

Agile vs. Waterfall

Why not both

Project Management

Agile
Project Management



Traditional
Project Management

Key Questions for Project Managers

1. Impact on Existing Project Methodologies:

- ❑ How does agile impact existing project methodologies?
- ❑ Is there still a need for traditional Waterfall approaches?

2. Finding the “Middle Ground”:

- ❑ Is there a middle ground between agile and traditional Waterfall for companies that want to find a balance of control and agility?

3. Relationship to PMBOK:

- ❑ How do I reconcile all the traditional PMI PMBOK knowledge that has been the foundation of project management for so long with many of the new ideas and principles that are the foundation of the agile movement?

4. Impact on the Future of Project Management:

- ❑ What is the impact of the agile movement on the future of project management?
 - ❑ How does it change the project management role?
-

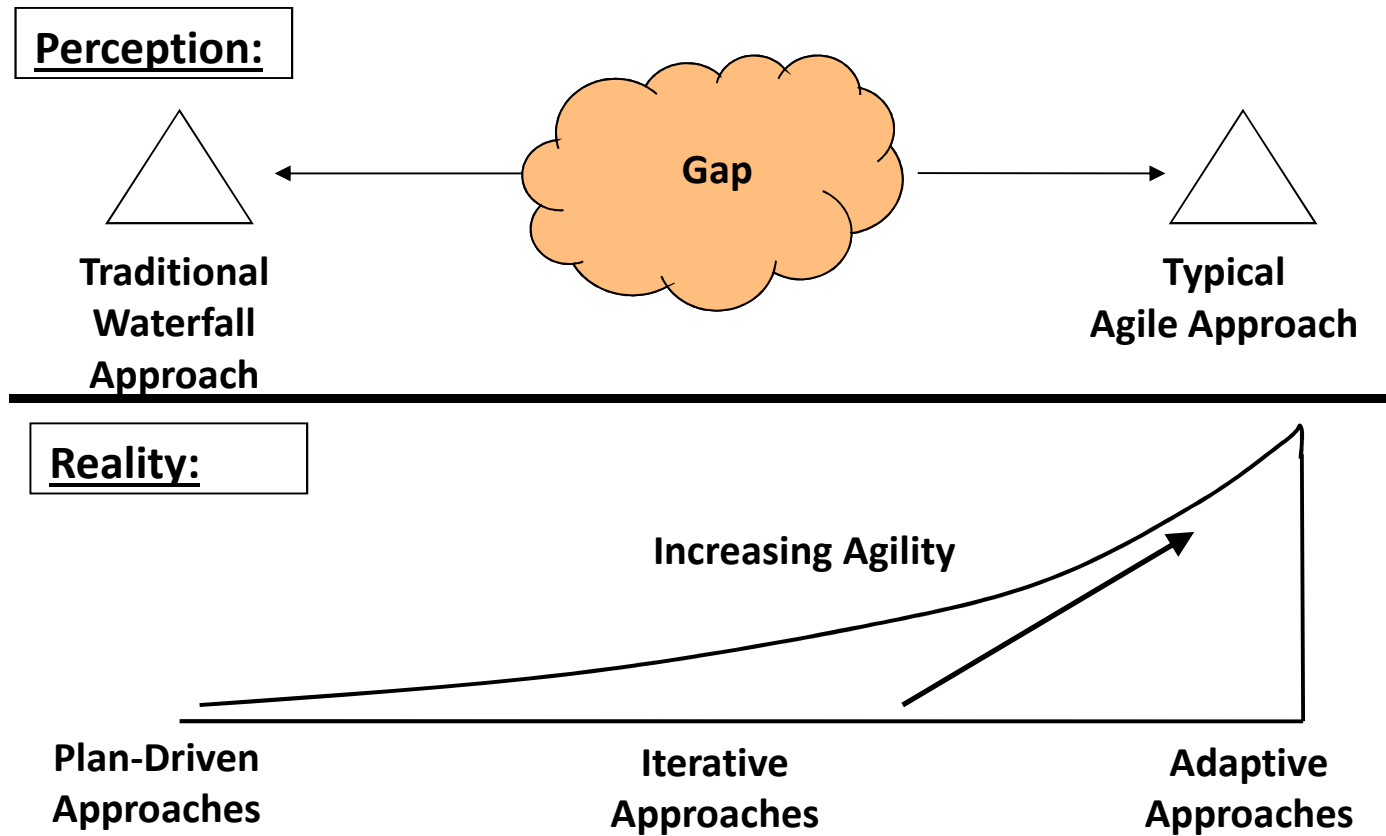
Agile Overview

Perceptions, Stereotypes and Reality

Summary of Key Differences

	Plan-Driven (e.g., Waterfall)	Agile (e.g., Scrum)
Requirements Definition	<ul style="list-style-type: none">Detailed Requirements Defined Upfront Prior to Starting Design/Development	<ul style="list-style-type: none">Only high-level Product Backlog Upfront,Detailed Requirements Defined as the Design Progresses
Planning Approach	<ul style="list-style-type: none">Heavy Emphasis on Upfront Planning	<ul style="list-style-type: none">Rolling-wave PlanningDefer Planning Decisions as long as possible
Scope Control	<ul style="list-style-type: none">Scope Control is Essential to Controlling Costs and Schedules	<ul style="list-style-type: none">Scope is Expected to Change and Expand to Meet User Needs
Project Mgt Approach	<ul style="list-style-type: none">Emphasis on Control of Cost and Schedules	<ul style="list-style-type: none">Emphasis on Flexibility and Adaptability to Satisfy Business Need

Agile Perception vs. Reality



Common Perception:

- Agile = Scrum or Some Other Standard Agile Methodology like XP
- If You're Not Doing Scrum or another Standard Agile Methodology "by the book", You're Not Agile

Perception versus Reality – Process

Control

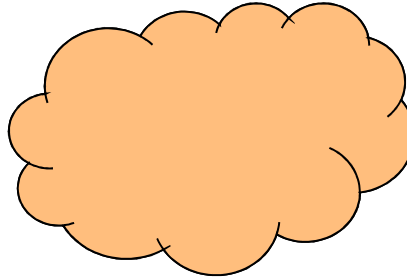
Waterfall

Agility

Agile

PERCEPTION*:

- *TOO MUCH PAPERWORK*
- *LOTS OF CHECKLISTS*
- *CUMBERSOME PROCESSES*
- *THE PROCESS MANAGES YOU INSTEAD OF YOU MANAGING THE PROCESS*



Huge Gap

PERCEPTION*:

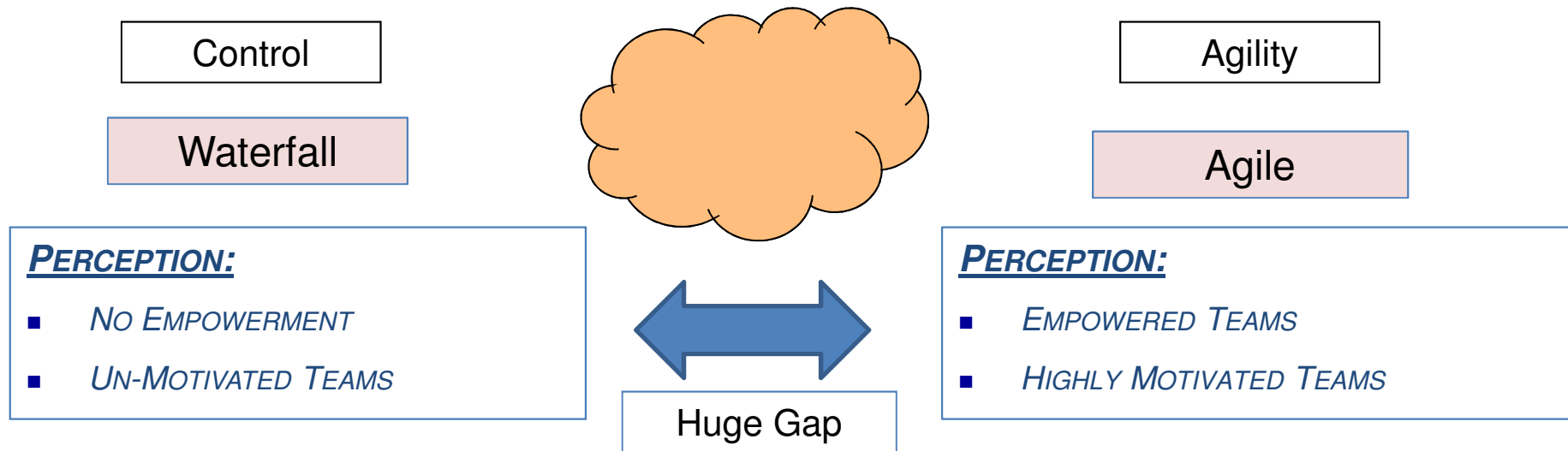
- *NO PROCESS*
- *CHAOTIC, NO CONTROL*
- *WON'T WORK FOR COMPLEX PROJECTS*
- *UNPROFESSIONAL*

REALITY – YOU CAN:

- Define a Process that is Appropriate to the Level of Control Desired
- Design a Sufficient Level of Flexibility into the Process

* ADAPTED FROM BRIAN BOZZUTO'S PRESENTATION ON ALIGNING PMBOK AND AGILE – PMI WORLD CONGRESS 2009

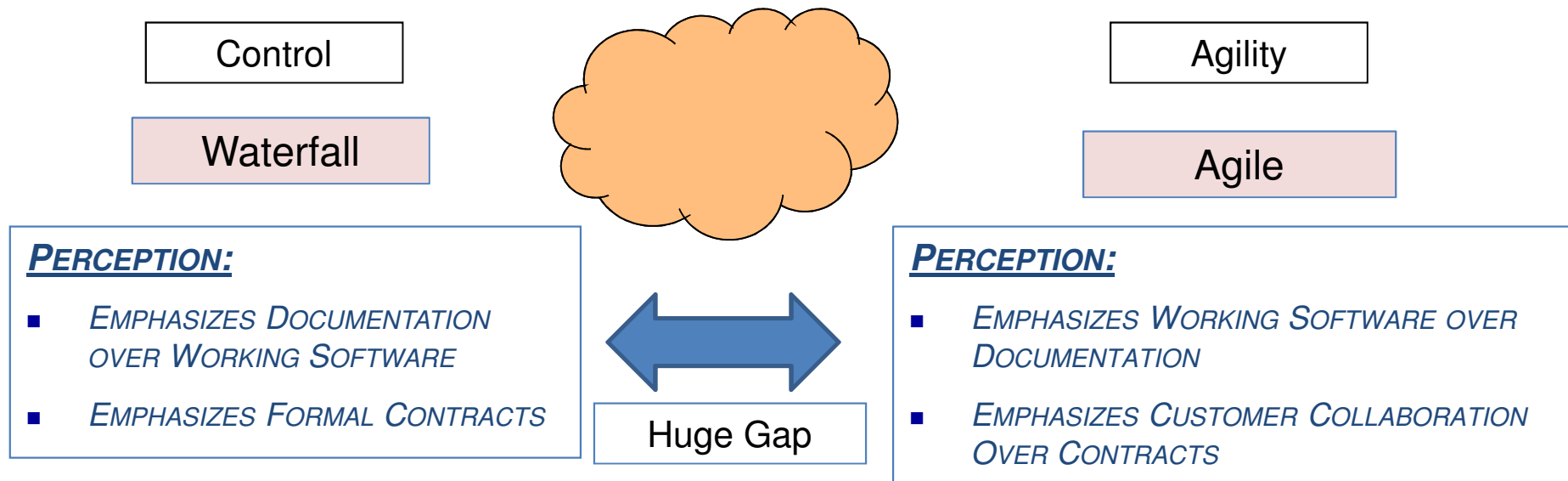
Perception versus Reality – Empowerment and Motivation



REALITY – YOU CAN:

- Create a Level of Empowerment That Is Consistent With the Need for Control and the Capabilities of the Team
- Use Appropriate Management/Leadership Style to Maximize Motivation

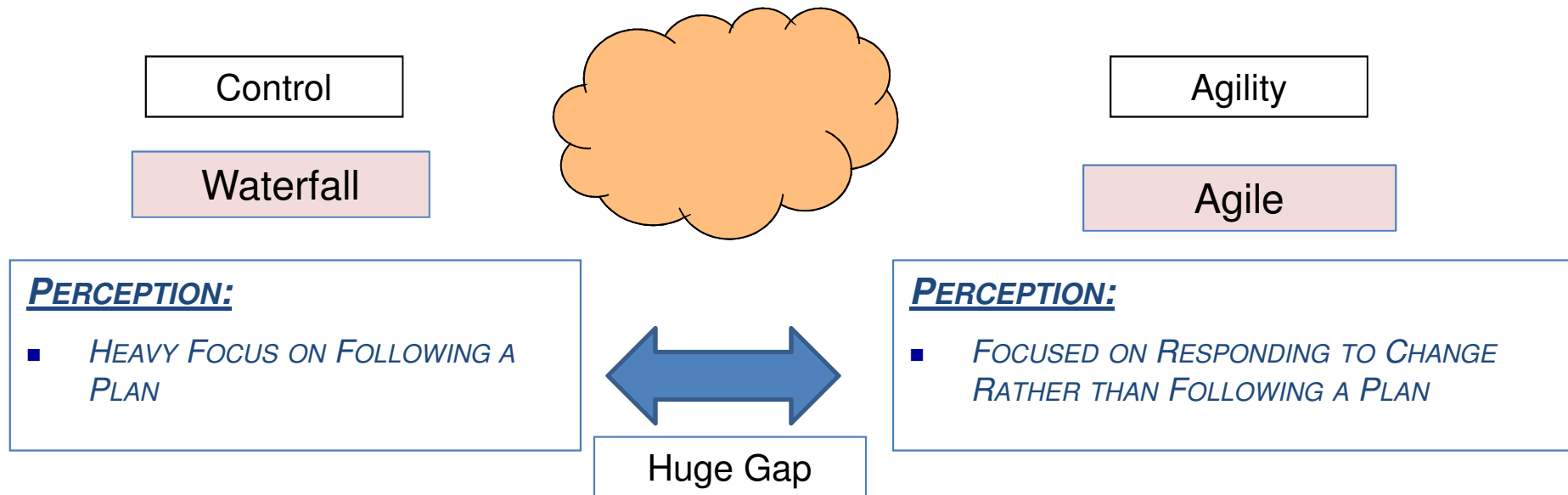
Perception versus Reality – Customer Collaboration



REALITY – YOU CAN:

- Develop a Customer Collaboration Approach that Balances Customer Engagement Against Control of Requirements
- Use documentation to fulfill a real need

Perception versus Reality – Planning

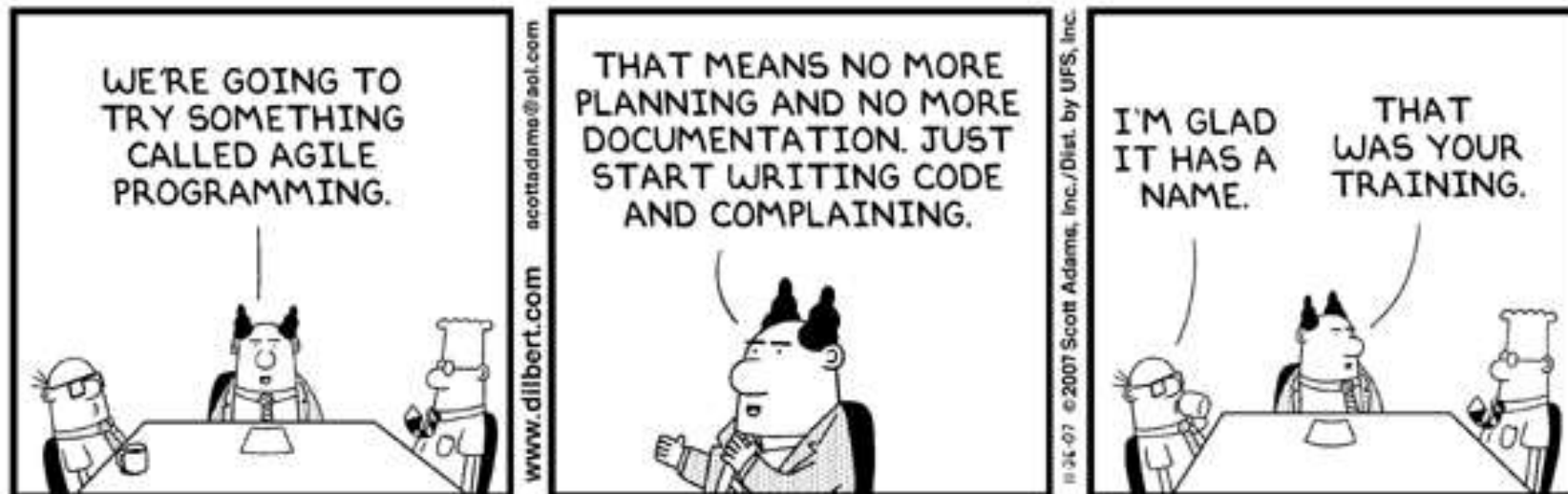


REALITY – YOU CAN:

- Use an Appropriate Level of Planning to Manage the Risks
- Combine Planning with an Appropriate Level of Change Control

Agile Does Not Mean

1. • No planning
2. • No documentation
3. • No governance
4. • No process



Potential Benefits of Agile

1. Increased Focus on Successful Business Outcomes

- ❑ Development Approach is More Adaptive to Customer Needs and Customer is More Engaged

2. Faster Time to Market

- ❑ Planning Process is Streamlined and Iterative Approach Accelerates Development

3. Organizational Effectiveness and Employee Morale

- ❑ More Unified Approach to Product Development and Higher Level of Employee Engagement

4. Higher Productivity and Lower Costs

- ❑ Eliminate Unnecessary Overhead and Bottlenecks and More Effective Utilization

5. Potential for Higher Quality

- ❑ Testing is an Integral Part of Development and Early Validation of Customer Needs

Obstacles to Becoming Agile

1. Collaborative Cross-Functional Approach is Difficult to Achieve
 - ❑ Business Sponsors and Development Teams
 - ❑ Within the Development Organization
 2. Significant Organizational Commitment May Be Required
 - ❑ Requires Active Participation by Business Sponsors
 - ❑ May Require Cultural Change
 - ❑ Training and Skill Level of Employees is Significant
 3. Business Environment May Impose Constraints
 - ❑ Regulatory Requirements
 - ❑ Other Business Process Control Requirements
 4. Project Management Approach Needs to Be Redefined
 - ❑ More Sophisticated Approach to Project Management
 - ❑ Design Methodologies to Fit the Business and Project Environment
-

Impact on Existing Methodologies

- How does agile impact existing project methodologies?
- Is there still a need for traditional Waterfall approaches?

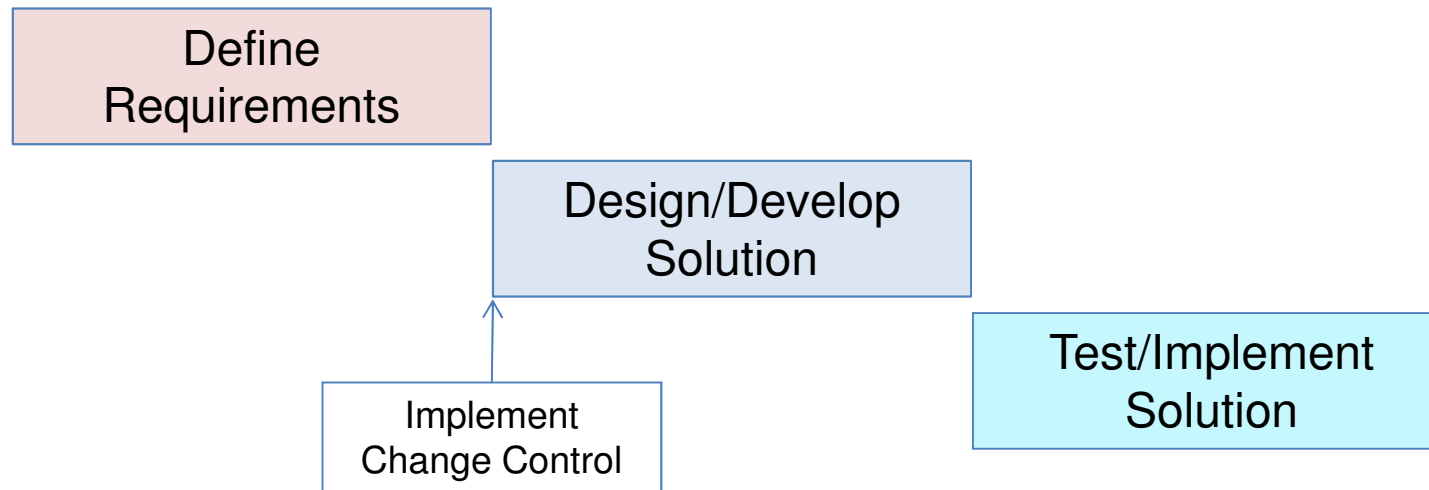
Key Challenges



- Need to Rethink Project Management Approach to Provide an Appropriate Balance of Control and Agility for Each Project
 - A Large Percentage of Projects that Successfully meet Project Cost and Schedule Goals Fail to Achieve the Desired Business Outcome*
 - Excessive Emphasis on Control Creates Unnecessary Bureaucracy and Slows Time to Market

* FROM JAMIE CAPELLA CORPORATE EXECUTIVE BOARD STUDY – PRESENTATION TO PMI MASSBAY CHAPTER FEB 2010

Traditional Waterfall Approach



Control

Best

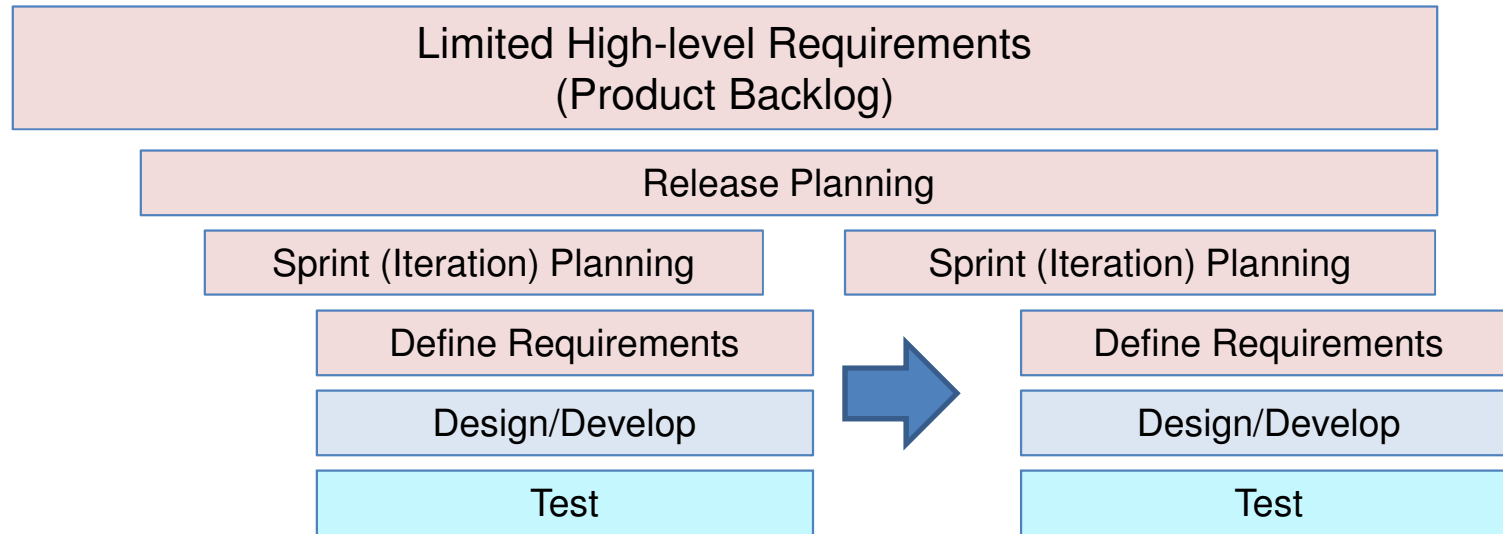
- Controlling Changes to Requirements is Essential to Controlling Costs and Schedules

Agility

Worst

- Might be Unrealistic in an Uncertain Environment
- Inflexible and Not Easily Adaptable to Fit User Needs
- Unnecessary Overhead and Worst Time to Market

Agile Approach



Control

Worst

- Scope Creep - Encourages Customer to Define and Change Requirements as the Design Develops

Agility

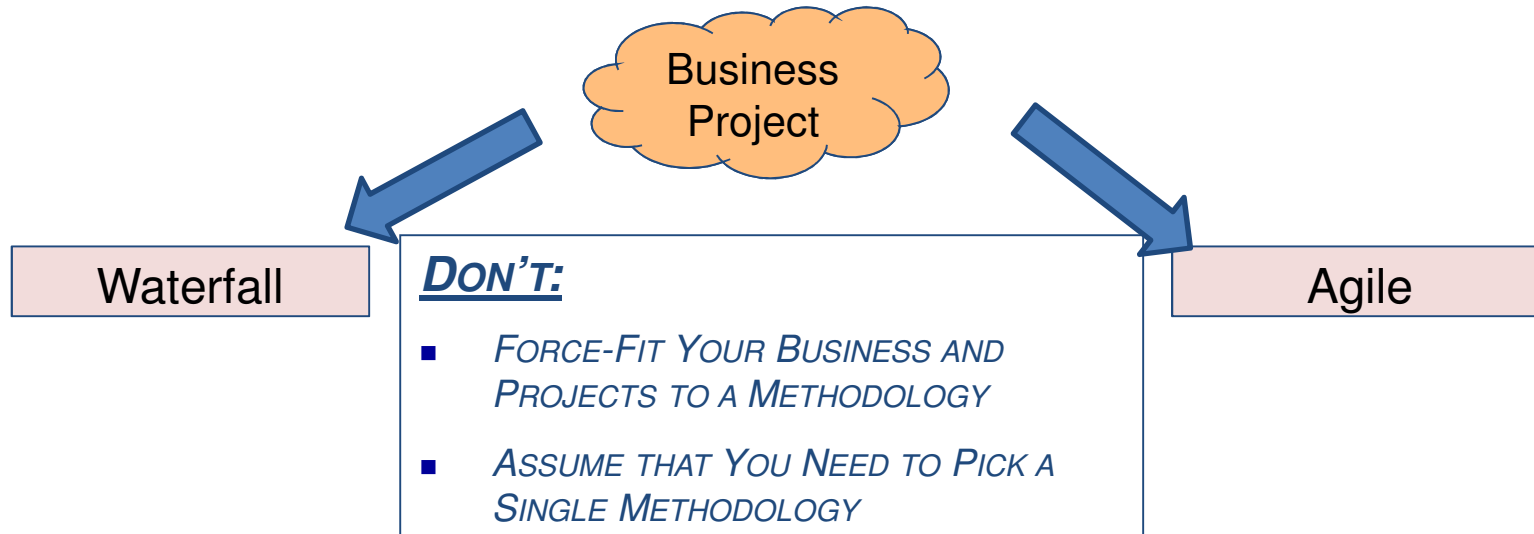
Best

- Higher Quality - Customer is Directly Engaged Throughout the Design Effort as it Progresses
- Reduced Overhead and Faster Time to Market

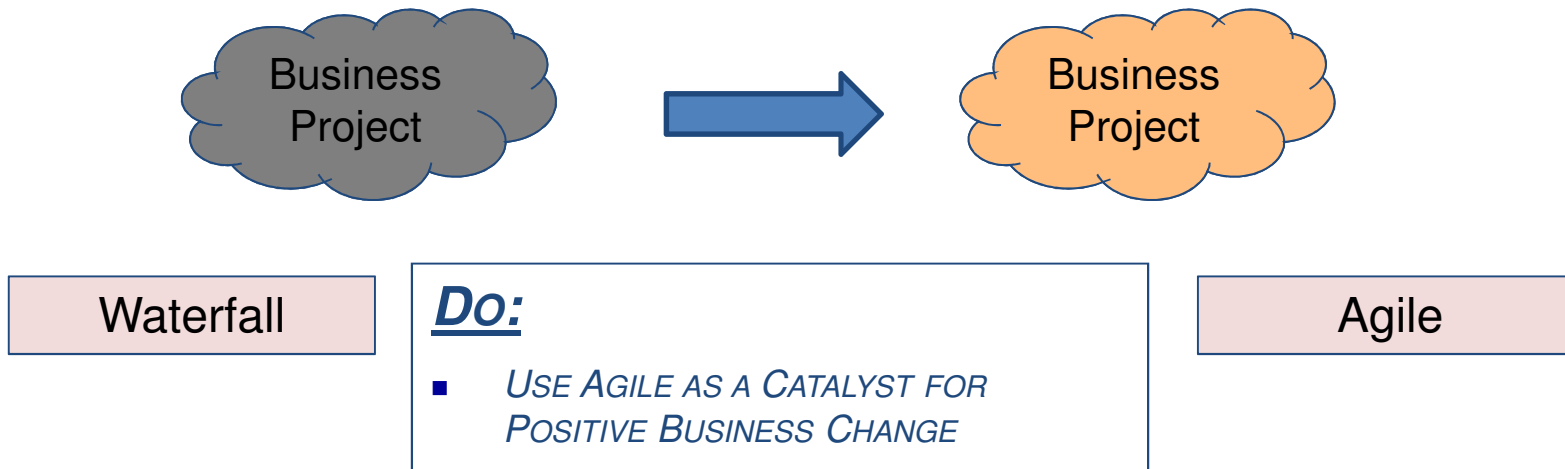
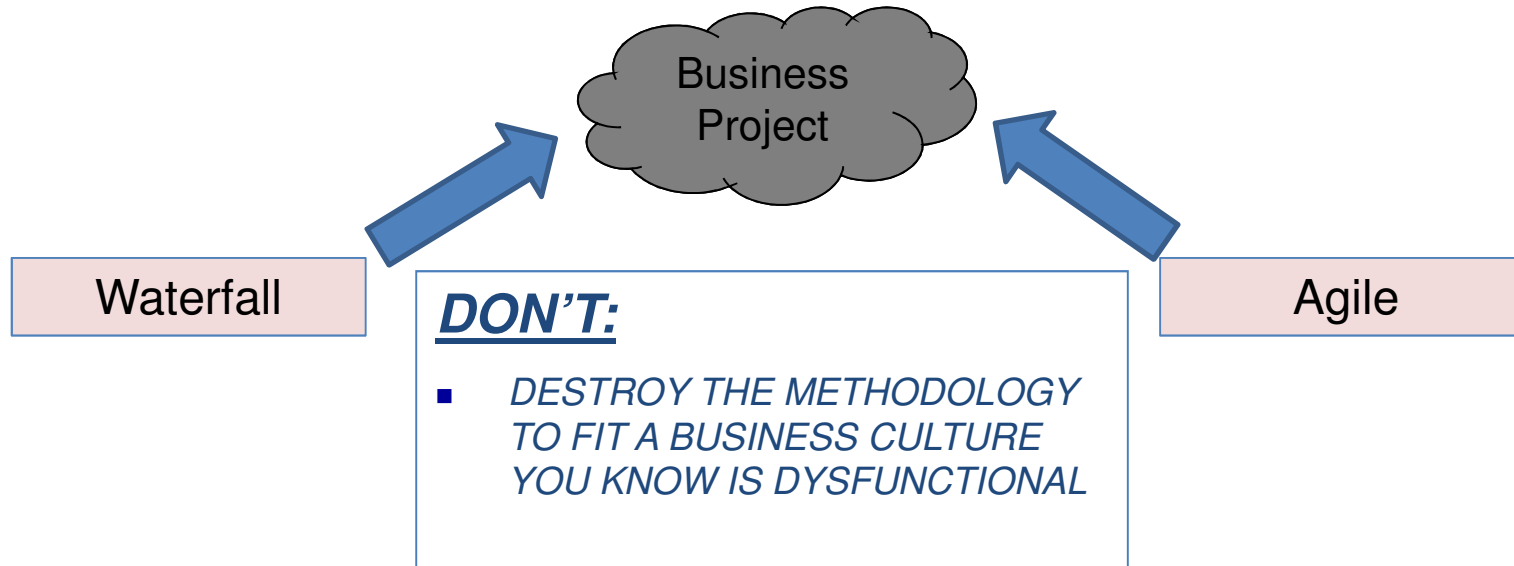
Finding the “Middle Ground”

- Is there a middle ground between agile and traditional Waterfall for companies that want to find a balance of control and agility?

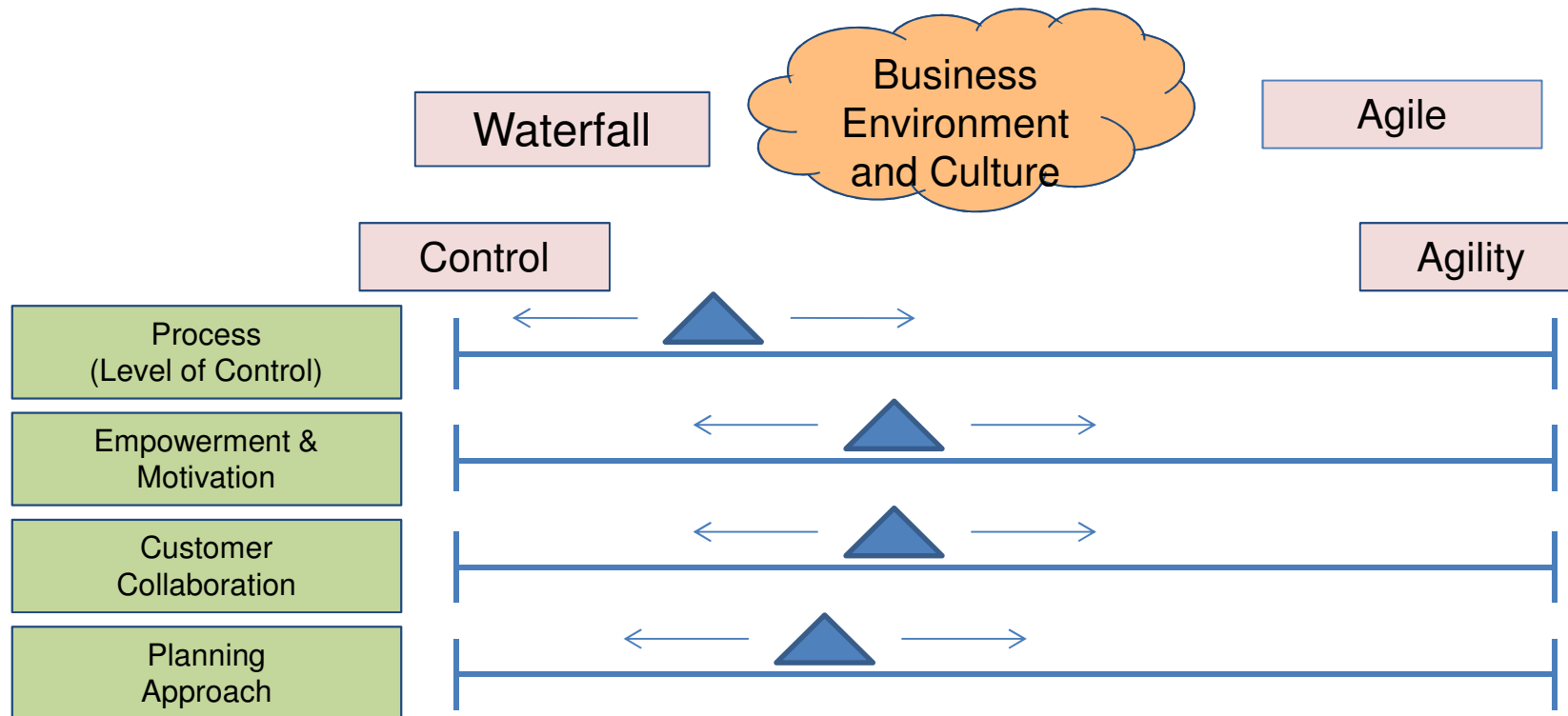
Key Recommendations



Key Recommendations (cont.)



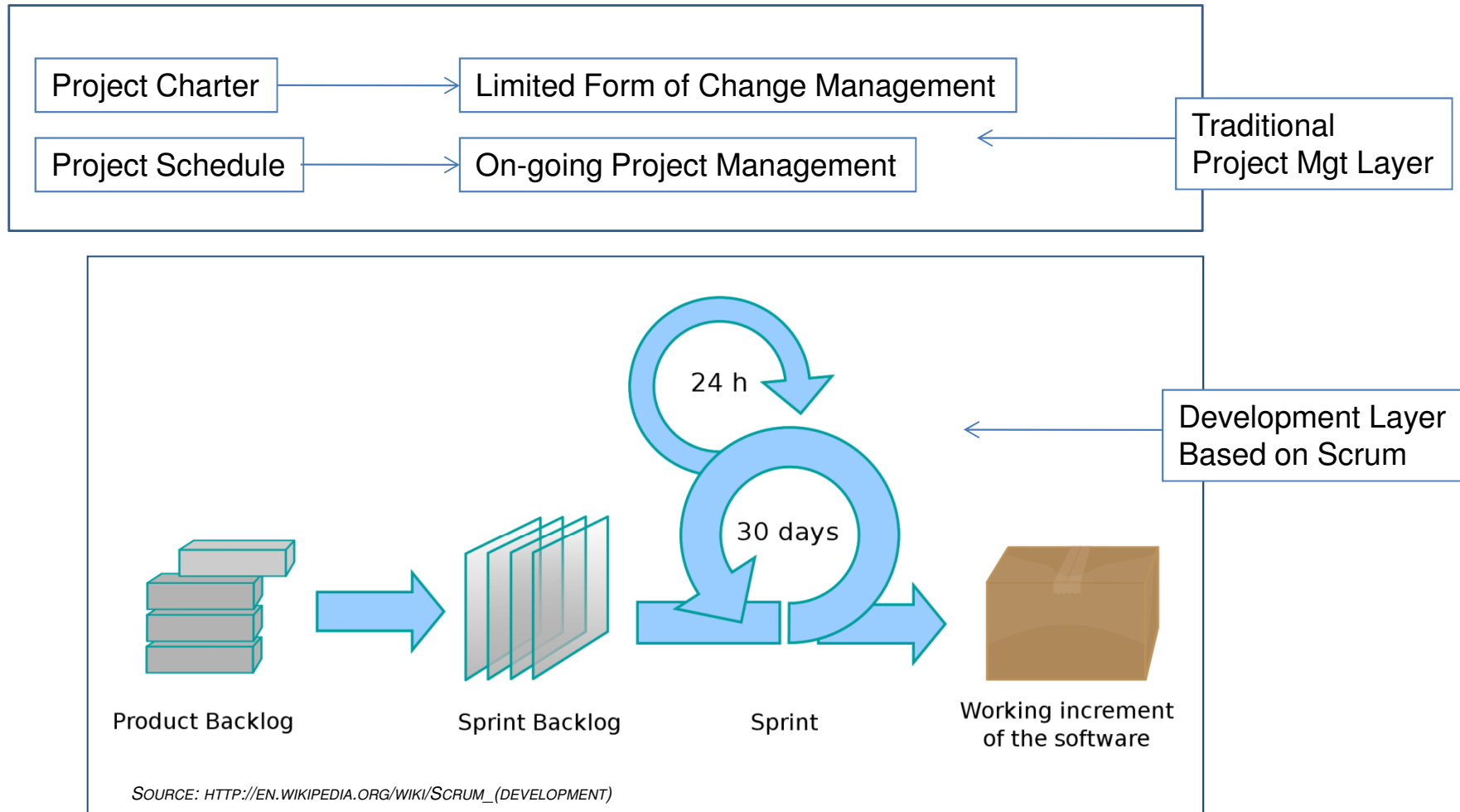
Where Will Your Company Wind Up?



KEY QUESTIONS:

- What's the right balance of control and agility for our business?
- How much cultural change are we willing or able to undertake to create a more agile approach?

Example Hybrid Approach



Relationship to PMBOK

- How do we reconcile all the traditional PMI PMBOK knowledge that has been the foundation of project management for so long with many of the new ideas and principles that are the foundation of the agile movement?

Relationship to PMBOK:

KEY POINTS:

BOTH PMBOK AND AGILE PRINCIPLES NEED TO BE ADAPTED TO FIT THE PROJECT

- *ONE IS A TAILOR-DOWN APPROACH*
- *THE OTHER IS A TAILOR-UP APPROACH*
- *FIGURING OUT HOW TO MIX THE TWO TOGETHER CAN REQUIRE A LOT OF SKILL*

PMBOK

OVER 500 PAGES OF DETAILED GUIDELINES



"TAILOR DOWN" APPROACH



"TAILOR UP" APPROACH

Agile
Principles & Practices

BROAD PRINCIPLES AND VERY FLEXIBLE AND ADAPTIVE PRACTICES

MANY OF THE PERCEIVED DIFFERENCES BETWEEN PMBOK AND AGILE ARE IN THEIR INTERPRETATION AND HOW THEY'RE APPLIED NOT IN THE PRINCIPLES THEMSELVES

Relationship to PMBOK (cont.):

KEY POINTS:

- BOTH THE OVERALL PROJECT MANAGEMENT ASPECTS AS WELL AS THE DEVELOPMENT ASPECTS OF A PROJECT MUST BE ADDRESSED
- HOW WOULD YOU DECIDE ON THE APPROPRIATE DEVELOPMENT METHODOLOGY FOR THE SOFTWARE PHASE OF YOUR PROJECT WITHOUT FIRST CONSIDERING THE OVERALL INTEGRATION AND PLANNING APPROACH?*

PMBOK

*PRIMARILY CENTERED ON
HIGHER-LEVEL PROJECT MGT
ASPECTS*



Agile
Principles & Practices

*PRIMARILY CENTERED ON
DEVELOPMENT ASPECTS*

ORIGINAL COMMENT FROM GLEN DELES ON LINKEDIN

Impact on the Future of Project Management

1. What is the impact of the agile movement on the future of project management?
2. How does it change the project management role?

Impact on the Future of Project Management:

“In the past, some project managers may have acted as “cooks” – they know how to prepare a limited number of recipes (methodologies) and sometimes do it ‘by the book’”.



”In the future, being a good “cook” may not be good enough and more project managers may need to become “chefs”

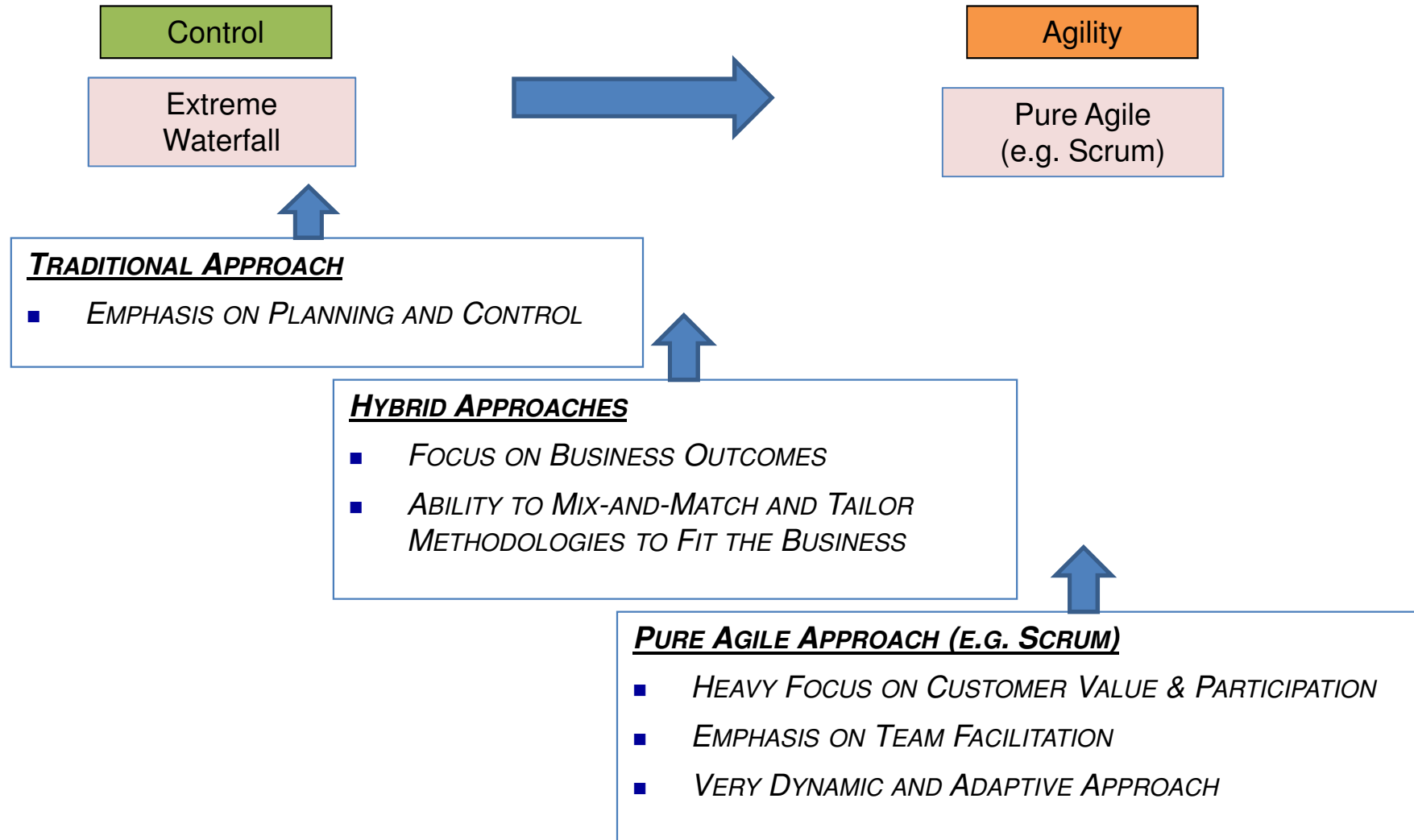


They need to know how to prepare a much broader range of dishes and go beyond preparing standard recipes by the book to create highly customized and innovative “recipes” tailored to fit a particular business and project environment.

“The agile movement forces project managers to consider a much broader range of ‘recipes’ and ‘ingredients’ to ‘cook’ with and requires a much more customized and tailored approach.”

ORIGINAL COOK VS. CHEF ANALOGY FROM BOB WYSOCKI

Project Management Approach



Need to Rethink Definition of “Agile”

- Broader Definition of Agility*:
 - *“THE ABILITY TO CREATE AND **RESPOND TO CHANGE** IN ORDER TO PROFIT IN A TURBULENT GLOBAL BUSINESS ENVIRONMENT*
 - *THE ABILITY TO **QUICKLY REPRIORITIZE** USE OF RESOURCES WHEN REQUIREMENTS, TECHNOLOGY, AND KNOWLEDGE SHIFT*
 - *A VERY **FAST RESPONSE** TO SUDDEN MARKET CHANGES AND EMERGING THREATS BY INTENSIVE CUSTOMER INTERACTION*
 - *USE OF **EVOLUTIONARY, INCREMENTAL, AND ITERATIVE** DELIVERY TO CONVERGE ON AN OPTIMAL CUSTOMER SOLUTION”*

** DEFINITION OF “AGILITY” FROM DR. DAVID F. RICO “LEAN AND AGILE SYSTEMS ENGINEERING”*

Some Common Questions of Agile?

Integration with Waterfall

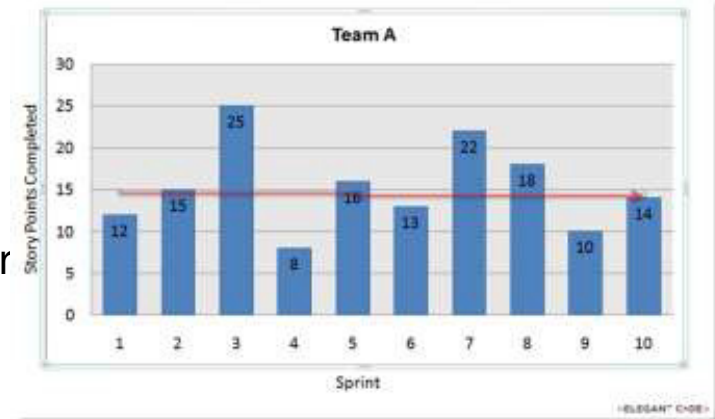
Agile/Scrum Project Costs

Demand Management

Distributed teams vs. Co-location

Funding / Budgeting of Scrum Projects

- **Note: Projects will still have the triple constraints of Schedule, Cost, Scope**
- • Product backlog – provides your scope
- • Every team has a cost
- - 8 team members have avg cost of R300 per/hour
- - 80 hours in a 2 week sprint
- - Avg. cost per Sprint = R192,000
- • Dedicated team = predictable velocity (based on empirical evidence)
- - Velocity = How fast the team can go?
- - Amount of backlog that the team are getting through in an iteration
- • Budget and schedule can be worked out based on velocity
- - Product backlog = 200 Story points
- - Average is 20 Story Points per sprint
- - Therefore, 10 Sprints to complete project = 20 weeks or 5 months at a **cost** of R1,92 million
- • Based on your release plan, you can still price per deliverable



Integration with Waterfall Teams

- • Requires high-level of collaboration
- • Very similar to PMBOK – multiple phases
- — PMBOK requires a lot of up front planning
- — Agile, 5 levels of planning throughout the project
- • Can set up Iteration 0:
 - — Allocate teams
 - — Determine iteration length
 - — Review velocity
 - — Dependencies
 - — Risks
 - — Scheduling and co-ordinating
- • Reporting Progress
 - — % complete
 - — Burn-downs
 - — Earned value
 - — Parking lot diagrams

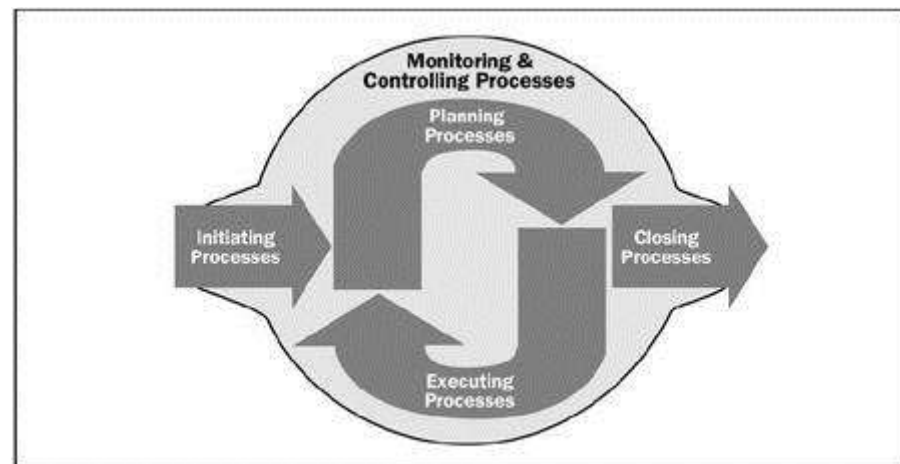
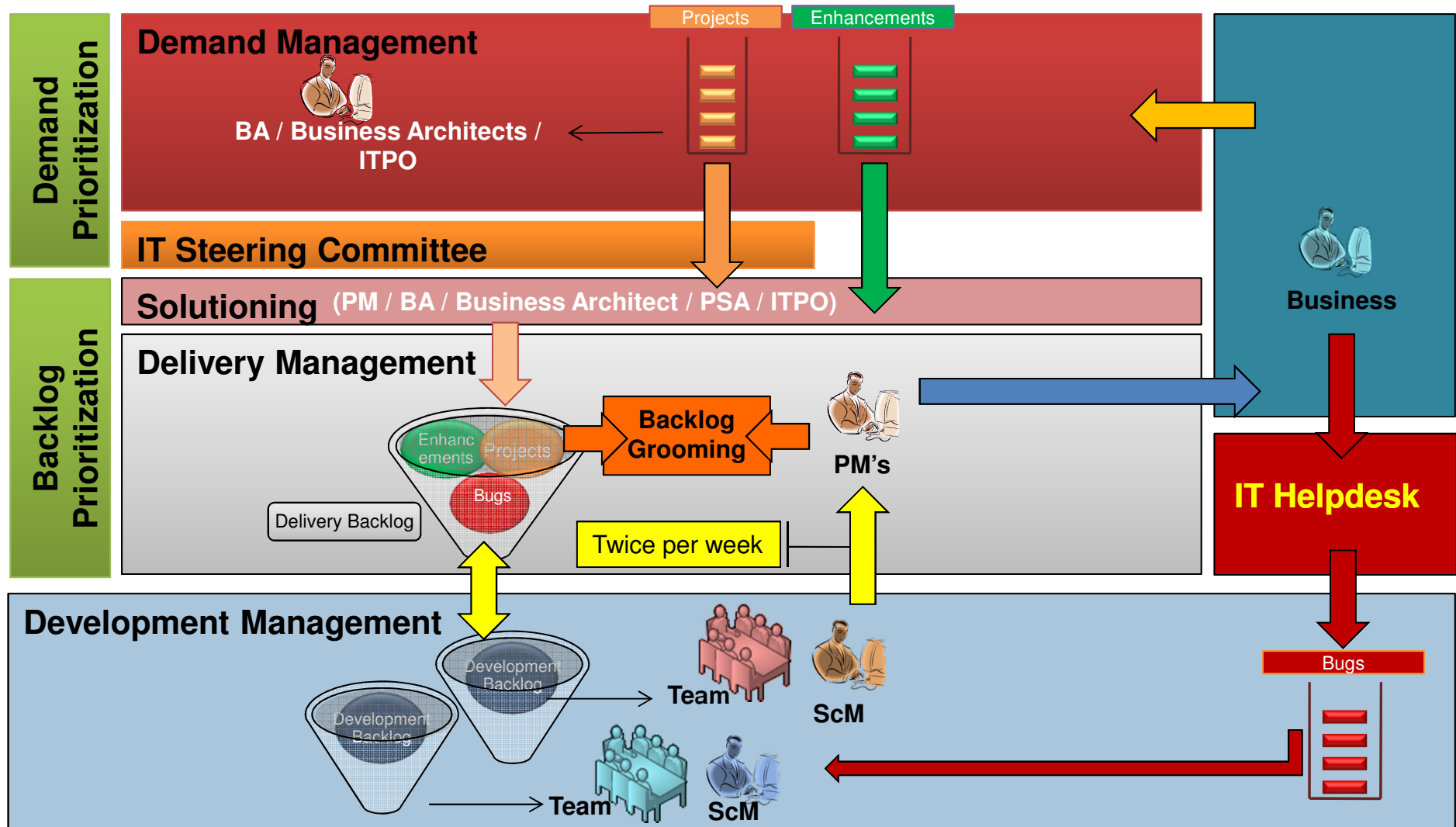
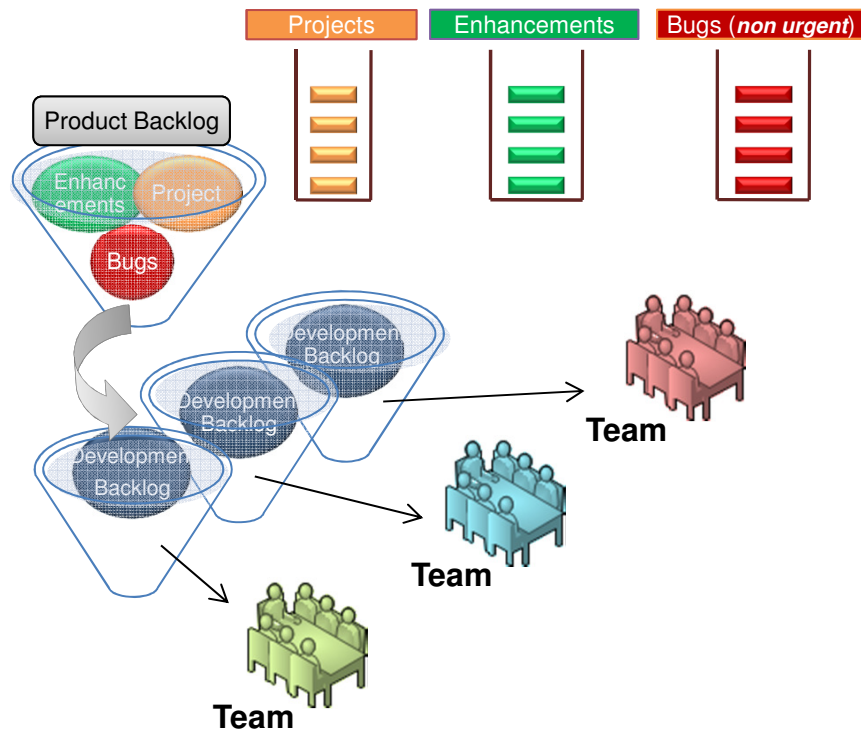


Figure 1 - PMI Project Management Processes

Demand Management



Demand Management continued



PLANNING

- Unpack / Milestones
- Prioritization
- Do not worry about development resources
- You get 1 or more Scrum Masters

BUILD

- PM contracts work out to Scrum Master(s)
- Scrum Master and Team manages tasks
- Scrum Master provides PM with all needed / relevant information
- Scrum Master commits and manages deliverable timelines
- PM / BA – clarify / assist with requirements
- PM provides business communication
- PM enforces methodology
- Scrum Master enforces development processes and best practices

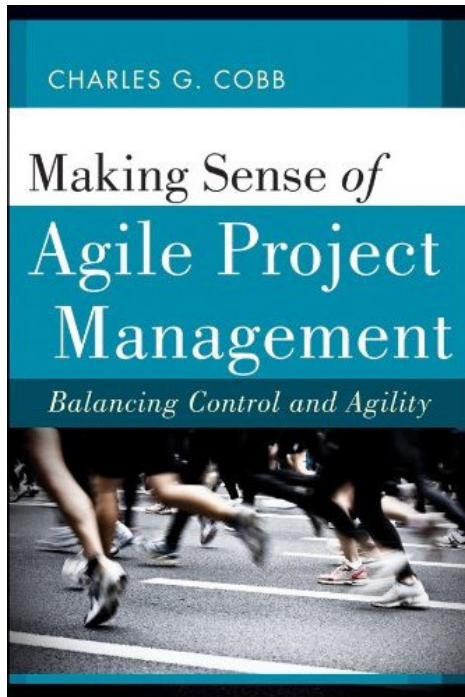
IMPLEMENTATION

- UAT – PM
- Deployment – PM & Scrum Master
- Release Notes – Scrum Master & Team
- Communication - PM

Distributed Teams vs. Co-location

- Co-location is a myth.
- • Collaboration is the key
- • Agile prescribes open communication – co-location facilitates this
- • How do we manage challenges:
 - — Increase collaboration through co-location. e.g.
 - — Flying in key resources early as part of the team formation
 - — Use of Technology
- • Pure off-shore development models do not work – reduced level of collaboration

References



Published by John Wiley and Sons publishing and was released in February 2011.

Biase De Gregorio – IQ Business