover

Adaptive

Adaptive PMLC Model

Strengths

- ➢ Does not waste time on non-value added work
- ➢ Avoids all management issues processing scope change requests
- ➢ Does not waste time planning uncertainty
- ➢ Provides maximum business value within the given time and cost constraints

Adaptive

Adaptive PMLC Model

Weaknesses

- Must have meaningful client involvement
- Cannot identify exactly what will be delivered at the end of the project

Adaptive

Adaptive PMLC Model

Types of Adaptive PMLC Models

➢ Adaptive Software Development (ASD)

➢ Adaptive Project Framework (APF)

➢ Dynamic Systems Development Method (DSDM)

➢ Scrum

Adaptive

Adaptive PMLC Model

Adaptive Software Development (ASD)
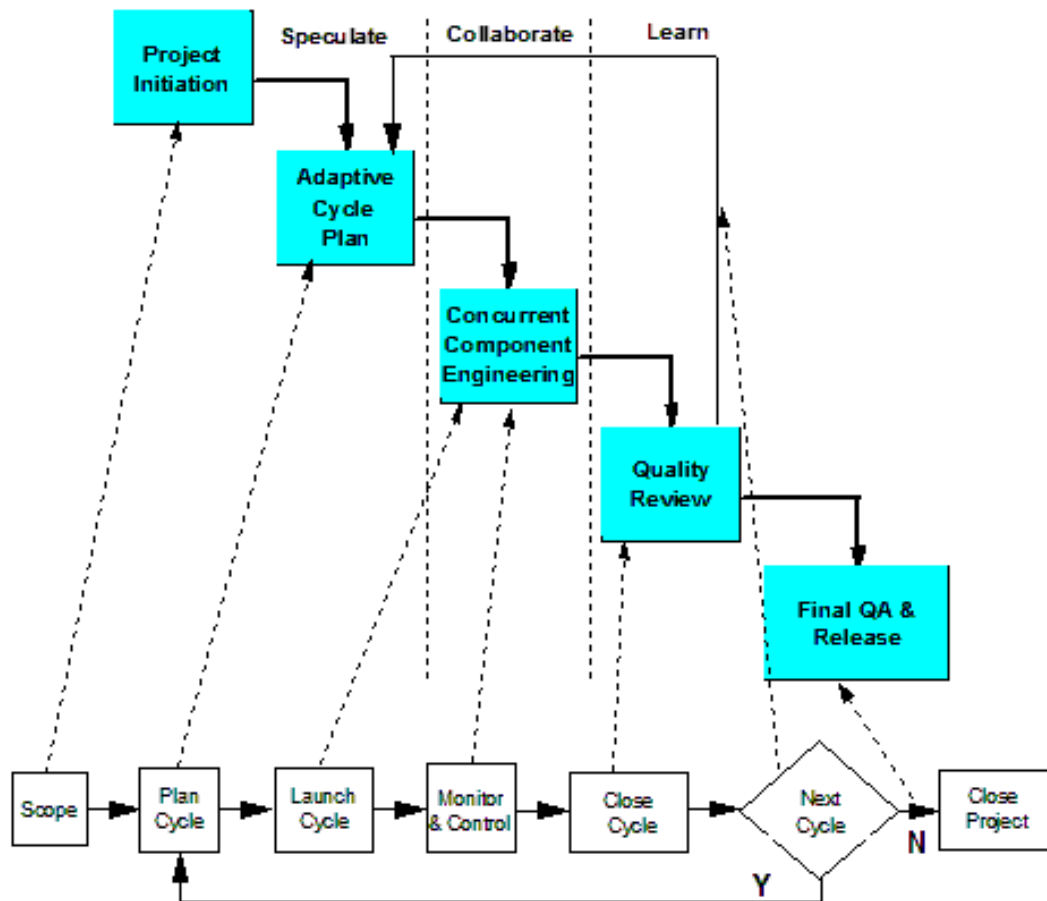
Adaptive

Figure 11-08
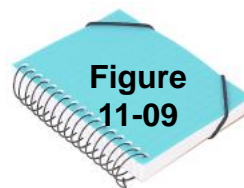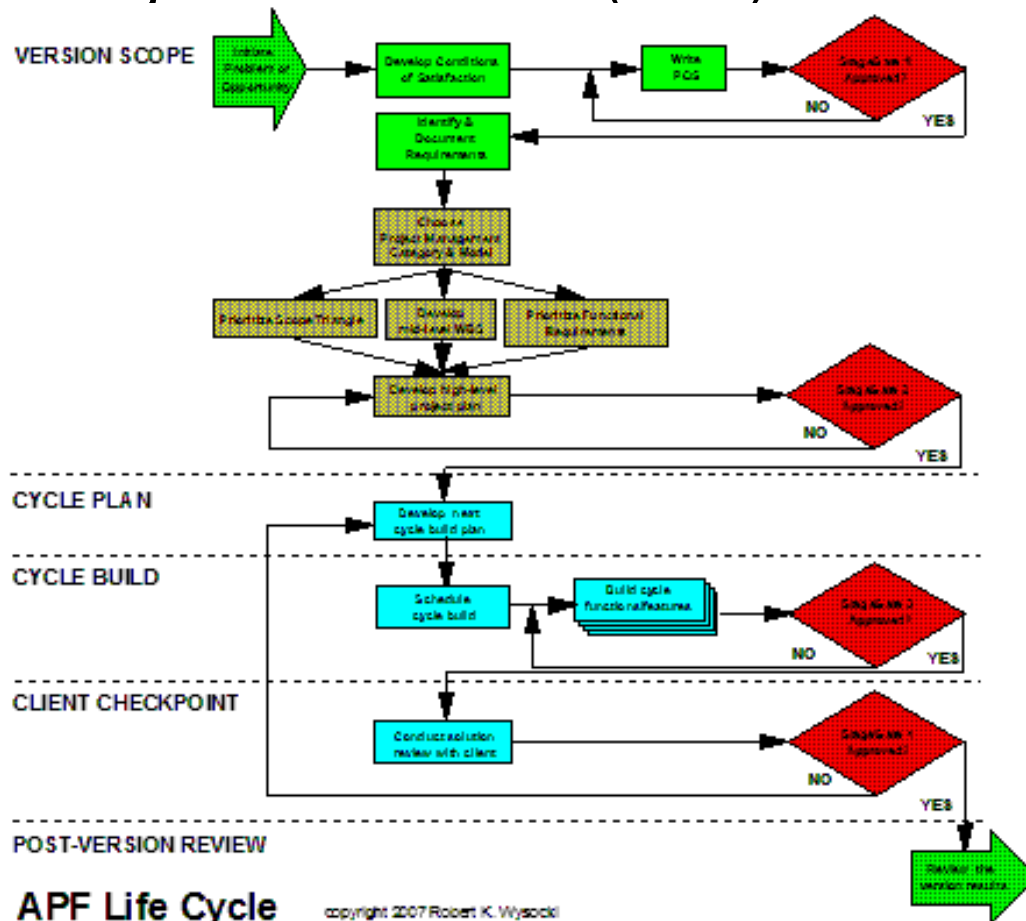
Adaptive PMLC Model

APF Core Values

- Client-focused
- Client-driven
- Incremental results early and often
- Continuous questioning and introspection
- Change is progress to a better solution
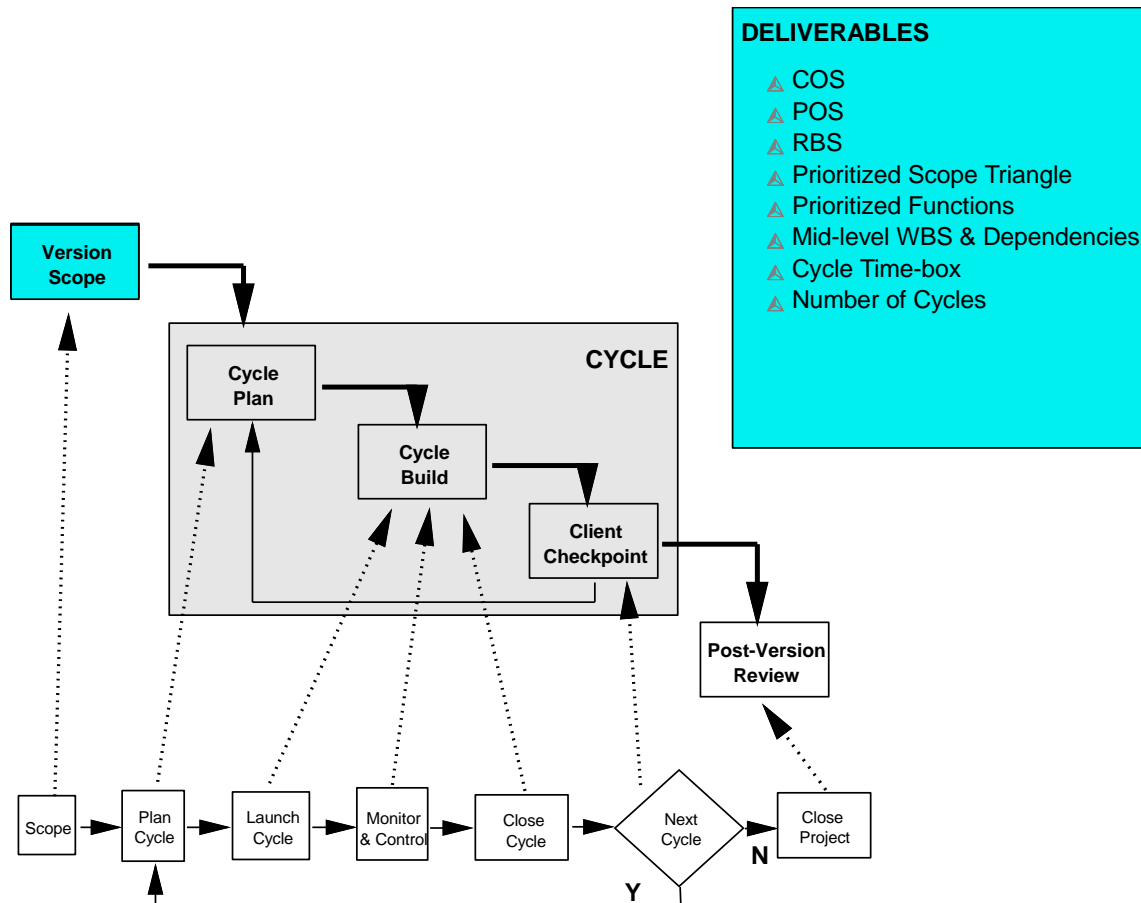- Don't speculate on the future

Adaptive

Adaptive PMLC Model

Adaptive Project Framework (APF)

APF Life Cycle   copyright 2007 Robert K. Wysocki

Figure 11-09

Adaptive PMLC Model

APF – Version Scope

Adaptive

DELIVERABLES

⚠ COS
⚠ POS
⚠ RBS
⚠ Prioritized Scope Triangle
⚠ Prioritized Functions
⚠ Mid-level WBS & Dependencies
⚠ Cycle Time-box
⚠ Number of Cycles

Figure 11-10

Adaptive PMLC Model

APF – Cycle Plan – Scope Triangle

Adaptive

Time

Cost

Scope and Quality

Resource Availability

Figure 11-11
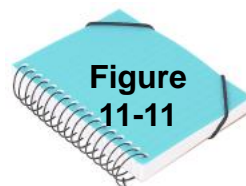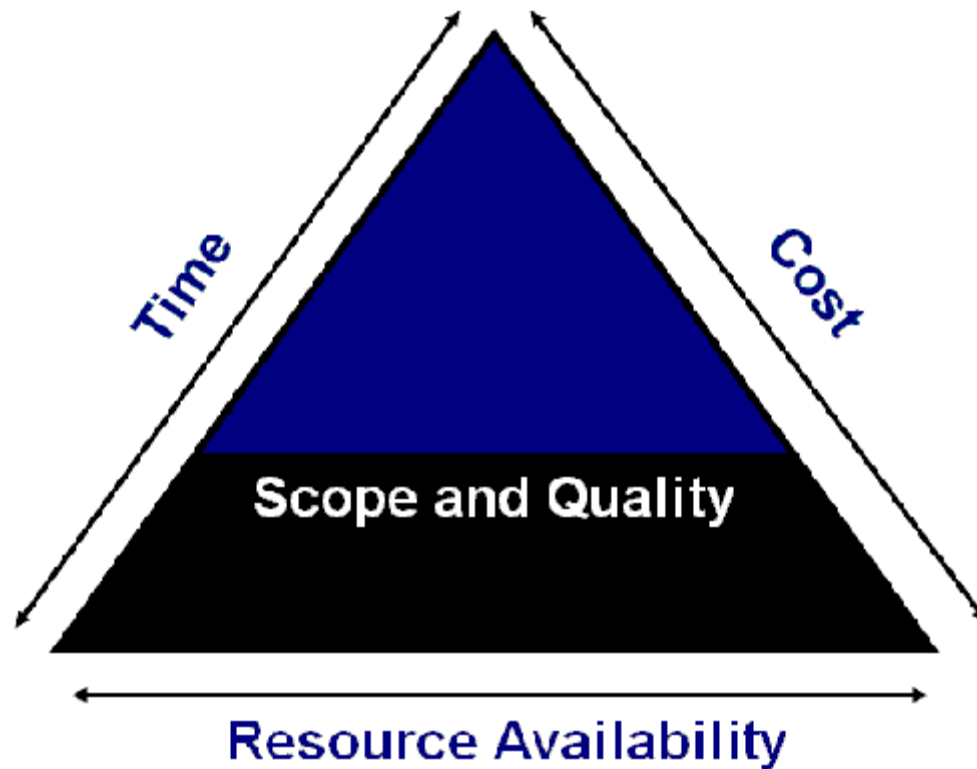
Adaptive PMLC Model

APF – Cycle Plan – Prioritization Approaches

Adaptive

- ➢ Forced Ranking
- ➢ Paired Comparison
- ➢ MoSCoW

Adaptive PMLC Model

Prioritization Approaches – Forced Ranking

Adaptive

MANAGER FUNCTION	A	B	C	D	RANK SUM	FORCED RANK
1	2	3	2	4	11	3
2	4	1	1	2	8	1
3	6	2	5	5	18	5
4	1	5	3	1	10	2
5	3	4	4	3	14	4
6	5	6	6	6	23	6
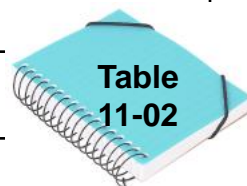
Table 11-02

Adaptive PMLC Model

Prioritization Approaches – Paired Comparison

Adaptive

	1	2	3	4	5	6	SUM	RANK
1	X	1	1	0	1	1	4	2
2	0	X	1	0	1	1	3	3
3	0	0	X	0	0	1	1	5
4	1	1	1	X	1	1	5	1
5	0	0	1	0	X	1	2	4
6	0	0	0	0	0	X	0	6

Table 11-03

Adaptive PMLC Model

Prioritization Approaches - MoSCoW

Adaptive

M: Must Have
S: Should Have
C: Could Have
W: Would be Nice to Have

Adaptive PMLC Model

APF – Cycle Plan Scope Triangle Ranking

Adaptive

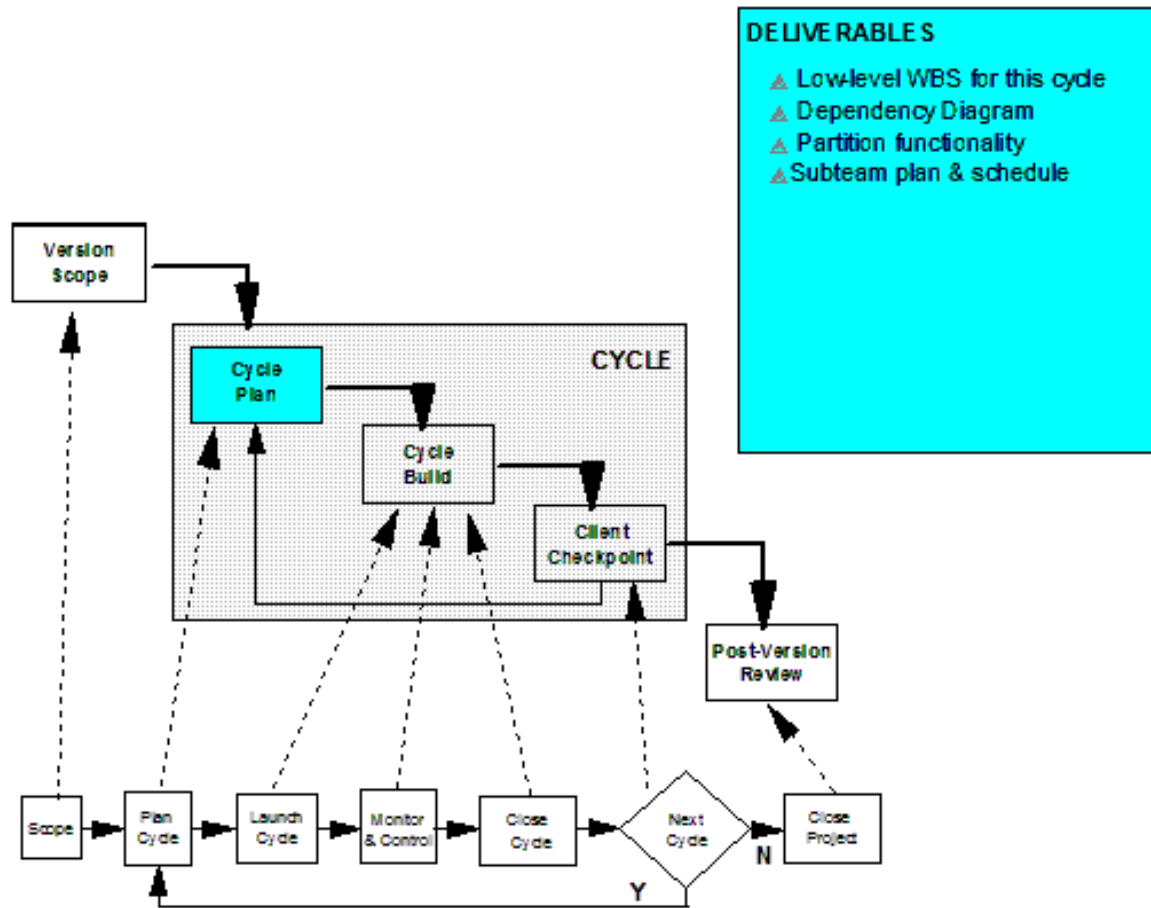| Variable	Priority Critical (1)	(2)	(3)	(4)	Flexible (5)
Scope				X	
Quality			X		
Time	X				
Cost					X
Resource Availability		X			

Table 11-04

Adaptive PMLC Model

APF – Cycle Plan

DELIVERABLES

- Low-level WBS for this cycle
- Dependency Diagram
- Partition functionality
- Subteam plan & schedule

Adaptive

Figure 11-12

Adaptive PMLC Model

APF – Cycle Plan – Resource Loaded Schedule
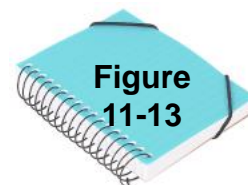
Adaptive

Figure 11-13

Adaptive PMLC Model

APF – Cycle Build

DELIVERABLES

⚠ Whatever functionality can be built before the time-box expires
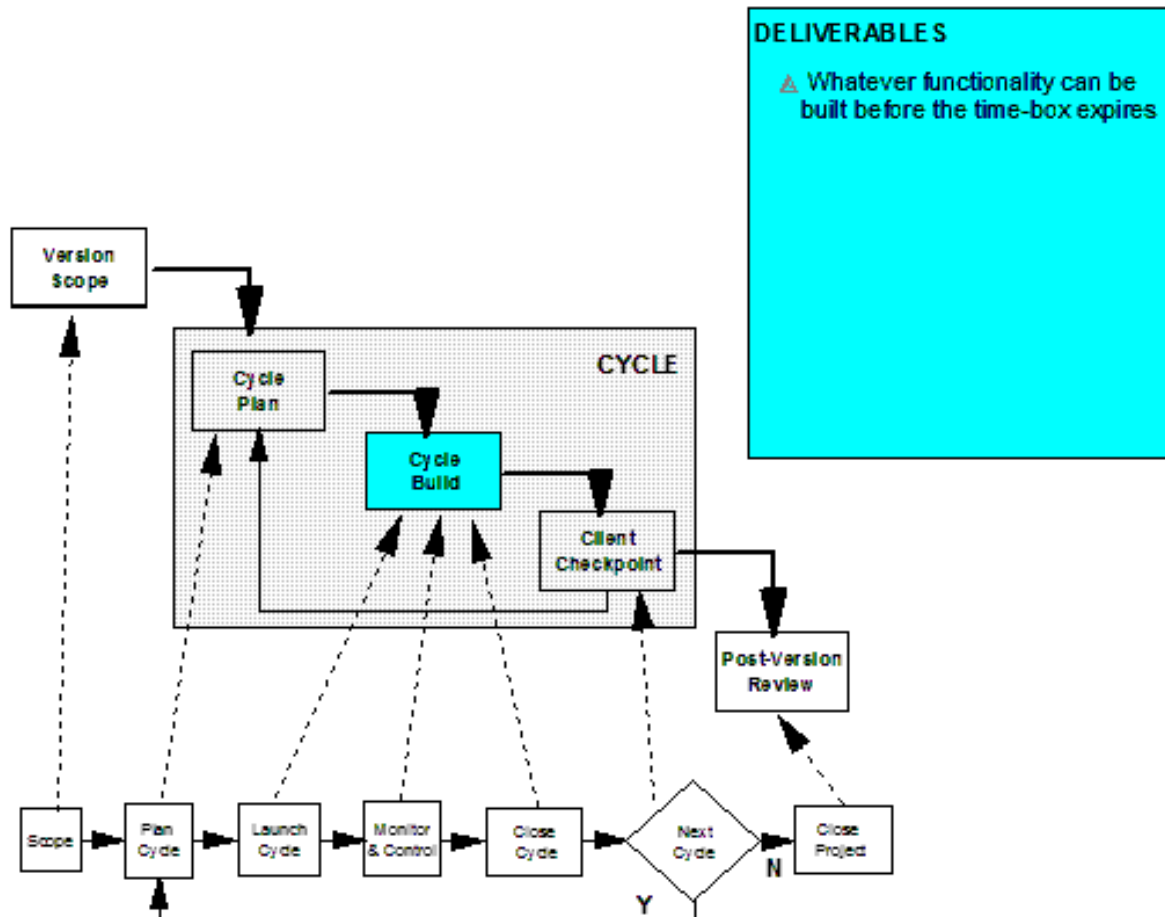
Adaptive

Figure 11-14
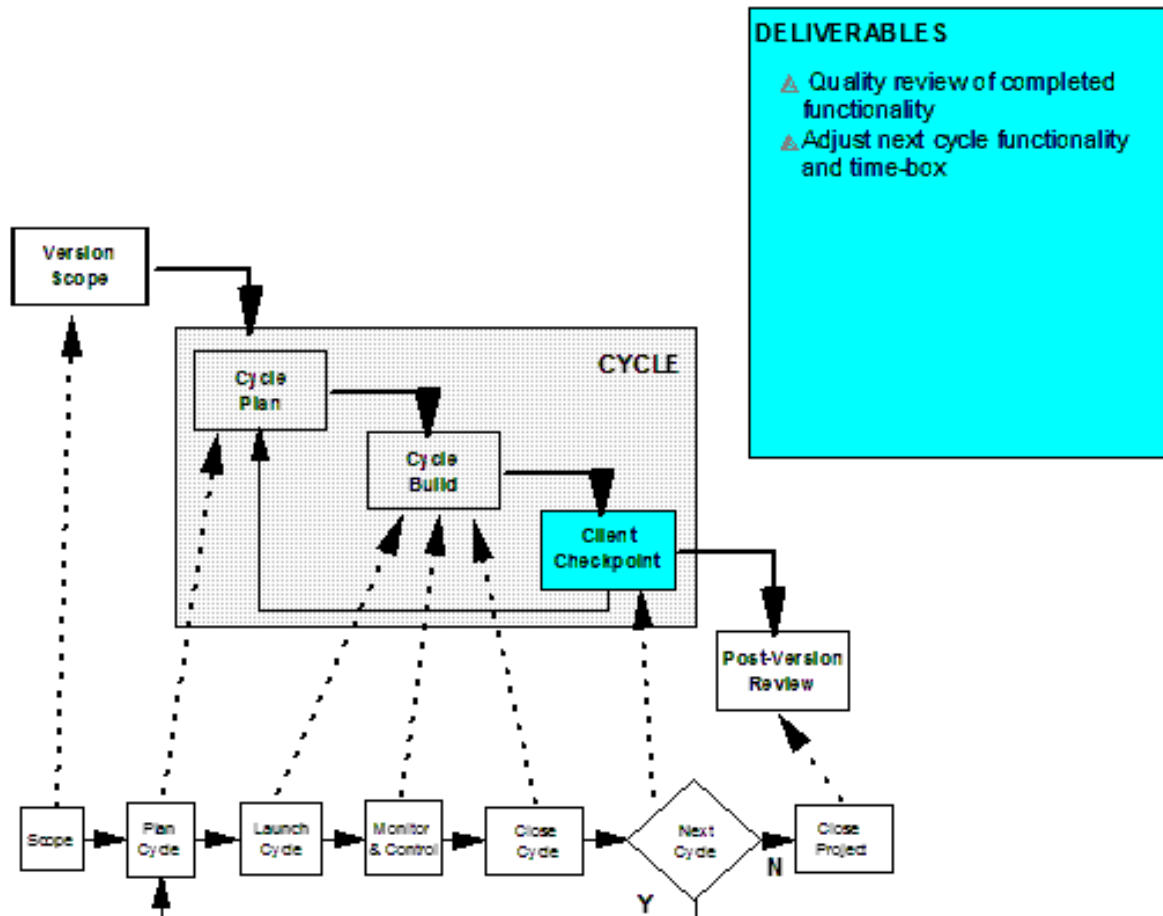
Adaptive PMLC Model

APF – Client Checkpoint

Figure 11-15

Adaptive PMLC Model

APF – Client Checkpoint – Inputs

Adaptive

- ➢ Functionality completed in the previous cycle
- ➢ Functionality planned but not completed in the previous cycle
- ➢ Functionality originally planned for this cycle
- ➢ Functionality planned for all cycles beyond the next one
- ➢ All learning and discovery that took place in all previous cycles
- ➢ Any changes that took place in the business environment during the previous cycles
- ➢ The extent to which the current solution is converging on the final solution
- ➢ The current contents of the Scope Bank

Adaptive PMLC Model

APF – Client Checkpoint – Ouputs

Adaptive

- ➢ Review the COS and make any adjustments to solution requirements
- ➢ Prioritize the items in the Scope Bank
- ➢ Identify and Prioritize Probative Swim Lane contents
- ➢ Identify and prioritize Integrative Swim Lane contents
- ➢ Select the items to be developed in the next cycle
- ➢ Determine the next cycle time-box

Adaptive PMLC Model

APF – Client Checkpoint – Probative versus Integrative Swim Lane sizes over time
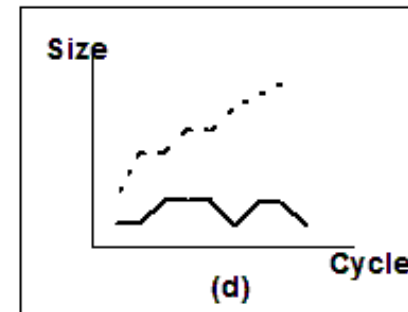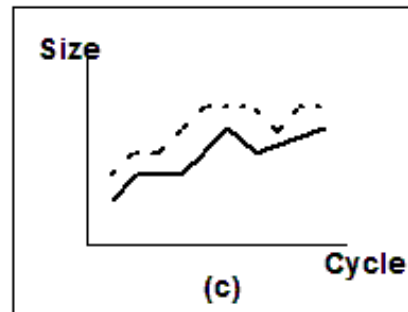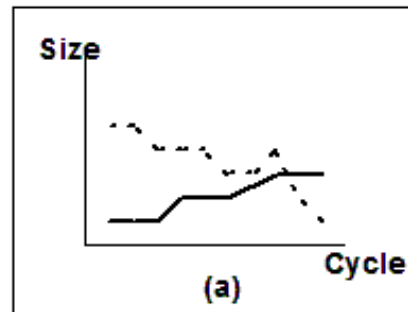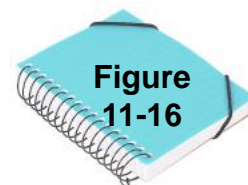
Adaptive

Figure 11-16

Adaptive PMLC Model

APF – Post-Version Review

Adaptive

DELIVERABLES

⚠ Check on business outcomes
⚠ Lessons learned to improve next version
⚠ Lessons learned to improve APF

Figure 11-17
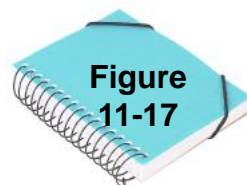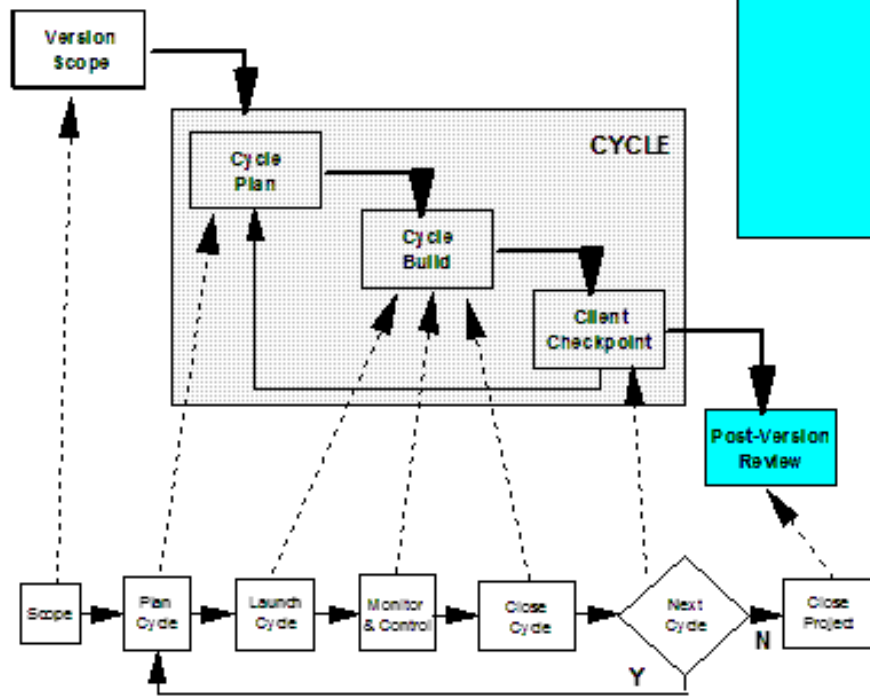
Adaptive PMLC Model

APF – Post-Version Review – Questions
  to be answered

Adaptive

- ➢ Was the expected business outcome realized?
- ➢ What was learned that can be used to improve the solution?
- ➢ What was learned that can be used to improve the effectiveness of APF?

Adaptive PMLC Model

Adapting APF

Adaptive

- ➢ Proof of Concept
- ➢ Revising the Version Scope
- ➢ Embedding APF in other PMLC models

Adaptive PMLC Model

Implementing APF

Adaptive

- ➢ Bottom Up Approach
- ➢ Top Down Approach
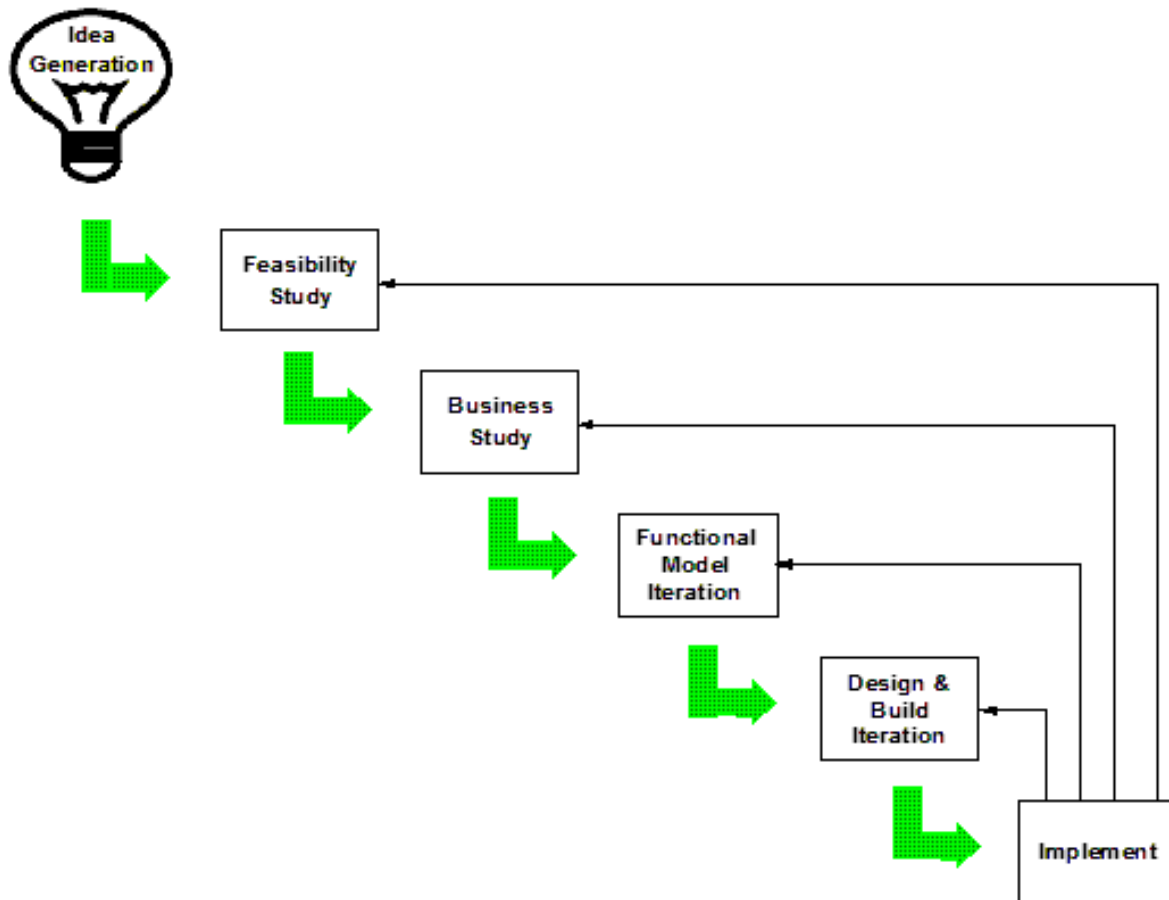
Adaptive PMLC Model

Dynamic Systems Development Method (DSDM)

Adaptive

Figure
11-18

Adaptive PMLC Model

Dynamic Systems Development Method (DSDM)
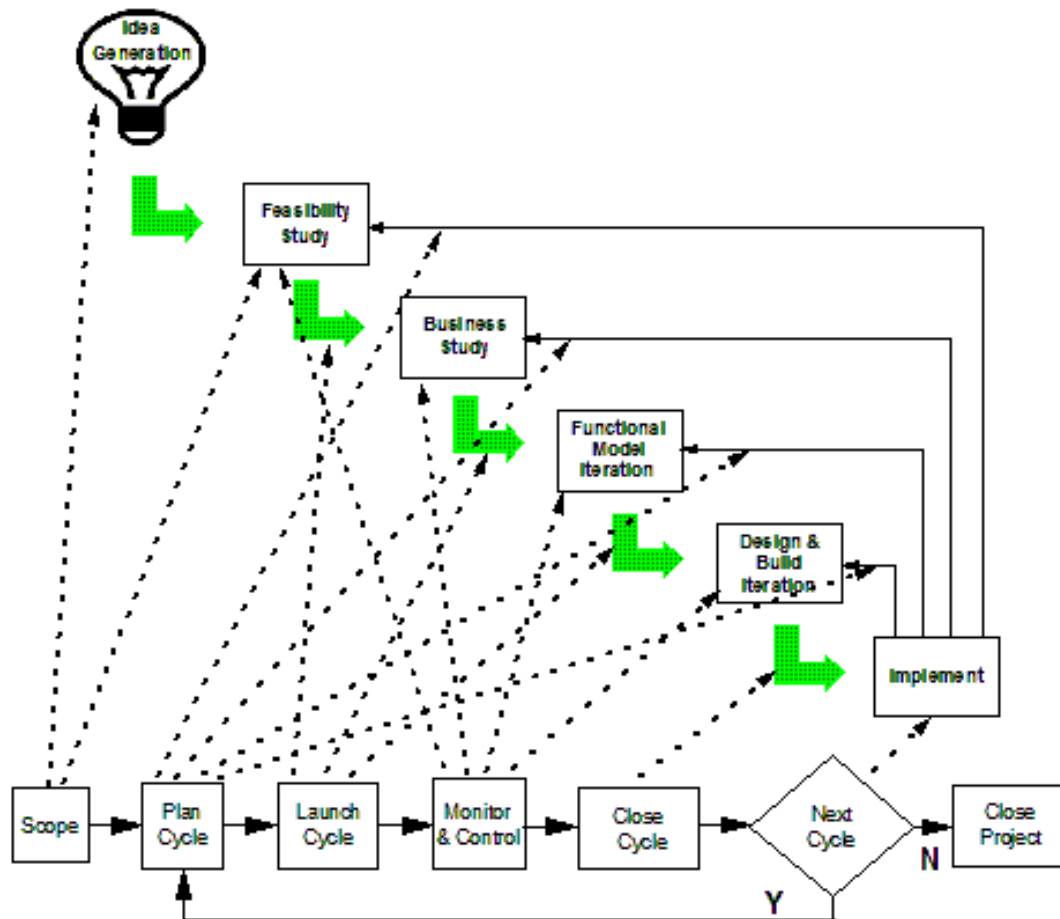
Adaptive
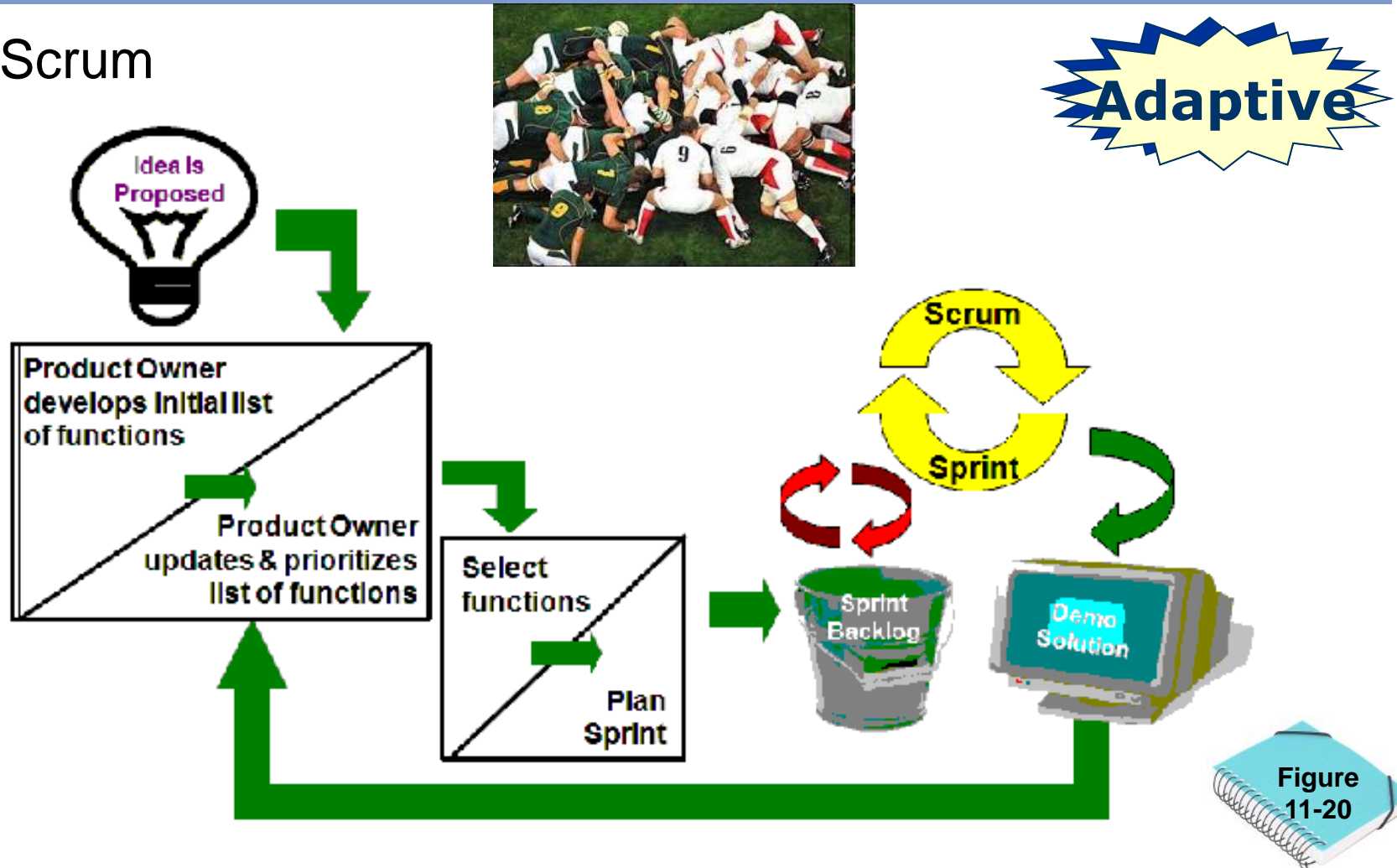
Figure
11-19

Adaptive PMLC Model

Scrum

Adaptive

Idea is Proposed

Product Owner develops initial list of functions

Product Owner updates & prioritizes list of functions

Select functions

Plan Sprint

Sprint Backlog

Demo Solution

Scrum

Sprint

Figure 11-20

Adaptive PMLC Model

Scrum
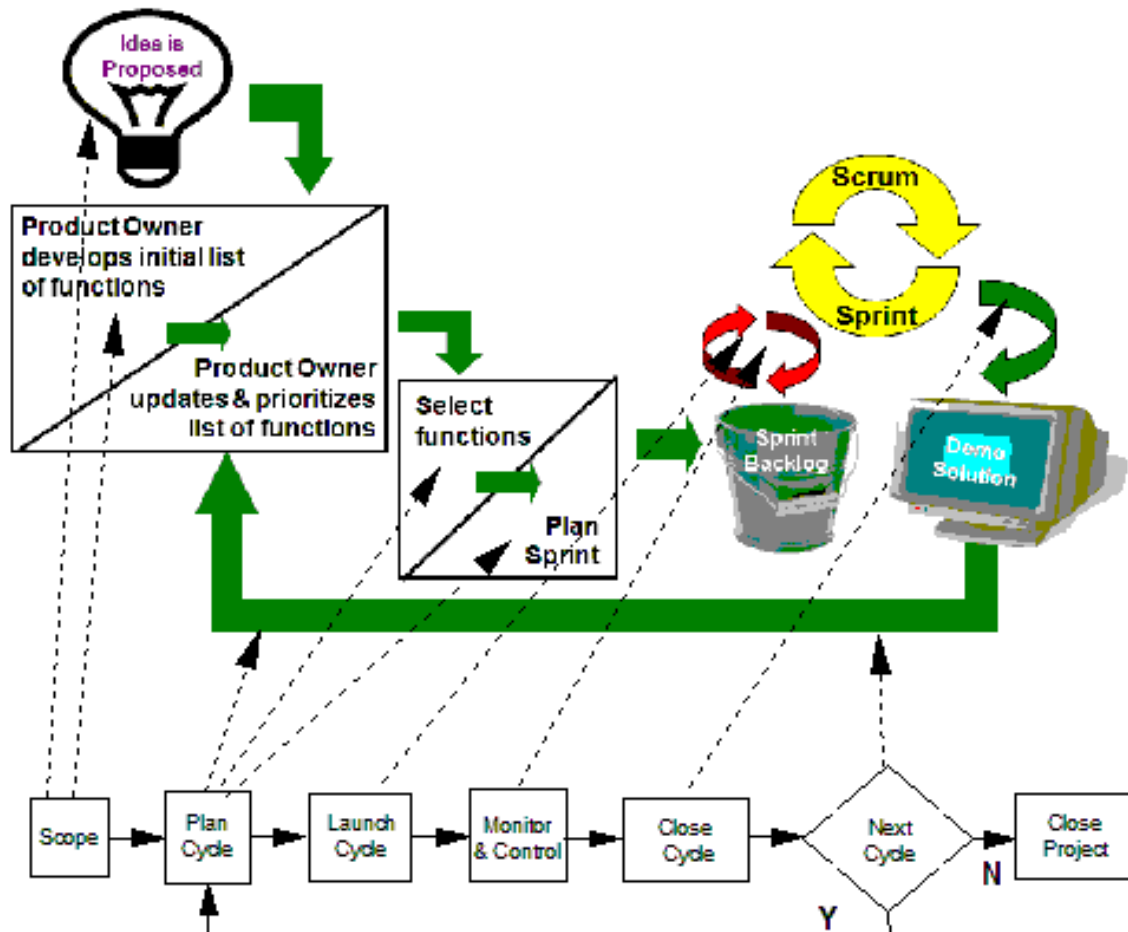
Figure 11-21

Adaptive PMLC Model

When to Use an Adaptive PMLC Model

> Have you or a trusted colleague had successful adaptive project experience with this client before?

> If this is the first adaptive experience for this client, have you assured yourself that they will be meaningfully involved throughout the entire project.

> Has the client appointed a qualified and respected co-project manager for this project?

Adaptive PMLC Model

Adapting & Integrating the Toolkits for Maximum Effectiveness

Adaptive

- ➤ Scope the Next Iteration/Cycle
    - ➤ Elicit the true needs of the client
    - ➤ Documenting the client's needs
    - ➤ Negotiating with the client how those needs will be met
    - ➤ Writing a one page description of the project
    - ➤ Gaining senior management approval to plan the project

Adaptive PMLC Model

Adapting & Integrating the Toolkits for Maximum Effectiveness

Adaptive

➢ Planning the Next Iteration/Cycle
  ➢ Defining all of the work of the next iteration/cycle
  ➢ Estimating how long it will take to complete the work
  ➢ Estimating the resources required to complete the work
  ➢ Estimating the total cost of the work
  ➢ Sequencing the work
  ➢ Building the initial iteration/cycle schedule
  ➢ Analyzing and adjusting the iteration/cycle schedule
  ➢ Writing the risk management plan
  ➢ Documenting the iteration/cycle plan
  ➢ Gaining senior management approval to launch the iteration/cycle

Adaptive PMLC Model

Adapting & Integrating the Toolkits for Maximum Effectiveness

Adaptive

- ➤ Launching the Next Iteration/Cycle
  - ➤ Recruiting the project manager
  - ➤ Recruiting the project team
  - ➤ Writing the Project Description Document
  - ➤ Establishing team operating rules
  - ➤ Establishing the scope change management process
  - ➤ Managing team communications
  - ➤ Writing work packages

Adaptive PMLC Model

Adapting & Integrating the Toolkits for
Maximum Effectiveness

Adaptive

- ➢ Monitoring & Controlling the Next Iteration/Cycle
  - ➢ Establishing the iteration/cycle performance and reporting system
  - ➢ Monitoring the iteration/cycle performance
  - ➢ Monitoring risk
  - ➢ Reporting project status
  - ➢ Processing scope change requests
  - ➢ Discovering and solving problems

Adaptive PMLC Model

Adapting & Integrating the Toolkits for Maximum Effectiveness

Adaptive

- Close the Next Iteration/Cycle
  - Gaining client approval of having met iteration/cycle requirements
  - Planning and installing deliverables
  - Writing the final iteration/cycle report
  - Conducting the post-iteration/cycle audit
- An APM project ends when
  - The time and budget are expended
  - An acceptable solution with the expected business value is found
  - The project is abandoned