

Agile at Baker Hughes Inc.

Enabling project success through
methodology selection

11/19/2010

Introduction



Prashant Patel (CISSP, PMP, CSM) earned a bachelor's degree in Mechanical Engineering from University of Houston and then an MBA at the University of Houston, specializing in Management Information Systems. He has had multiple careers as a pipeline engineer, design engineer and security team lead. For the past 12 years, Prashant has been a member of the enterprise applications team helping Baker Hughes develop, rollout and support various ERP systems. Currently, he is a process manager in the enterprise applications group helping define execution and delivery processes such as release management, change management and project management and the Enterprise IT – Product Development Lifecycle methodology.

<http://www.linkedin.com/pub/prashant-patel/5/745/648>



Rahul Sawhney (CSM, CSP) earned a bachelor's degree in Electronics Engineering from Thapar University, Patiala, India and then a master's degree in Software Systems from Birla Institute of Technology and Science, Pilani, India. He completed management studies from IIM, Kozhikode, India. Rahul has over twelve years of experience including development, testing, project management, release management, consulting, coaching and product & services delivery. In the past he has worked with Tata Consultancy Services and Philips Healthcare. Currently, Rahul works as lead consultant and agile coach at Infosys Technologies. Rahul pioneered the use of agile at Philips Healthcare, Bangalore and has played an active role in definition of Infosys' agile methodology known as InfySwift. He has been associated with the agile journey at Baker Hughes since July 2009.

<http://www.linkedin.com/in/rahulsawhney>

The views expressed in this presentation are our own. They do not necessarily reflect the views of Baker Hughes Inc. and Infosys Technologies Ltd. None of our views should be imputed to either of the organizations we work with.

About Baker Hughes Inc.

| | |
|-------------|------------------|
| Revenues: | \$13 billion |
| R&D: | \$500 million |
| Employees: | 45,000 |
| Facilities: | In 72 countries |
| Operations: | In 90+ countries |

Baker Hughes provides advanced products and services to help customers drill, evaluate, complete and produce oil and gas wells. Baker Hughes' reservoir technology experts offer independent consulting services, geomechanics modeling, petroleum engineering and reservoir simulation services to achieve superior results that lower costs, reduce risk, improve productivity and increase ultimate recovery.

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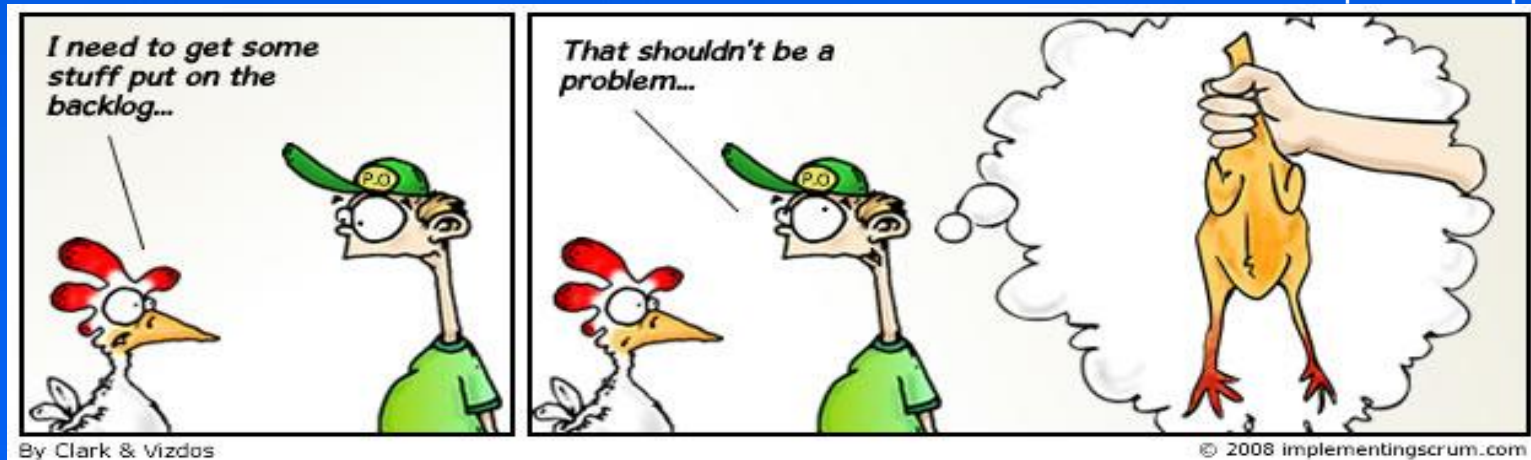
- Where are you today? – 5 minutes
- Background and Context – 5 minutes
- Methodology Selection – 10 minutes
- Methodology Selection Exercise – 20 minutes
- Results and Discussion – 20 minutes

What changes with Agile?

A shift in Mindset



Need for collaboration and partnership



How many methodologies?

- Does your organization support multiple development methodologies?
 - A) Zero (Ad-hoc: what's a methodology?)
 - B) One (one size fits all)
 - C) Two
 - D) Three or more

Percent Agile

- What percent of key organizational projects are delivered using Agile?
 - A) Less than 15%
 - B) 15 – 40 %
 - C) 40 – 90 %
 - D) 90 – 100 %



Background - Agile at Baker Hughes Inc. (BHI)

- Introduced Agile concepts in 2009
 - Formed a team
 - Formalized the methodology (based on Scrum, XP and AUP)
 - Piloted the methodology
- Now running multiple Agile initiatives in the organization

The Tool looks fantastic, this is exactly what I have wanted as it makes entry to the tam data sets very easy. The export to excel certainly is quick and looks easy. The dashboards via GIS Map. Really useful! Obviously I need a bit more time to road test but first inspection is really good at this. It is really quite amazing and very impressive.

*Technical Support Director - Continental Europe
Vice President, Marketing & Business Development Africa*

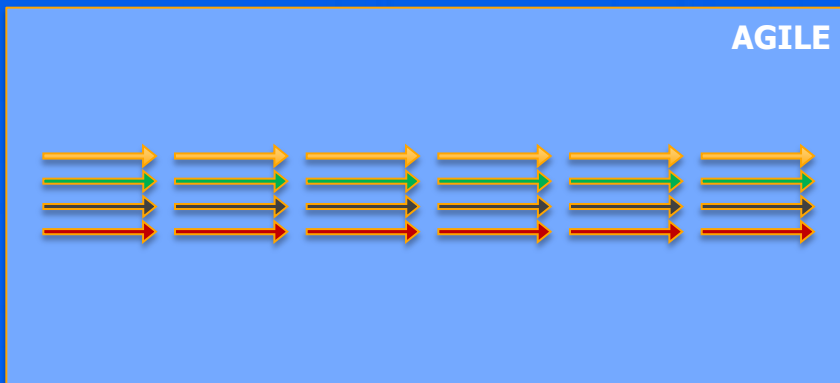
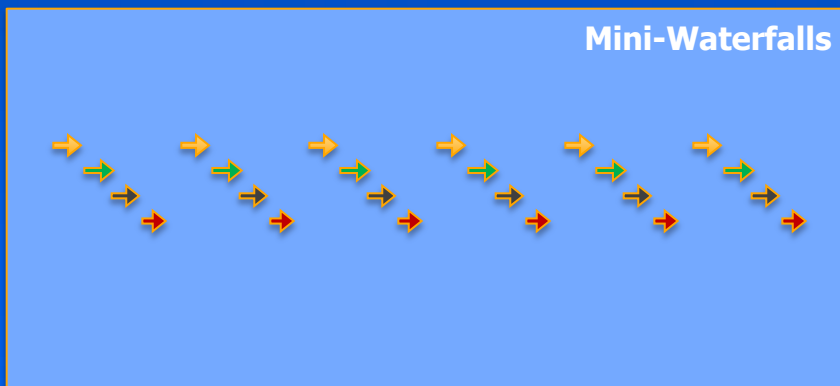
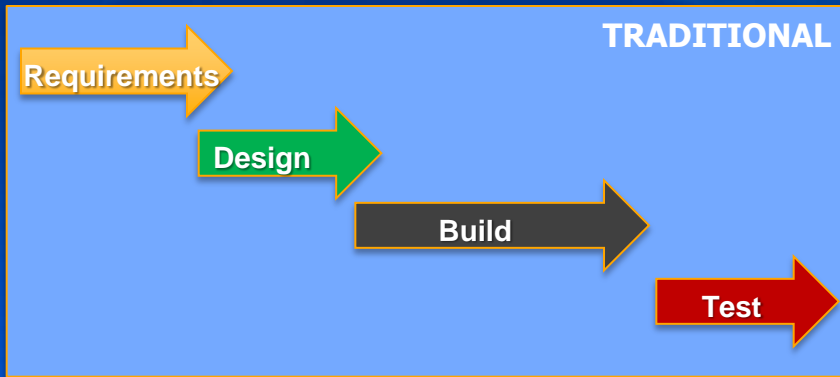
Wrong methodology selection can result in...



Wrong methodology selection can result in...



Wrong methodology execution can result in...



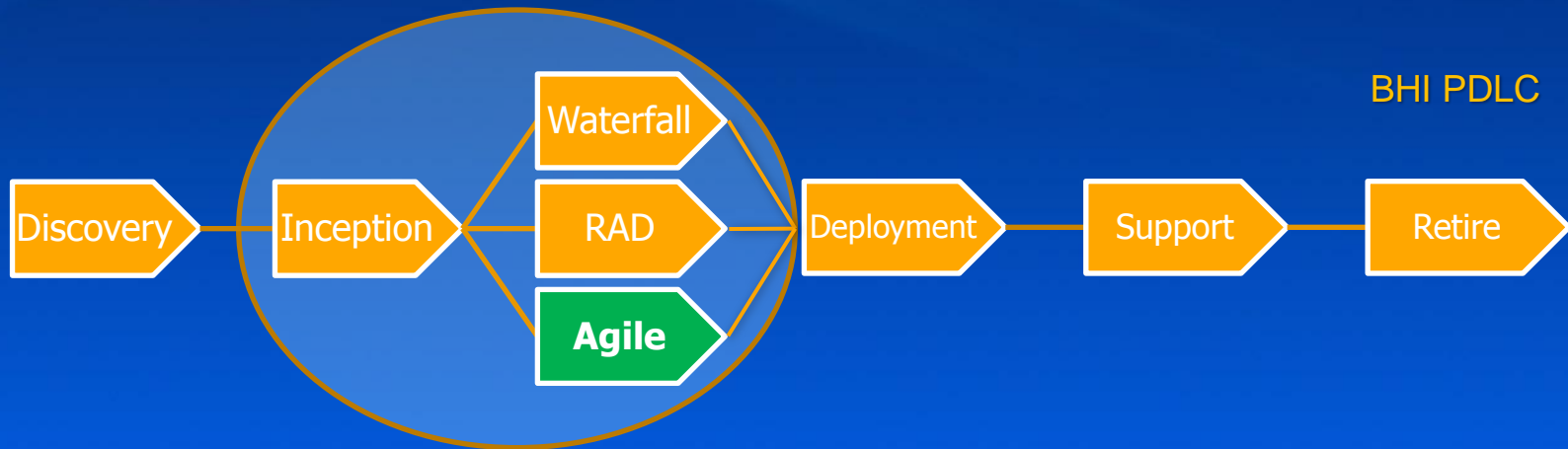
A product/service that does not fulfill its promise



Methodology selection

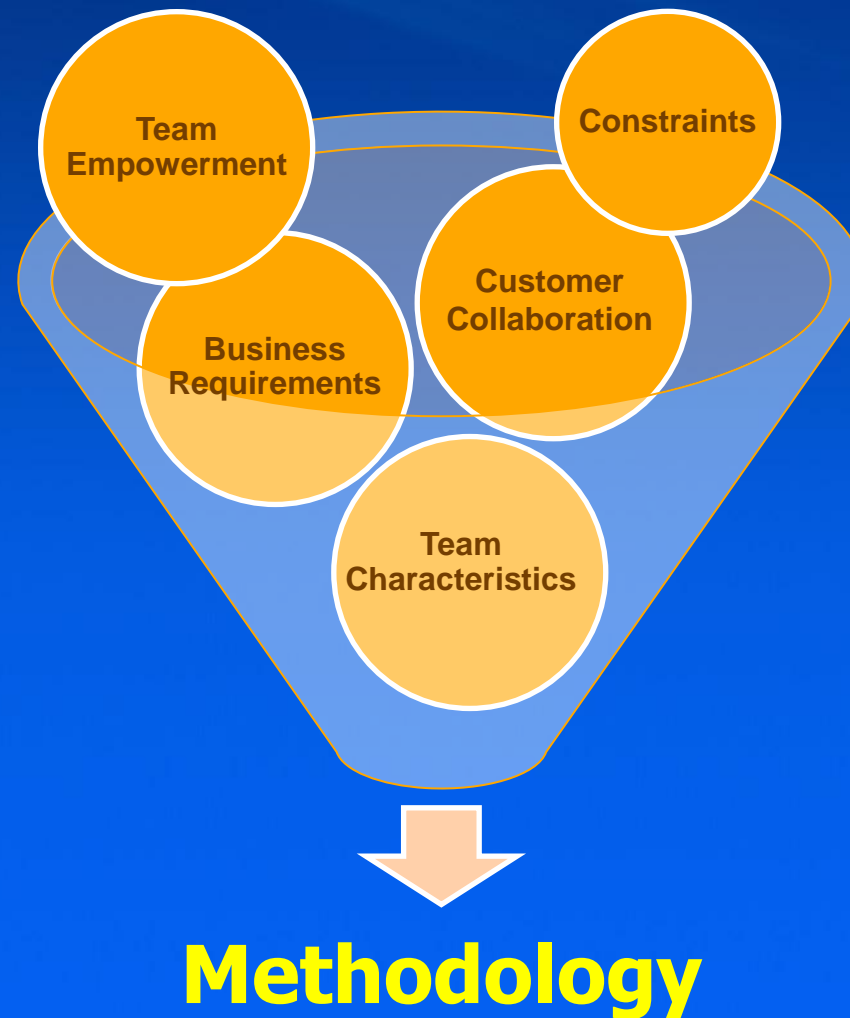


Methodology selection



- ✓ Development teams are engaged during **Inception phase**
- ✓ Methodology selection is required **before** the actual development
- ✓ Suitability matrix is used to **facilitate** the dialog
- ✓ **Multiple stakeholders are involved in the conversation**

Succeeding with Methodology selection



Succeeding with Methodology selection



Collaboration with Business

- Availability of customer representative/business for clarifications
- Scope flexibility and re-prioritization

Succeeding with Methodology selection

Business Requirements

- What is the type of Project?
- Is the business environment prone to continuous change & does it require fast response?
- Is this mission critical project, requiring longer design and testing?
- Project duration
- Resources can be made available for the project



Succeeding with Methodology selection

Team Characteristics

- To what extent are developers and testers acquainted with the business domain and technology?
- How many developers and testers are on the team?
- Does the project have an experienced Agile Coach/Mentor?
- Are team members / vendor involved in executing project well aware and trained in the process?
- Are there multiple teams?

KEYS TO SUCCESS



Succeeding with Methodology selection

Team Empowerment



- Can the Product Owner be clearly identified and would that person have authorization to take quick decisions on project requirements?
- Will the Scrum Master be empowered to protect the team from disruptions while the iteration is in progress?
- Will the team empowered to provide fresh commitment on iteration scope at the beginning of each iteration?

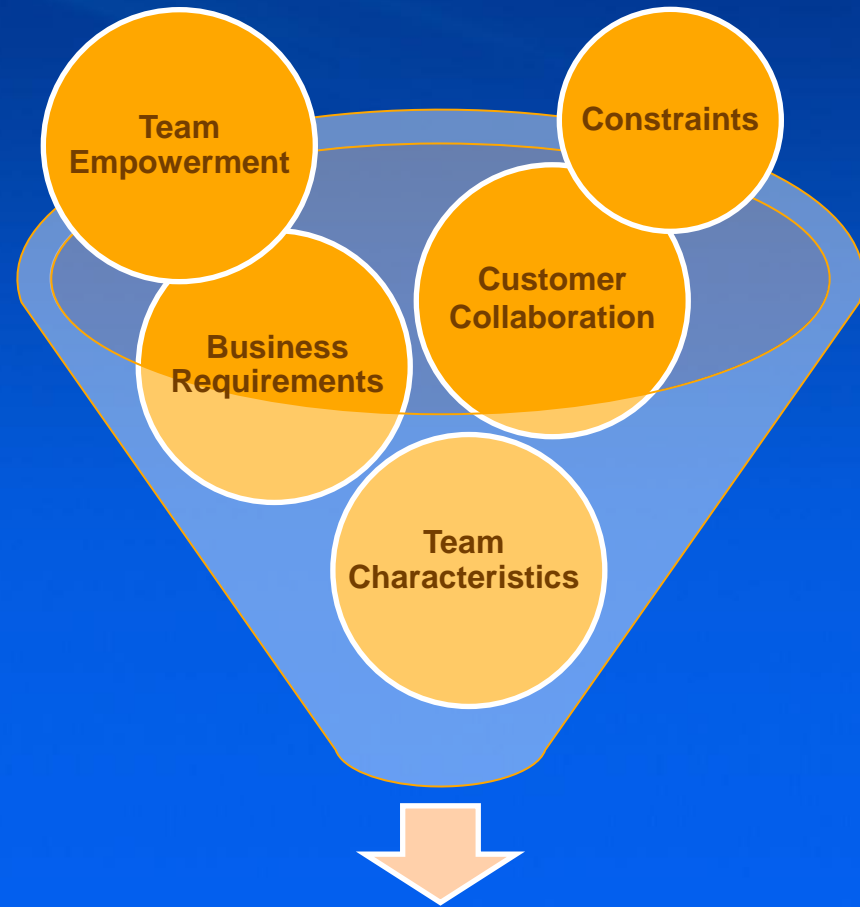
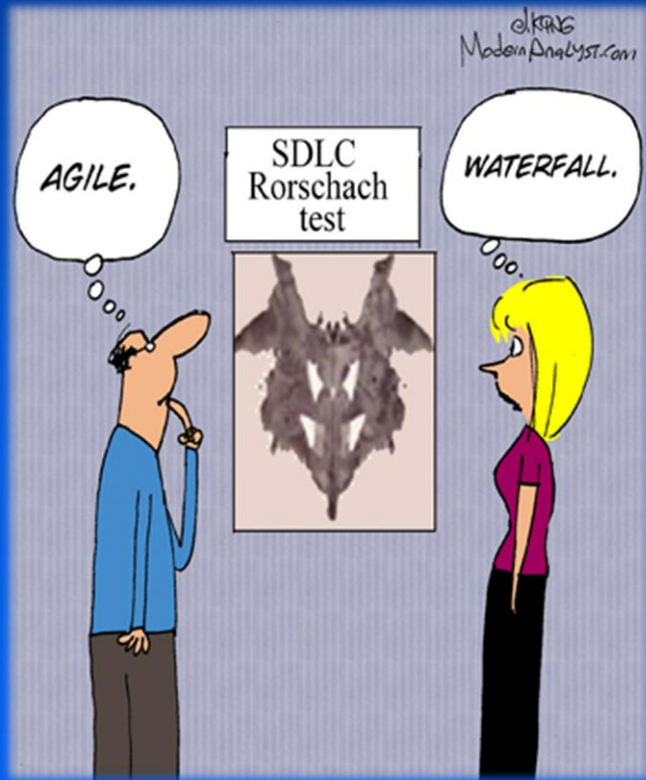
Succeeding with Methodology selection

Constraints



- External dependencies and how they will be handled
- Regulatory requirements mandating heavy documentation
- Resource Allocation and Availability
- Distributed team
- Build and Test Automation

Succeeding with Methodology selection



Decide and Agree

Exercise – Methodology selection

- Roles:
 - Potential Product Owner (To facilitate the meeting)
 - Owns prioritization and scoping
 - Potential Scrum Master
 - Facilitates project execution, removal of impediments
 - Potential Technical Lead
 - Technical mentor
 - Potential Testing Lead
 - Testing and QA mentor
 - Potential Agile Coach (intervene as required)
 - Coach team on Agile practices
 - Potential Technical Team (everyone else in the room)
 - Everything else!
- *Potential, because we have not yet decided on the methodology!*
- Read the Project Context for your team. Assume anything that is not mentioned in your handout
- Assign a rating for each of the parameters. Keep the project context in mind while assigning the score
- Review the score and decide if you would use agile for the project

SDLC Decision Matrix

| | |
|-------|-----------|
| Agile | Not Agile |
|-------|-----------|

| Questions | | Choices | Score | Sum | Max | Red/ Yellow/ Green |
|------------------------|--|--|-------|-----|-----|--------------------|
| Team Empowerment | Can the Product Owner be clearly identified and would that person have authorization to take quick decisions on project requirements? | Yes – 10 No – 0 | | | 30 | |
| | Will the Scrum Master be empowered to protect the team from disruptions while the iteration is in progress? | Yes – 10 No – 0 | | | | |
| | Will the team be empowered to provide fresh commitment on the iteration scope at the beginning of each iteration? | Yes – 10 No – 0 | | | | |
| Customer Collaboration | Will the Product Owner and Customer Representatives be readily available for requirement clarifications and feedback throughout the project? | Yes – 10 No – 0 | | | 30 | |
| | Are Business/Customer flexible towards scope re-prioritization/change based on business value & technical factors for each iteration? | Yes – 10 No – 0 | | | | |
| | Can acceptance criteria be defined before getting schedule commitment for individual requirements? | Yes – 10 No – 0 | | | | |
| Business Requirements | Is the business environment prone to continuous change and does it require fast response? | Yes – 10 No – 0 | | | 30 | |
| | This is not a mission-critical project, and does not require Big-Design. The project is meant for New Development and/or Significant Enhancements. | Yes – 10 No – 0 | | | | |
| | Is the Project duration at least three months? | Yes – 10 No – 0 | | | | |
| Team Characteristics | To what extent are developers and testers acquainted with the business domain, technology and Agile process? | Experienced –10 Aware – 5 Unaware – 0 | | | 30 | |
| | How many developers and testers are on the team? | Five to Nine – 10 Multiple teams of Five to Nine – 5 Anything else – 0 | | | | |
| | Will the project team have an experienced Agile Coach/Mentor supporting it? | Yes – 10 No – 0 | | | | |
| Constraints | How many other projects impact the plans of this project? | Three or less - 5 More than Three - 0 | | | 30 | |
| | Does any regulatory framework, law, etc. mandate heavy documentation for this project? | Yes – 0 No – 5 | | | | |
| | Can key resources (especially developers and testers) be made available full time for the project? | Yes – 5 No – 0 | | | | |
| | Will the Product Owner and Scrum Master be engaged in more than two projects? | Yes – 0 No – 5 | | | | |
| | Will the technology platform allow Automated Builds and Automated Unit Tests? | Yes – 5 No – 0 | | | | |
| | Will the technology platform allow System Test Automation? | Yes – 5 No – 0 | | | | |

How did it go?



How critical is responding to change?



Can your team sustain Agile – Inspect and Adapt?



How will the product evolve?

Making your own Decision Matrix

- Understand your organization and your teams
 - What drives them?
 - What might work and what might fail?
- Customize the checklist
 - Add, modify and remove items
 - Identify important items and assign weights
- Pilot in couple of teams
- Refine continuously



Thank you!