9th Annual Fall ASQ Conference

Risk Mitigation during Software Development

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Why is risk mitigation important?

Increase the odds of success!!

- **Identify high risk components within an application that are more likely to be error prone.**
- **Identify high value components within an application to limit financial damage.**

When does risk assessment start?

At the beginning of the project. How do you know when a project is "high-risk"?

- **Project size is directly proportional to risk. The larger the project in terms of cost, time, scope and number of functional areas involved, the greater the risk.**
- **Technology experience is inversely proportional to project risk. The more experience the development team has, less is the risk.**

Characteristics of a high-risk project

- Specifications are not fully defined.
- Project affects more than one business area or crosses organizational boundaries.
- Project cannot be completed in less than 6 months.
- Team is unfamiliar with chosen methodology, technology and/or architecture.
- Business commitment is low.

Specifications are not adequately defined

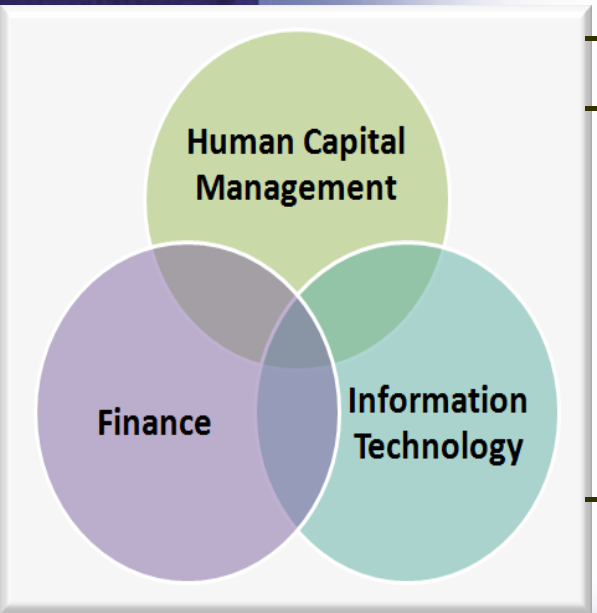
- **Reason:**
  - **Users are not sure what they want.**

- **Solution**
  - **Lean-Agile (Scrum)**
  - **Create wireframes to demonstrate navigation and capabilities.**
  - **Identify capabilities that have the highest value to the user.**
  - **Time-box development and pick the list of product capabilities based on value that can be implemented in the allotted time.**

Affects more than one business area

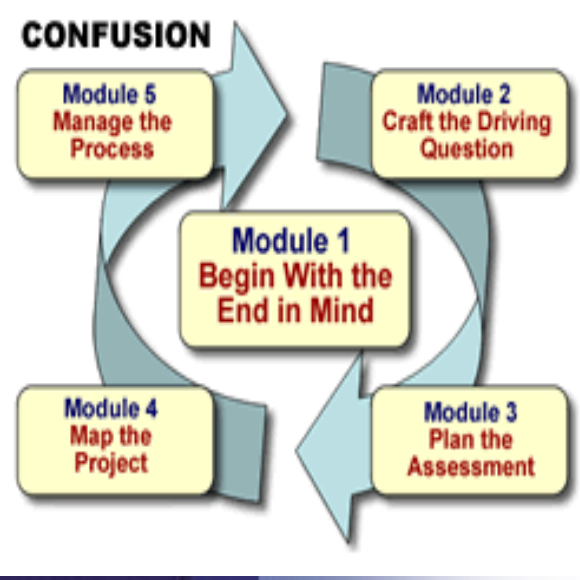
- **Reason**
  - **Inter-dependencies are not fully known.**
  - **Effects on processes and personnel in other areas have not been studied.**

- **Solution**
  - **Lean-Agile (Scrum)**
  - **Form cross functional team.**
    - **Business sponsor – user/customer.**
    - **Product owner(s) from all areas.**
    - **Scrum master.**
    - **Engineering team with required skills in the "performing" phase.**
  - **Scrum master runs JAD sessions.**



Project cannot be completed in less than 6 months.

- **Reason**
  - **Product roadmap has not been clearly flushed out.**



Solution

- **Lean-Agile (Scrum)**
- **Define product by capabilities, not based on tasks.**
- **Identify capabilities that are of most value to the user.**
- **Each capability must be delivered to the user within 2 to 4 weeks based on team velocity.**

Developers are unfamiliar with the chosen technology

- **Reason**
  - Use of bleeding-edge, unproven technology.
  - Engineers are unfamiliar and not trained in the new technology.
- **Solution**
  - Hire an experienced consultant to lead the project.
  - Turn the project over to a vendor who specializes in the technology.
  - Train project team in the chosen technology.
  - Design tests to specifically assess the effectiveness and suitability of the new technology.

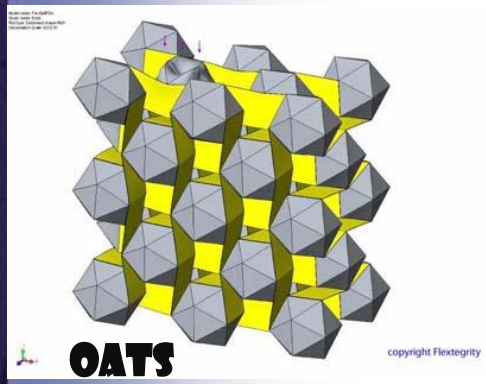
Business commitment is low

- **Reason**
  - **Product value to the business is questionable.**
- **Solution**
  - **Get product sponsors to champion the project.**
  - **Otherwise kill the project. Get out!!**

Summary

- Learned to identify some of the signs that make a project inherently high-risk.
- Defined probable reasons for the high-risk nature of a project.

How do you create working software?



WORKING SOFTWARE

SCRUM

TDD

ALL CODE IS GUILTY UNTIL PROVEN INNOCENT

CODESMACK

Lean-Agile (Scrum)

- Team fully committed

- Focus on working software at every iteration

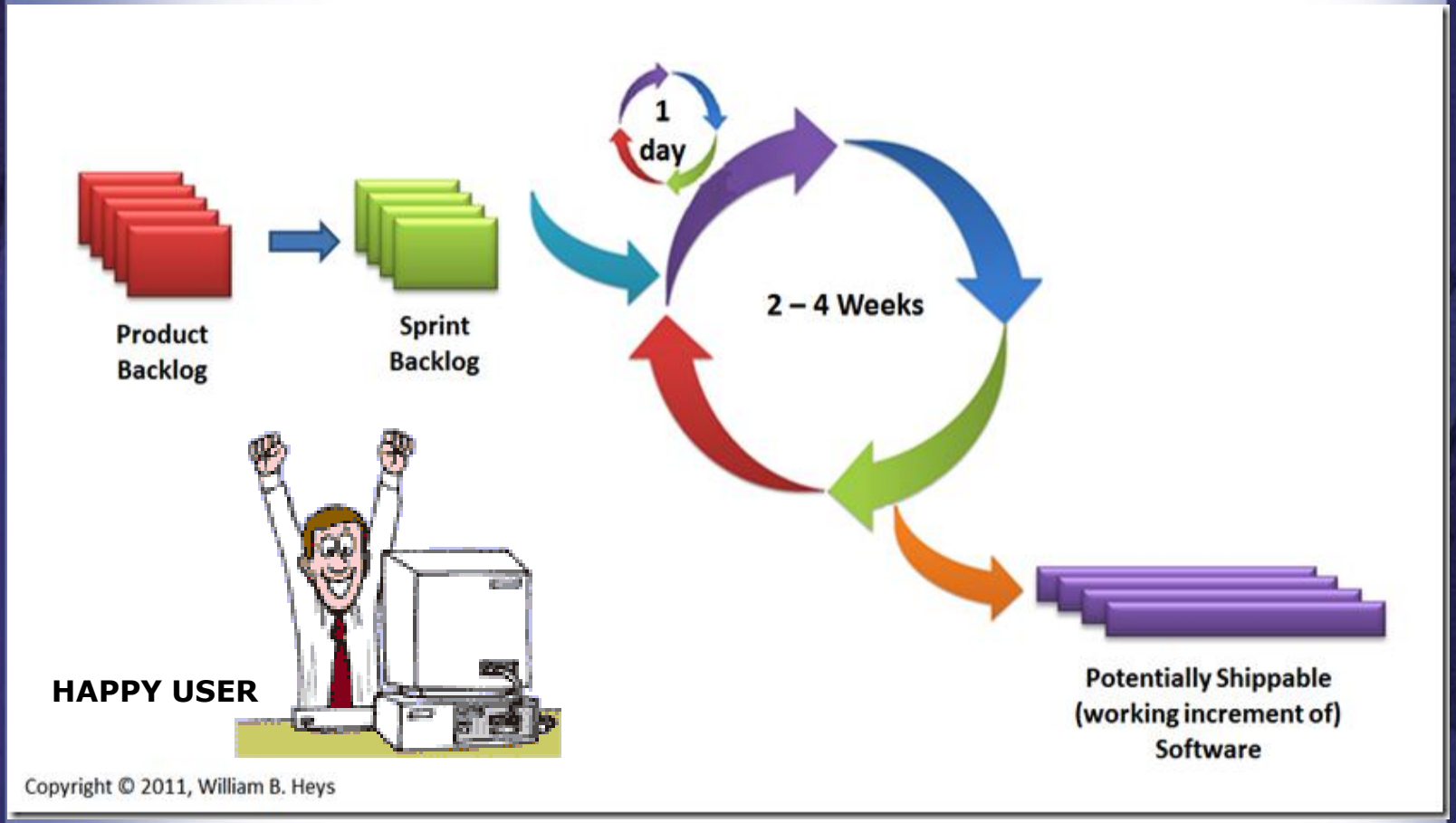
- Encourage customer collaboration

Lean-Agile (Scrum)

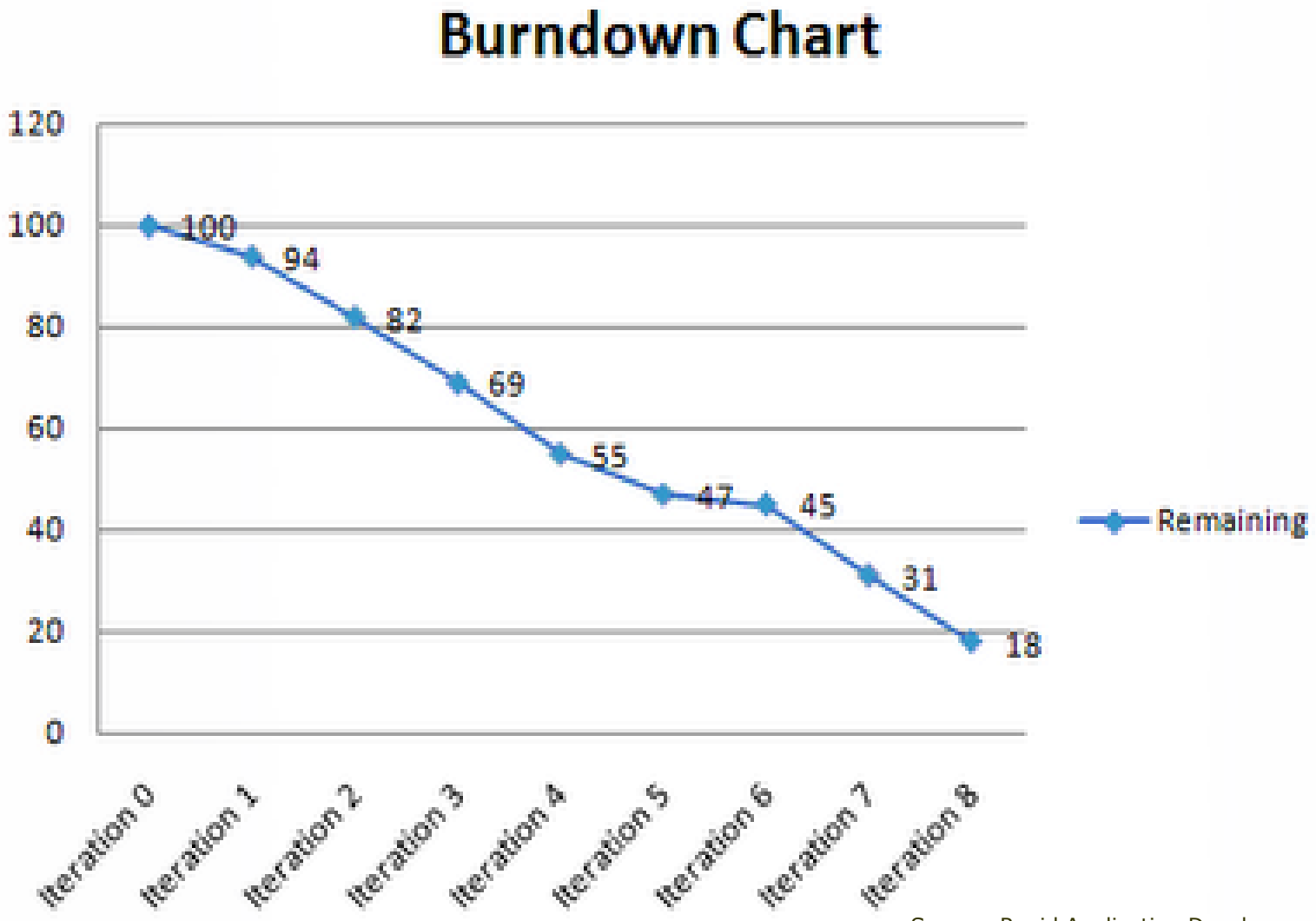
We need pigs on our team not chickens

Key principles of Scrum

- Eliminate waste
- Build quality in
- Defer commitment
- Deliver fast



Measure progress – burndown



Source: Rapid Application Development

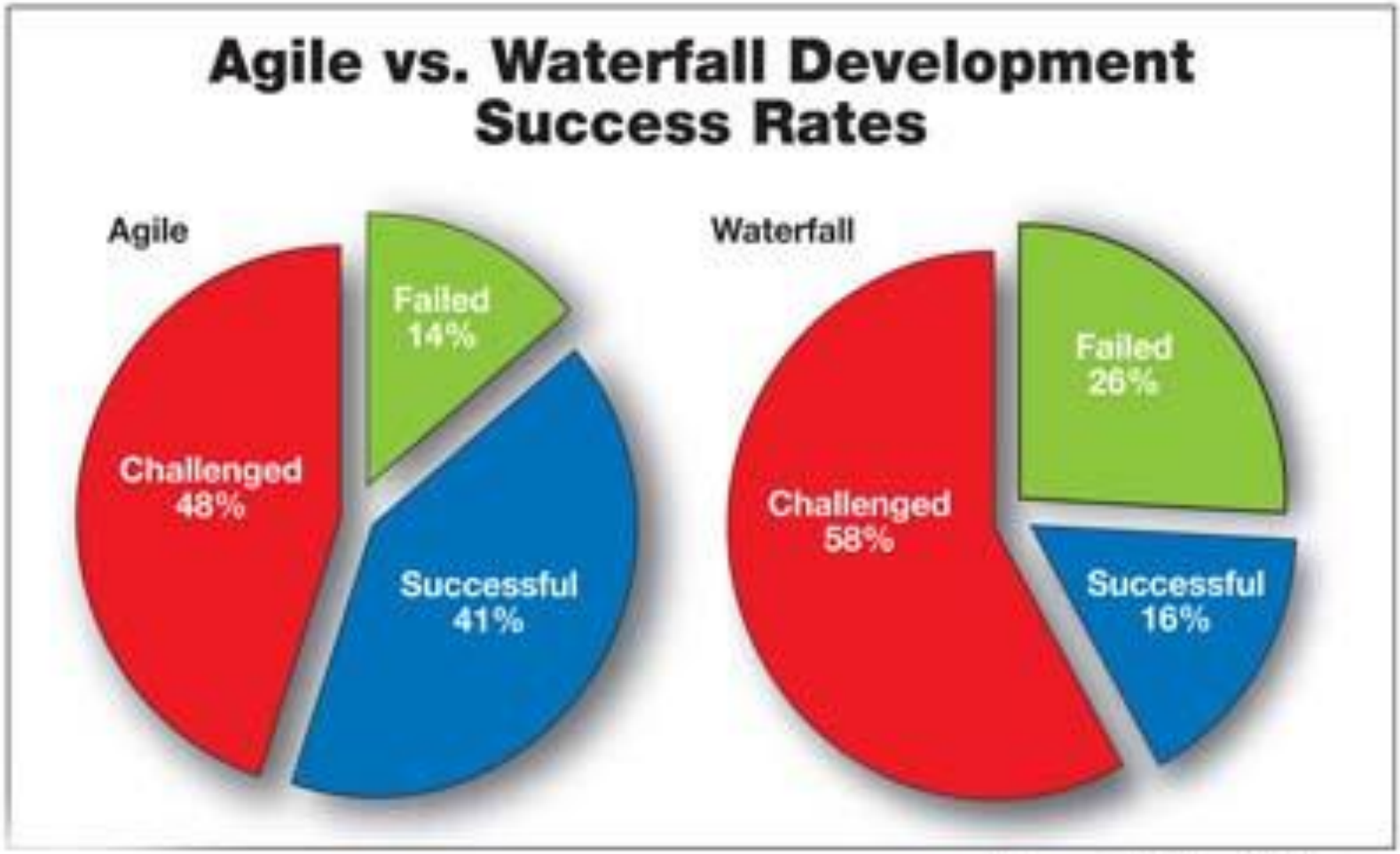
How have we managed risk?

- At the end of each iteration (2 to 4 weeks) we have a shippable product.
- It is an approach where capabilities are incrementally implemented in every successive iteration based on value to the user.
- At every iteration the work and the process are improved.
- Scrum is a starting point. There is no end state because of continuous improvement. The development stops when the user says the product is usable (or shippable).

Start a Lean-Agile software pilot in your company

- Clarify and define your values. You cannot lead if you don't know what you stand for.
- Ensure that the project is aligned with your organization's priorities and you have strong C-level support.
- Lean-Agile's success rate is much higher than traditional methods.

Lean-Agile guarantees success



Thank you.

Questions?

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