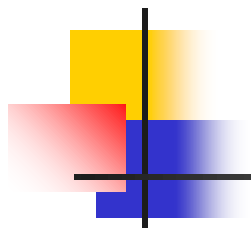




Systems Development Evolution At The ERIE

Eric Bach
Technology Architect
Erie Insurance Group



My Background



IT Roles at The ERIE

- Business Analyst
- User Experience Analyst
- Software Engineer
- Data Architect (Modeler)
- Project Manager
- Infrastructure Engineer
- Quality Control Engineer
- Technology Architect
- Solution Architect
- Enterprise Architect



IT Roles at The ERIE

- Business Analyst
- User Experience Analyst
- Software Engineer
- Data Architect (Modeler)
- Project Manager
- Infrastructure Engineer
- Quality Control Engineer
- Technology Architect
- Solution Architect
- Enterprise Architect



Many Roles, Single Purpose

Support The Stakeholders!



Who is Winston Royce?



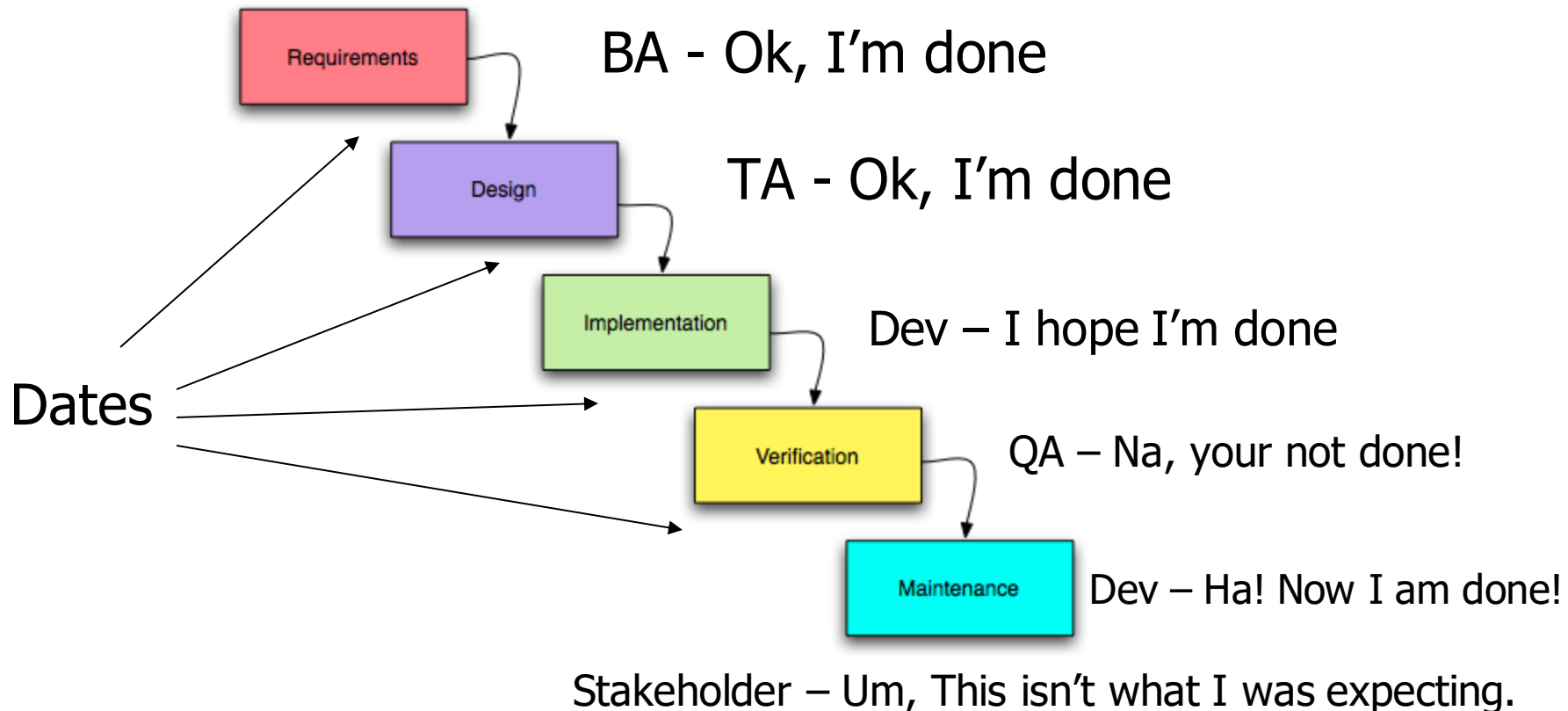


Waterfall Development Methodology

- Conceived in 1970
- Used by the Department of Defense
- Was not the “whole story”
- Adopted by many other companies, including Erie Insurance

Waterfall Model "The DATE"

Give me your best guess. I won't hold you to it (*Yeah Right!*)





Negative Side Effects

- Underutilized Resources
- The Blame Game
- Analysis Paralysis
- Heroes Required
- Unexpected Rejection of Deliverables
- Credibility Killer
- Estimate Inflation



Card Assignment Exercise #1

(5 minutes)

- **Assign roles: Stakeholder, Analyst, Developer, Tester**
- **The Stakeholder comes to the front of the room for directions. Everyone else, get to know each other and read the rest of this slide.**
- **Follow these steps to create the greeting card:**
 1. Analyst interviews stakeholder (2 minutes), producing requirements document. Everyone else may listen but not speak.
 2. Analyst hands over requirements document to development team (designer and developers). Modeler and Stakeholder now quiet.
 3. Developers create card (2 minutes). QA Tester watches.
 4. Developers provide card and original requirements document to the tester.
 5. Tester inspects card and suggests improvements (30 seconds).
 6. Developers “fix” card (30 seconds).
 7. Developers provide card to the stakeholder.
 8. Stakeholder rates the end product.



There Must Be A Better Way

Any Ideas?





Agile XP Development Methodology

- Conceived by Kent Beck in 2001
- Used at Chrysler for Comprehensive Compensation project (C3)
- “Extreme” focuses on lightweight modeling and documentation (self-documenting tests and code, Whiteboard Modeling).



Characteristics Of Agile XP Development Methodology

- 100% engagement of all resources from the start
- Small iterations (2 Weeks)
- Measurable performance (Velocity)
- High probability of acceptance
- Higher quality deliverables



Card Assignment Exercise #2

(3 x 1.5 minutes = 4.5 minutes)

Same roles as before, but we will do this 3-times.

1. Analyst interviews stakeholder to understand requirements (30 seconds)
2. Developers work on card (30 seconds)
3. Tester inspects card (10 seconds)
4. Developers update card (10 seconds)
5. Developers present card to stakeholder (10 seconds) who indicates what they like and dislike.
6. Return to step 1. Modeler will get additional requirements for what the Stakeholder does not like.
7. Stakeholder rates the end product



Agile XP at Work

- Formation of stories
- Estimation of stories
- Planning & Re-planning
- Frequent feedback on software artifacts
- Forces sponsor decision making
- Velocity predicts an end date forcing constant re-alignment of priorities



The Story Card

Front

1 Value Function/Feature Name
--

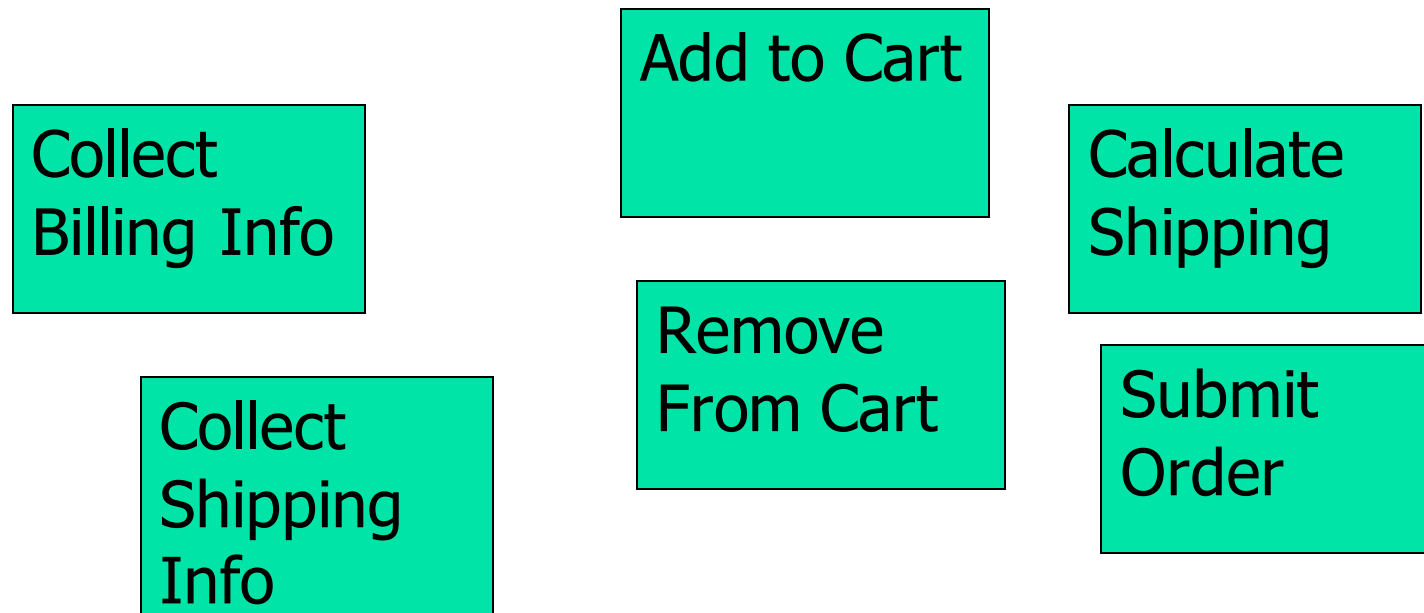
Back

- Requirement 1 - Requirement 2 - Requirement 3 - Etc...



The Art of Agile Estimation

- No Talking Please!
- Touch No More Than Twice





Estimating Functionality

1

Add to Cart

Remove
From Cart

2

Calculate
Shipping

Collect
Shipping
Info

3

Collect
Billing Info

5

Submit
Order

8

Verify Bank
Account



The Plan

Iteration 1

1
Add to Cart

2
Calculate Shipping

2
Collect Shipping Info

Iteration 2

3
Collect Billing Info

1
Remove From Cart

Iteration 3

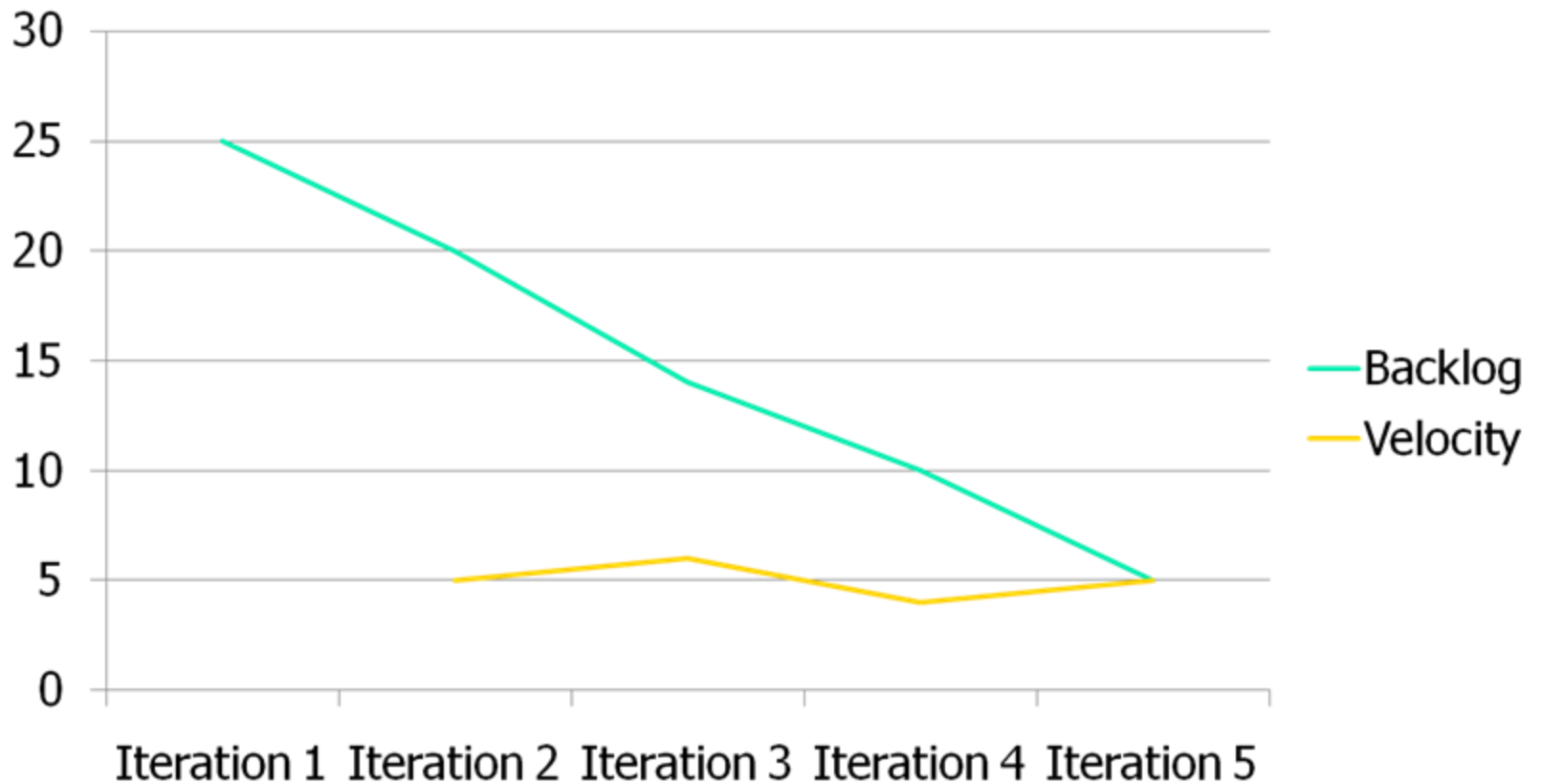
5
Submit Order

Iteration 4

8
Verify Bank Account



The Burn-Down Chart





We have delivered, now what?

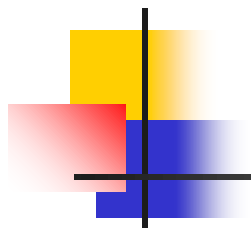
The care and feeding begins

- . Refactoring, evolution, microservices
- . Boy scout rule
- . Technologically staying relevant (Currency)

Light-Weight Modeling, an example...

- Iteration 0 – Envisioning
 - Product Box
- Iteration 1 to N
 - Whiteboarding
 - Paper Prototyping





QUESTIONS?