



# Agile Metrics to Boost Quality Improvement

*What are the proper blood markers to measure health for Agile?*



## Chicago Quality Assurance Association (CQAA)

- Member of the QAI Global Community.
- Advocates of Quality and Process Management in Information Technology.

# XBOSoft

## Dedicated to Software Quality Improvement

Founded in 2006

### Totally Focused on:

- Software QA consulting
- Software testing

Global team with offices in  
San Francisco & Beijing

# Stand Up Meeting!

- Participants other than the speakers are muted
- Ask questions in the Zoom chat or questions panel
- Questions may be asked throughout the webinar - we'll try to answer them at the end if we don't get to them during the webinar
- You'll receive info on recording link after the webinar
- **Ask questions and participate - I'll ask questions too 😊**
- **Webinar Hashtag: #AgileQualityMetrics**

# What You'll Learn Today (The Power of 3)

1. Examine why, and what to measure the success and progress of our quality in Agile.
2. What you should be looking at besides defects to measure the processes and actions that generate software quality.
3. What are the alternative realities of a particular metric? In other words, what are the possible conclusions outside of the obvious?

# Meet Our Speaker



Philip Lew

CEO and Founder, XBOSoft

- Relevant specialties and passions
  - Software quality process, evaluation, measurement and improvement
  - Software quality in use / UX design
  - Mobile User Experience and usability
  - Cycling and travel

# Meet Our Special Guest Speaker

Cheney Ma

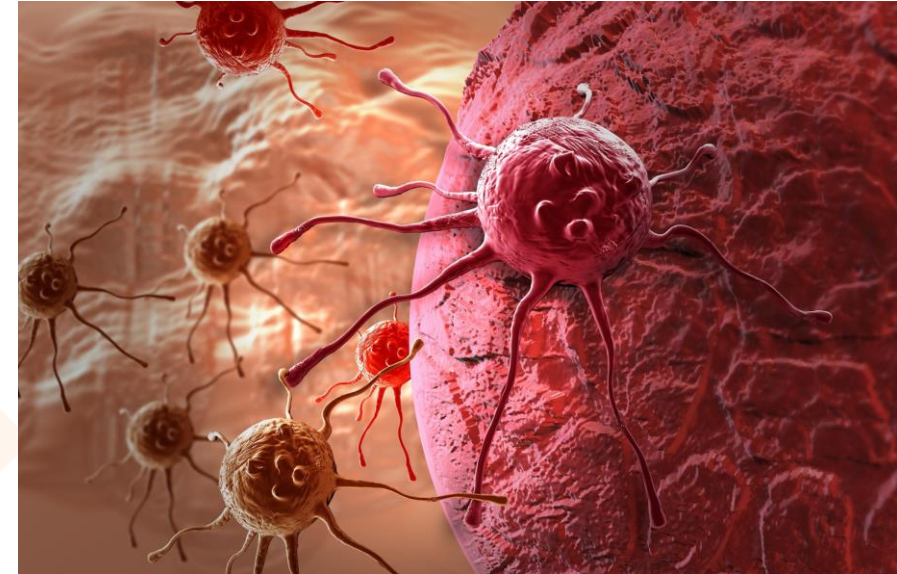
Product Manager, GoldFinger Holdings



- Relevant specialties and passions
  - Test planning, setting up QA processes, procedures and tools, defect tracking and analysis, and test reporting. Wealth of experience in working with both Waterfall and Agile development methodologies
  - Certified Project Management Professional (PMP).
  - Product manager for SynapseRT test management plugin for JIRA.
  - Atlassian Certified Professional JIRA Administrator (GURU)



# The 3 Biggest Killers



*Centenarians get these diseases too, but later...  
The problem is... Once you get them, it's too  
late.*

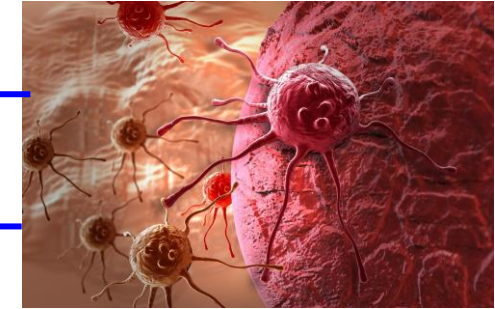
# Do You Get a Health Check up?

1. How often do you weigh yourself
2. How often do you check your blood pressure
3. How often to you get a blood test
4. How much do you sleep



# Common Blood Markers

1. A1C (HbA1C): Blood sugar over last 2-3 months
2. Alanine Transaminase (ALT)
3. CRP : C Reactive Protein
4. IRS-1 : Insulin Receptor Substrate
5. PSA : Prostate Specific Antigen



# Take Responsibility To Understand Your Metrics

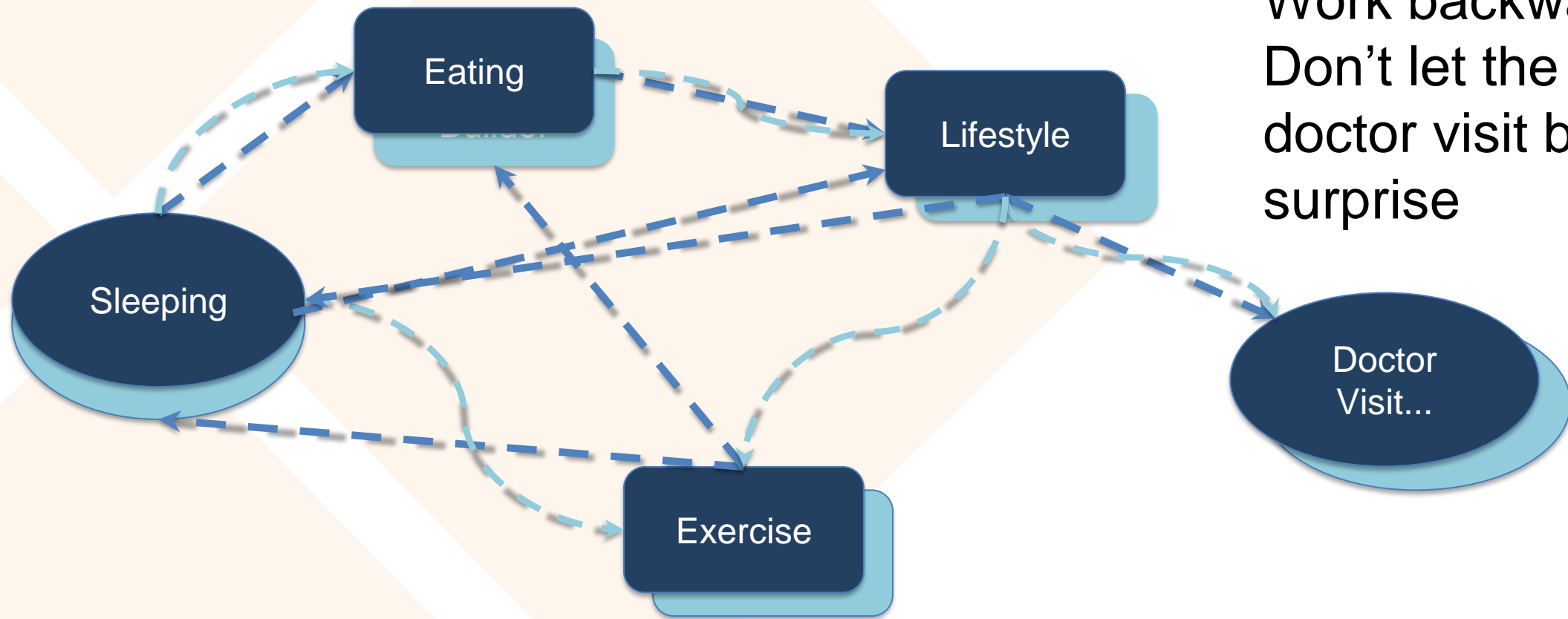
Don't trust your doctor to tell you what is "normal".

1. They only memorize statistical averages and medians.
2. In the 1960's the average American male weighed 166 pounds.
3. Today, the average American male weighs 197 pounds.



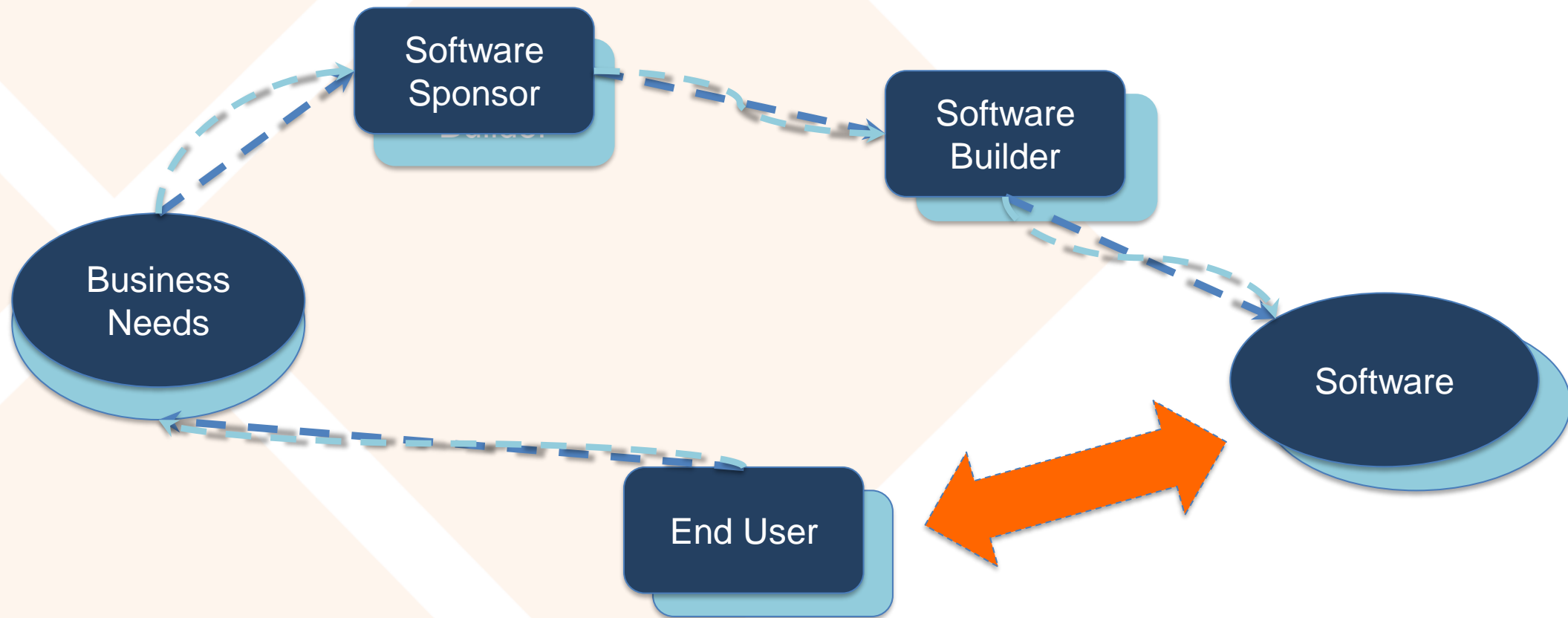
*What does this tell you?*

# The Long Road to Health



Work backwards,  
Don't let the  
doctor visit be a  
surprise

# The Long Road to Software Delivery

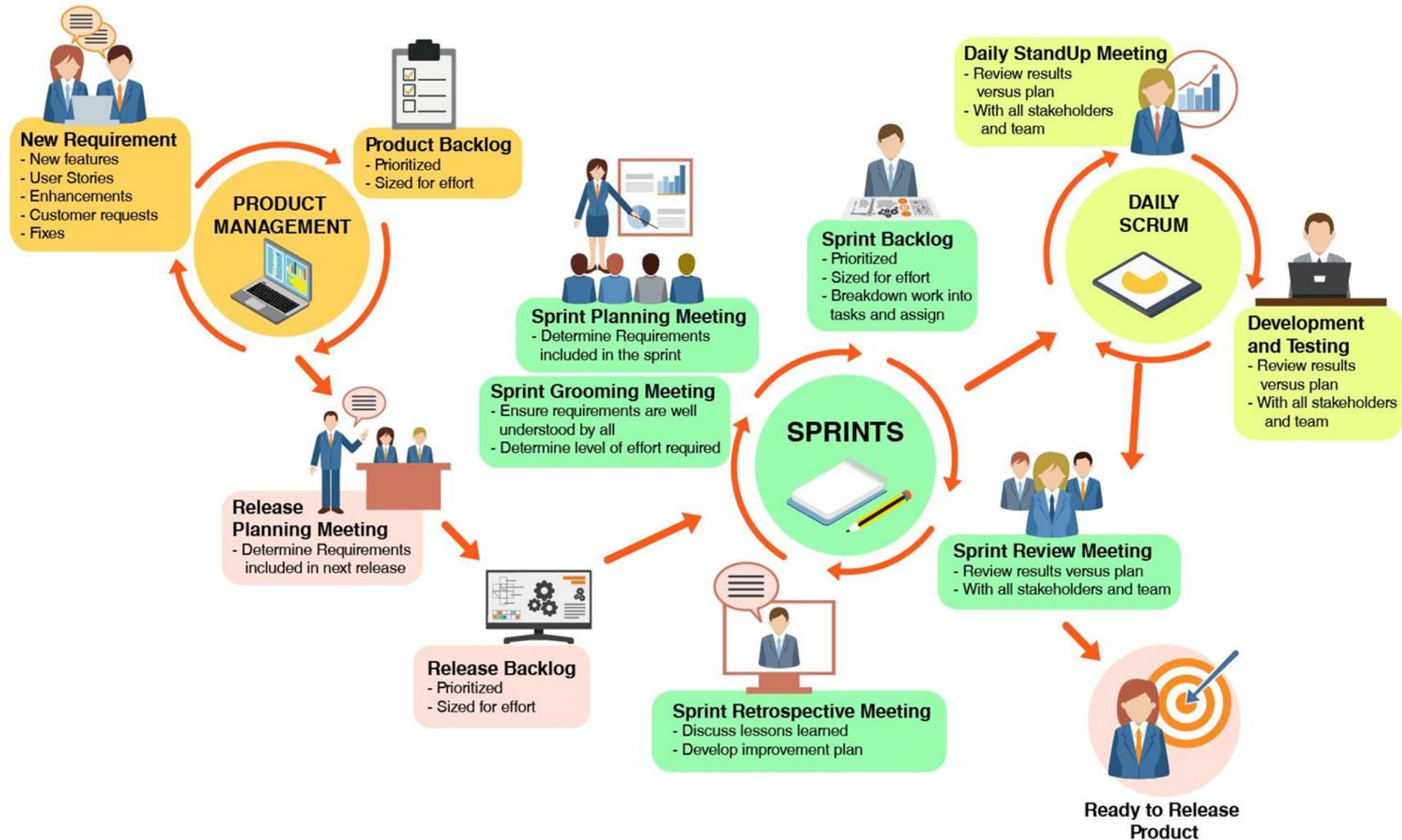


# The 3 Biggest Killers

1. Late or incomplete delivery
2. Poor quality
3. Features that users don't want, need, or different than they thought



# Where are the Metrics in Agile?





# Problems with Metrics

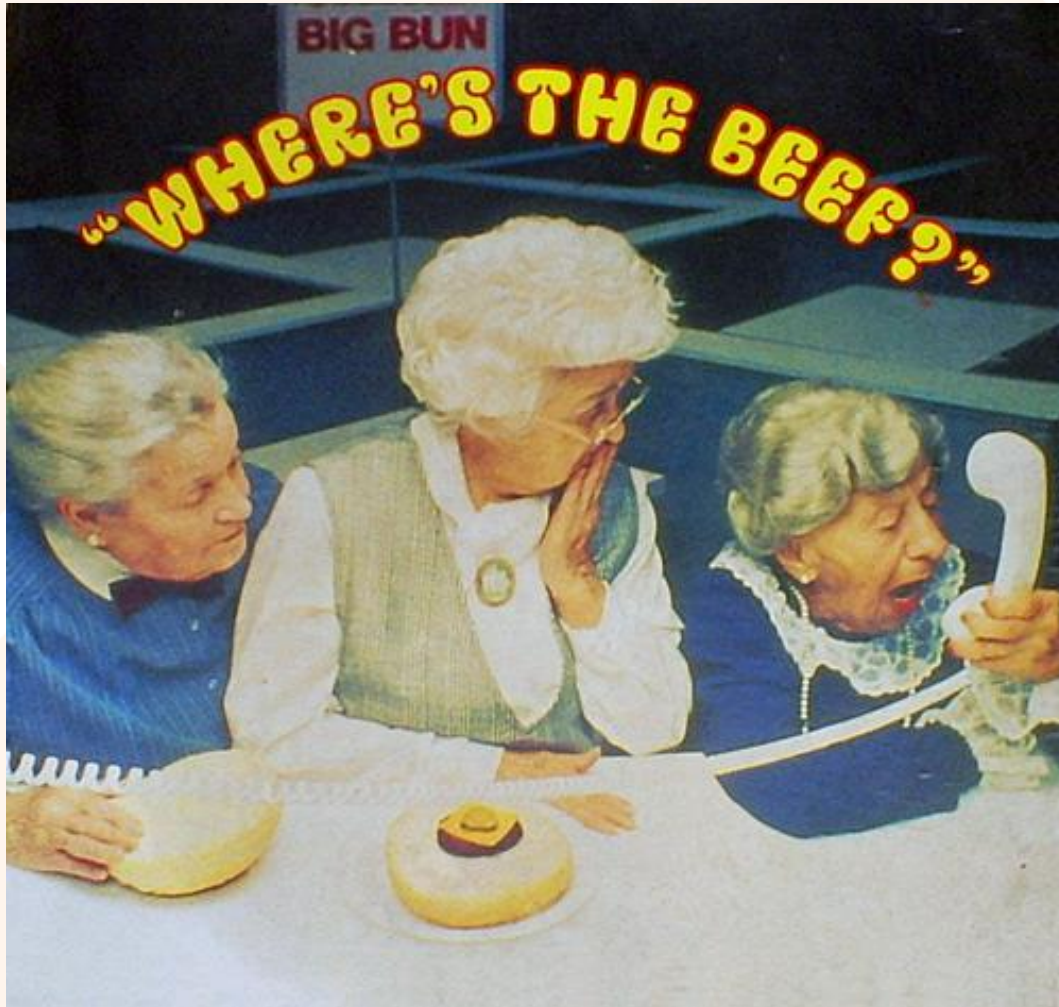
- Don't know what to measure
- Takes time and effort to collect
- Inconsistent, not repeatable... therefore unreliable
- Not sure what to do after we have them
  - So what?
  - Afraid what management will do with them
- ?

# Let's Look at Agile

- Individuals and **interactions** **over** processes and tools
- **Working software** **over** comprehensive documentation
- Customer **collaboration** **over** contract negotiation
- Responding to **change** **over** following a “plan”

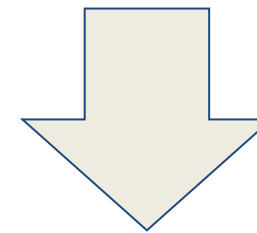
~~Over~~ = None

## Where's the Beef?



## Where's the Quality? What can we measure?

- Interactions and collaboration
- Change



Working software

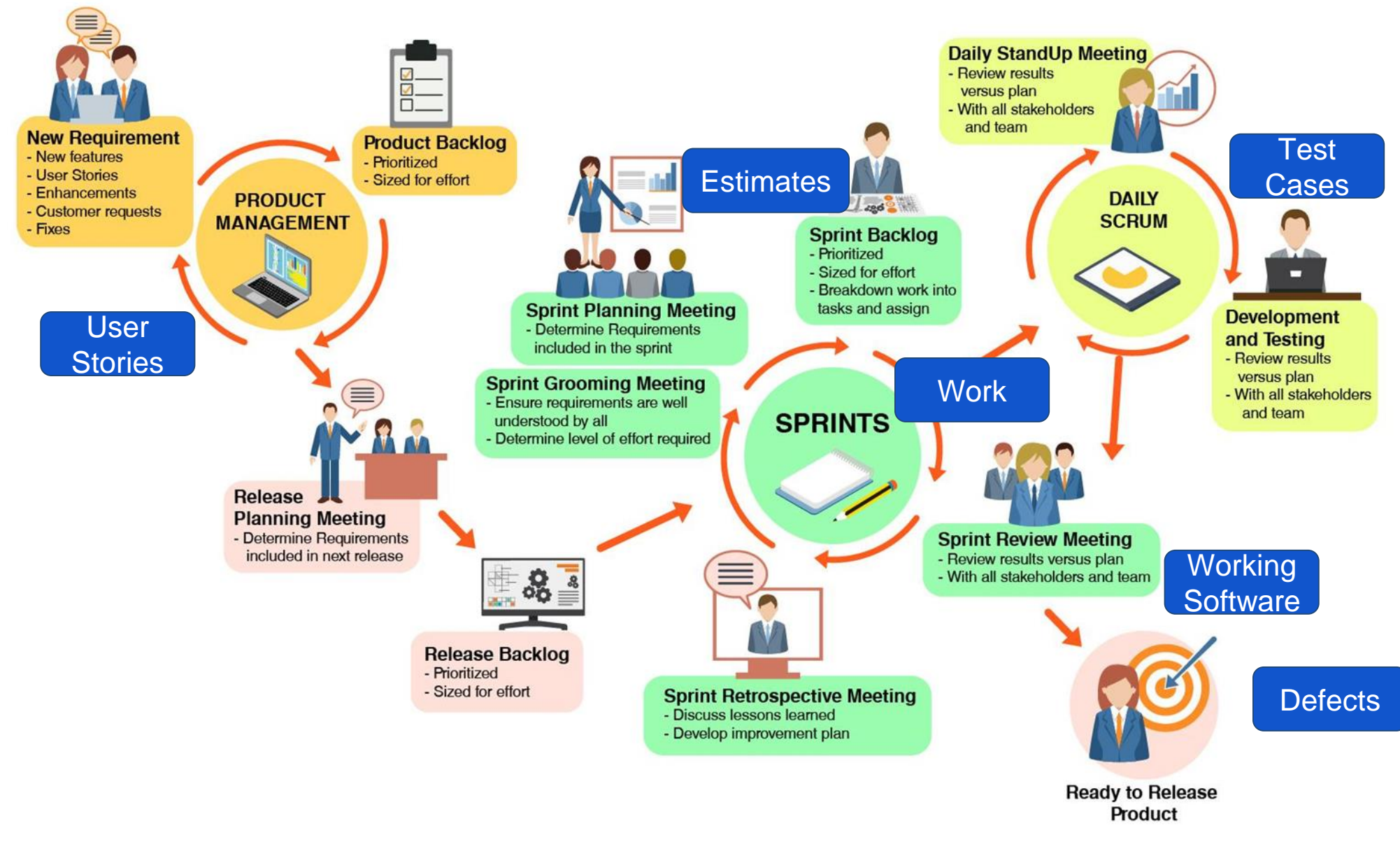
# Getting Started with Metric Solutions

- Don't know what to measure
- Take time and effort to collect
- Inconsistent, not repeatable... therefore unreliable
- Not sure what to do after we have them
  - So what?
  - Afraid what management will do with them
- Examine your process and it's intermediate steps/work products
- Develop measurements for process **characteristics** you want
  - Velocity... But what else?
  - What characteristics would represent a successful process?
- Improve/change the process
- Measure the process, not the people



# Typical Scrum Workflow

What parts of the process do you think matter enough to measure?



# Step by Step

1. Determine your work products
2. Recognize that one work product affects other work products
3. Examine your work products:
  - a. Valuable
  - b. Accurate
  - c. Complete

User  
Stories

Estimates

Work  
Tasks

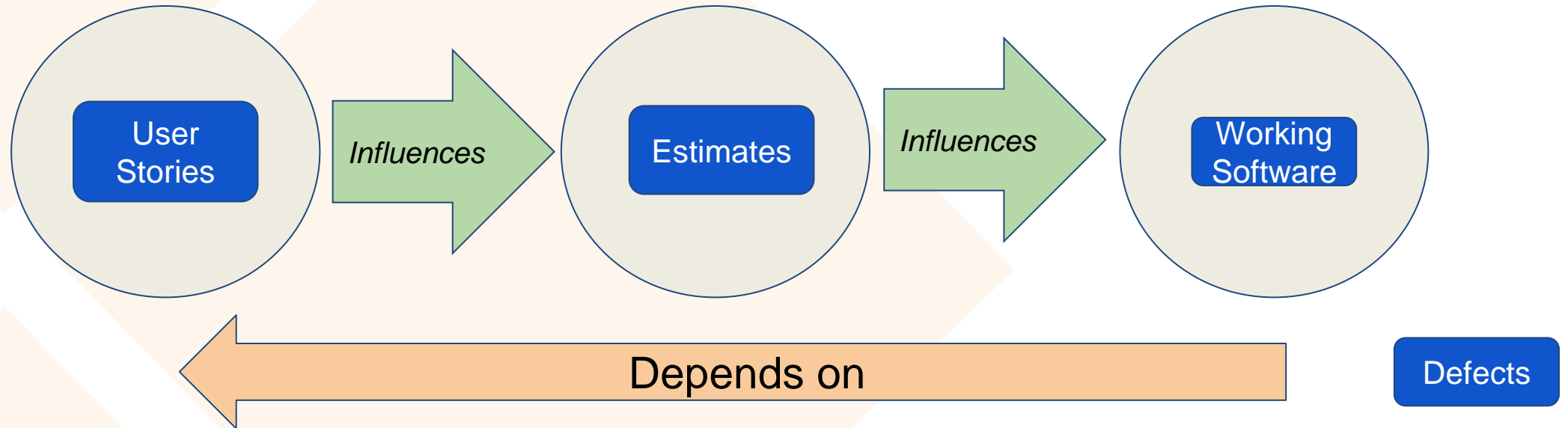
Test  
Cases

Working  
Software

Defects



# One Work Product Influences the Others



What are the key characteristics of each work product that would affect the overall quality of the product or the next work product?

# Examine The Quality of Your Work Products

- Valuable
- Accurate
- Complete

User  
Stories

Estimates

Work  
Tasks

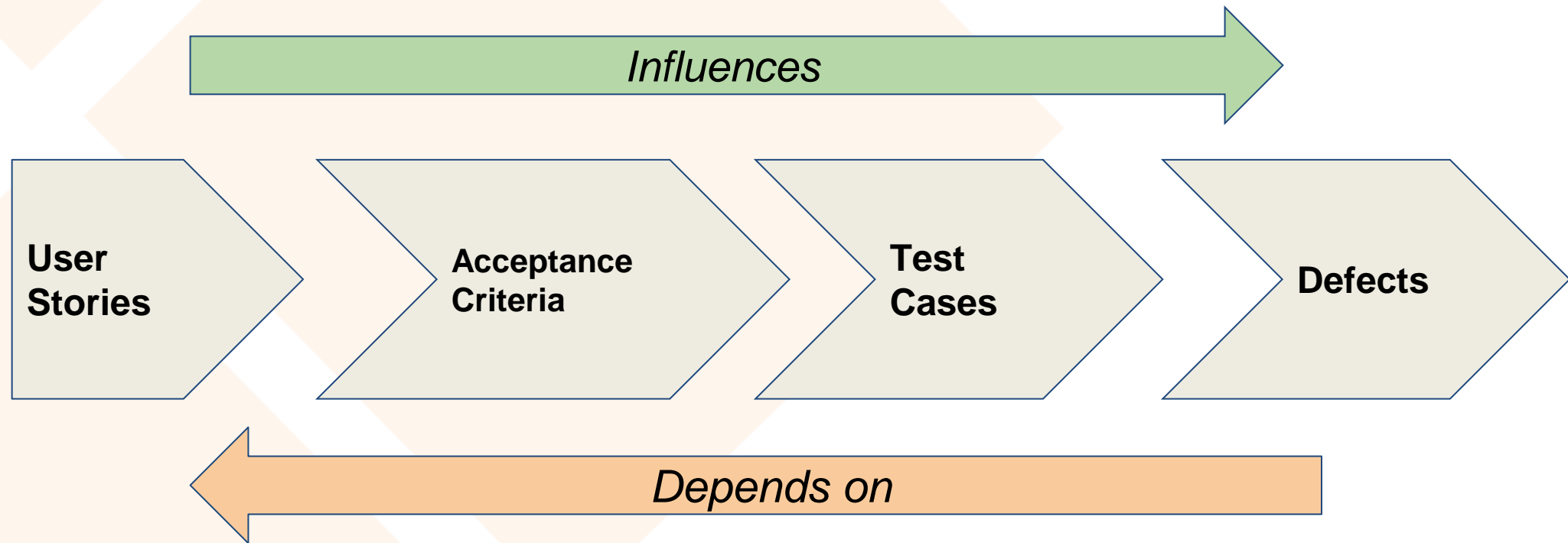
Test  
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Working  
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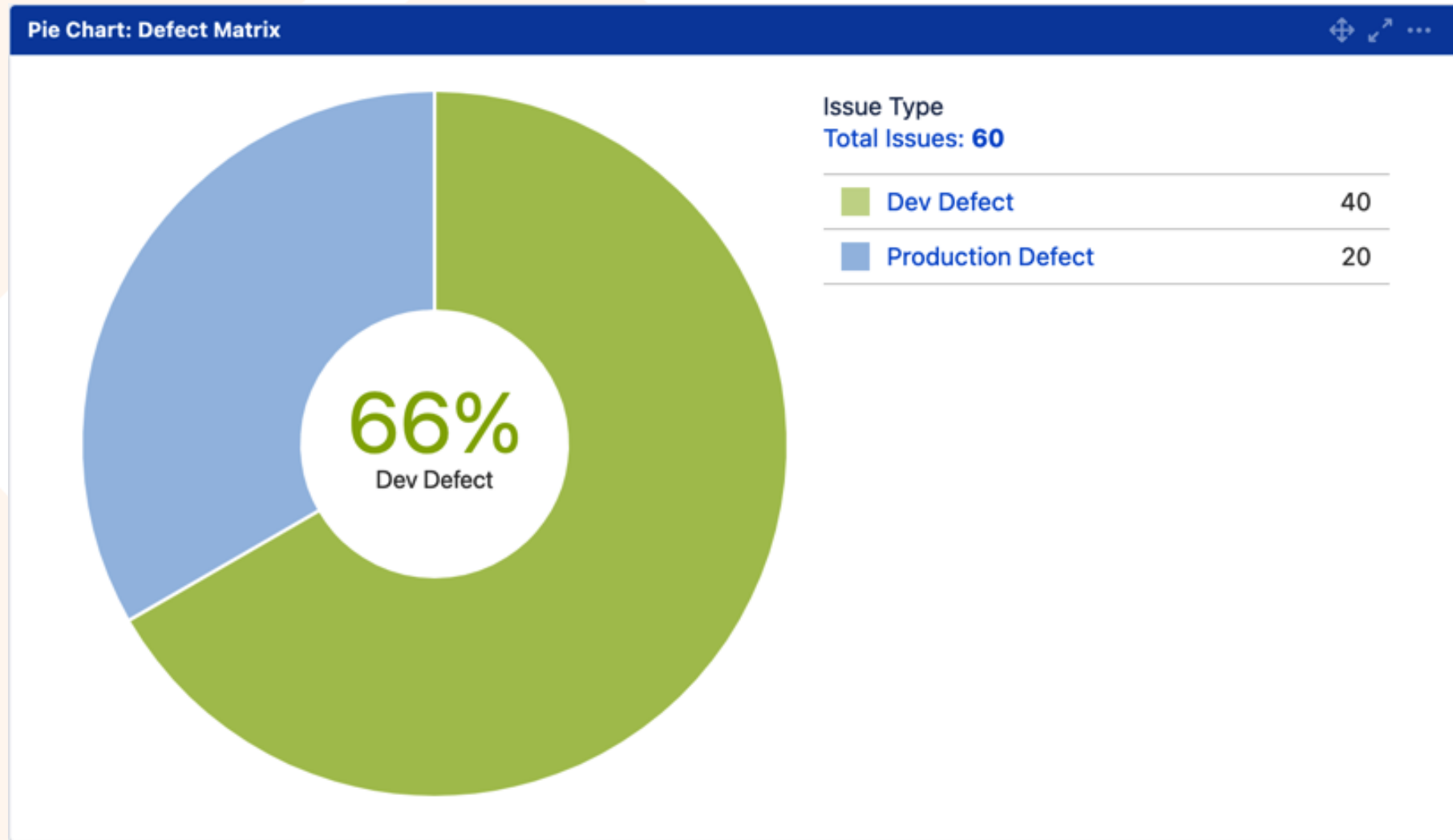
# One Work Product Affects and Depends on Other Work Products

- Connecting user stories, test cases and defects enables you to create this relationship.
- Let's see a demo of using test cases in Jira, and connecting them with user stories and defects.



# DRE (Defect Removal Efficiency)

## Defects Found in Production vs. DEV



# Typical Sprint Burndown Chart

## Velocity is Like the Doctor Visit - The End Result



# Agile Metrics To Boost Quality (Health)

## It's Not Just About Defects or Velocity (The Doctor Visit)

1. Tracking time
  - a. time to get stuff done
  - b. over --- time
  - c. not enough time
  - d. point in time, over time
2. Connecting things together
3. Tracking quality at intermediate steps



# Understanding A User Story

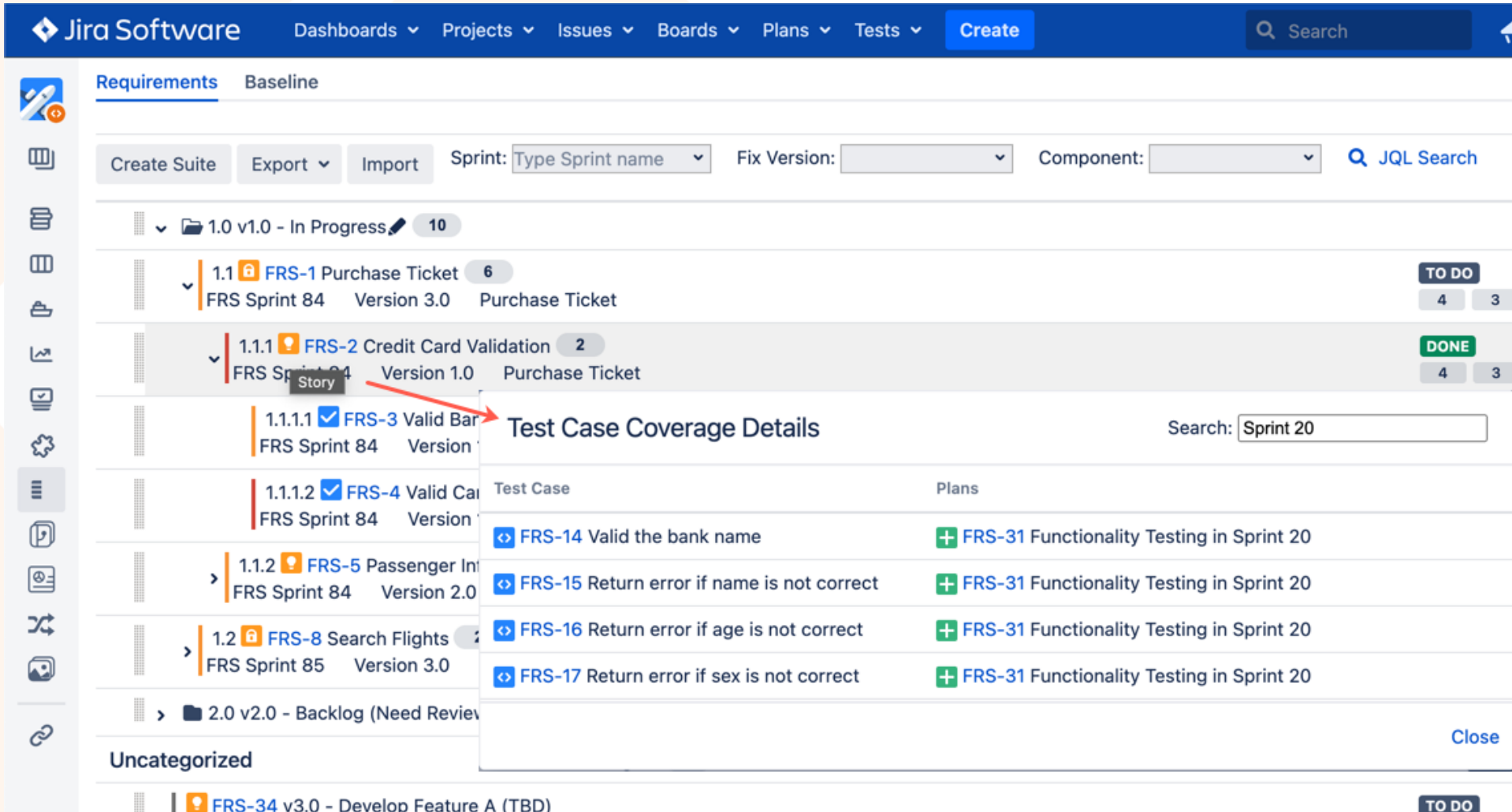
## How Much Time Do You Spend on it?

Are all elements accounted for?

- User Story
  - Understanding
    - Documenting
    - Changes
  - Development
  - Testing
- How long will it take?
- How long did it take
  - Is it enough?
  - Too much
  - Too little
  - Why

# Connecting Things Together

## User Stories, Development, and Testing



The screenshot displays the Jira Software interface, specifically the Requirements section. The top navigation bar includes 'Jira Software', 'Dashboards', 'Projects', 'Issues', 'Boards', 'Plans', 'Tests', and a 'Create' button. A search bar is also present. The main content area shows a hierarchy of requirements: '1.0 v1.0 - In Progress' (10 items), '1.1 FRS-1 Purchase Ticket' (6 items), '1.1.1 FRS-2 Credit Card Validation' (2 items), and '1.1.1.1 FRS-3 Valid Bar' (1 item). A red arrow points from the 'FRS-3 Valid Bar' requirement to the 'Test Case Coverage Details' panel. This panel shows a table of test cases and plans. The table has two columns: 'Test Case' and 'Plans'. The 'Test Case' column lists 'FRS-14 Valid the bank name', 'FRS-15 Return error if name is not correct', 'FRS-16 Return error if age is not correct', and 'FRS-17 Return error if sex is not correct'. The 'Plans' column lists 'FRS-31 Functionality Testing in Sprint 20' for each test case. A search bar at the top of the panel is set to 'Sprint 20'. A 'Close' button is at the bottom right of the panel.

Requirements Baseline

Create Suite Export Import Sprint: Type Sprint name Fix Version: Component: JQL Search

1.0 v1.0 - In Progress 10

1.1 FRS-1 Purchase Ticket 6

FRS Sprint 84 Version 3.0 Purchase Ticket

1.1.1 FRS-2 Credit Card Validation 2

FRS Sprint 84 Version 1.0 Purchase Ticket

1.1.1.1 FRS-3 Valid Bar

FRS Sprint 84 Version

1.1.1.2 FRS-4 Valid Car

FRS Sprint 84 Version

1.1.2 FRS-5 Passenger In

FRS Sprint 84 Version 2.0

1.2 FRS-8 Search Flights

FRS Sprint 85 Version 3.0

2.0 v2.0 - Backlog (Need Review)

Uncategorized

FRS-34 v3.0 - Develop Feature A (TBD)

Test Case Coverage Details

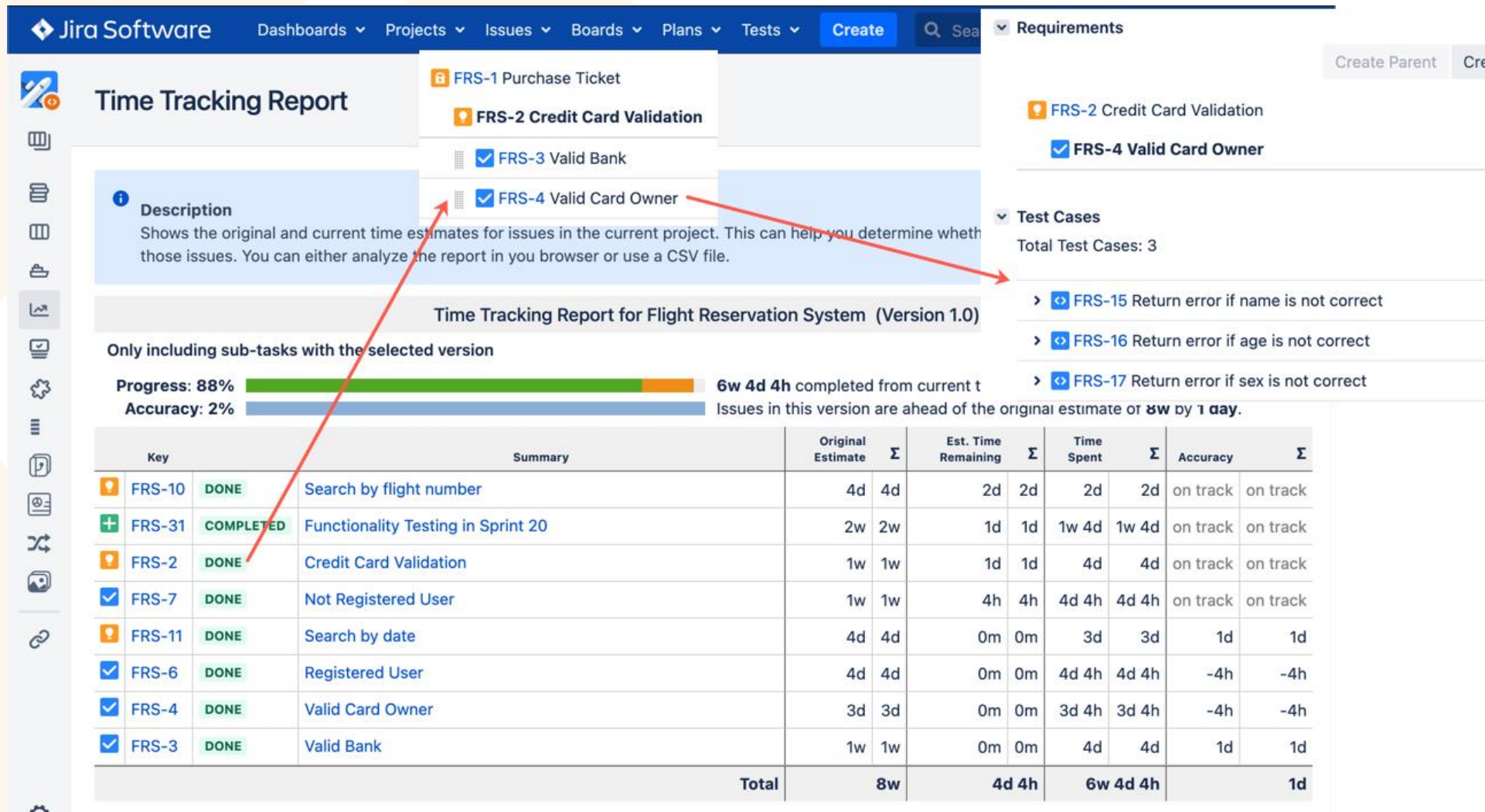
Search: Sprint 20

Test Case	Plans
FRS-14 Valid the bank name	FRS-31 Functionality Testing in Sprint 20
FRS-15 Return error if name is not correct	FRS-31 Functionality Testing in Sprint 20
FRS-16 Return error if age is not correct	FRS-31 Functionality Testing in Sprint 20
FRS-17 Return error if sex is not correct	FRS-31 Functionality Testing in Sprint 20

Close

# User Story (Requirement)->Dev Tasks->Testing Activities

## Where Was Time Spent

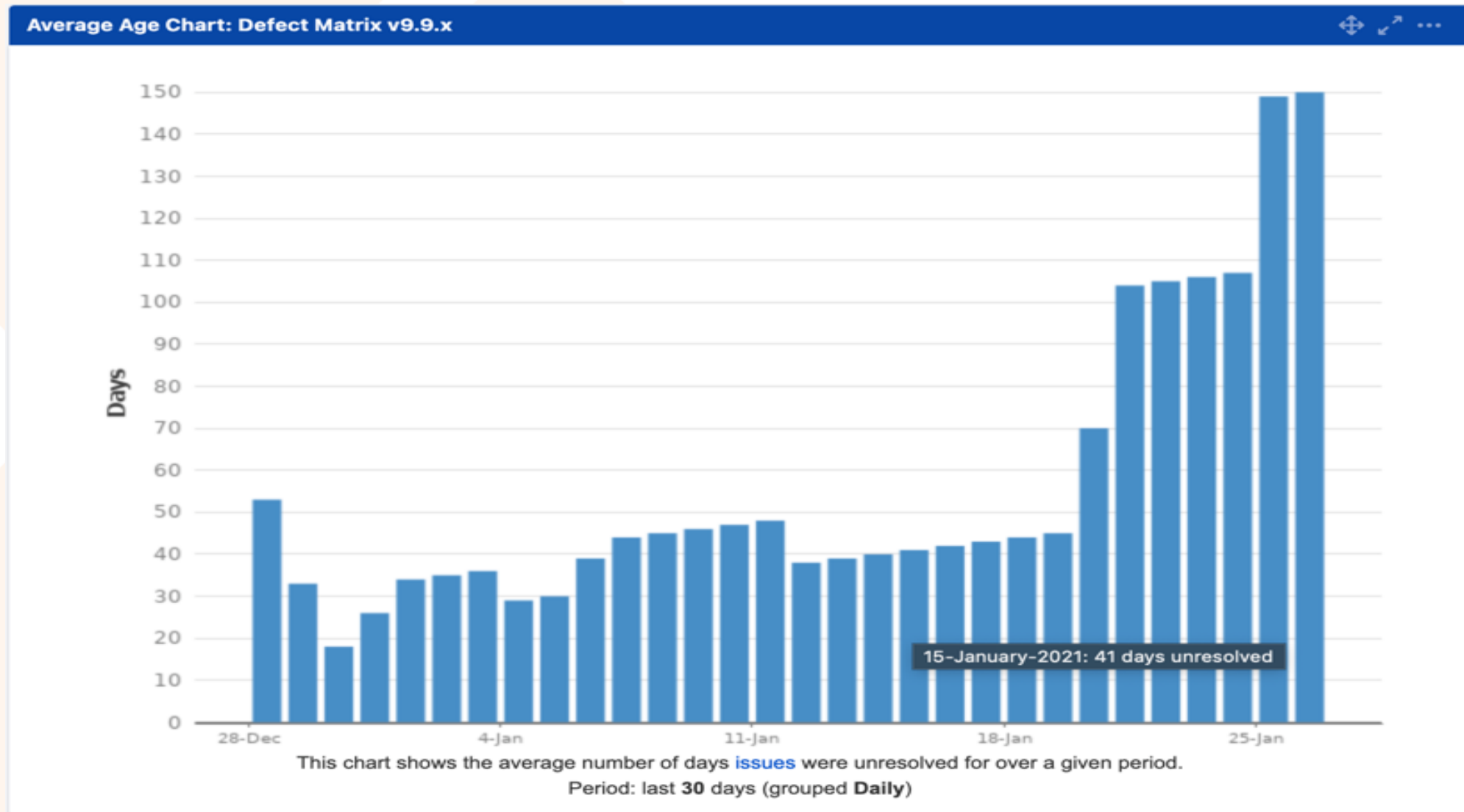


# Defect “Related”

## But Not DRE (Defect Removal Efficiency)

1. Time to close a defect
2. Defect trends open versus closed
3. Defect sources such as bad requirements, code logic etc.,
4. Defect areas in the software such as accounts receivable, accounts payable, reporting to show where their SW has defect problems.

# Defect Average Age Chart in Last 30 Days



# Defect Time Tracking Report

## Time Tracking Report

[Configure](#)

### Description

[Excel View](#)

Shows the original and current time estimates for issues in the current project. This can help you determine whether work is on track for those issues.

### Time Tracking Report for Flight Reservation System (Version 3.0)

Only including sub-tasks with the selected version

Progress: 64%










4w 2d completed from current total estimate of 6w 4d

Accuracy: -13%



Issues in this version are behind the original estimate of 6w by 4 days.

Key				Summary		Original Estimate		Σ		Est. Time Remaining		Σ		Time Spent		Σ		Accuracy		Σ	
	FRS-26	IN PROGRESS	Error message is wrong after clicking 'Save' button.			1w 2d	1w 2d			1w	1w			2d	2d	on track	on track				
	FRS-25	DONE	No response after clicking the button.			1w 3d	1w 3d			3d	3d			1w	1w	on track	on track				
	FRS-23	IN PROGRESS	There is no error returned.			4d	4d			2d	2d			2d	2d	on track	on track				
	FRS-32	IN PROGRESS	The dialog box should be improved.			2d	2d			1d	1d			1d	1d	on track	on track				
	FRS-24	DONE	System is down, testing is blocked.			4d	4d			1d	1d			3d	3d	on track	on track				
	FRS-33	DONE	There is an error when open xxx page.			1d	1d			0m	0m			2d	2d			-1d	-1d		
	FRS-28	DONE	Not able to input any data in 'Data' field.			4d	4d			0m	0m			1w 2d	1w 2d			-3d	-3d		
Total						6w				2w 2d				4w 2d						-4d	

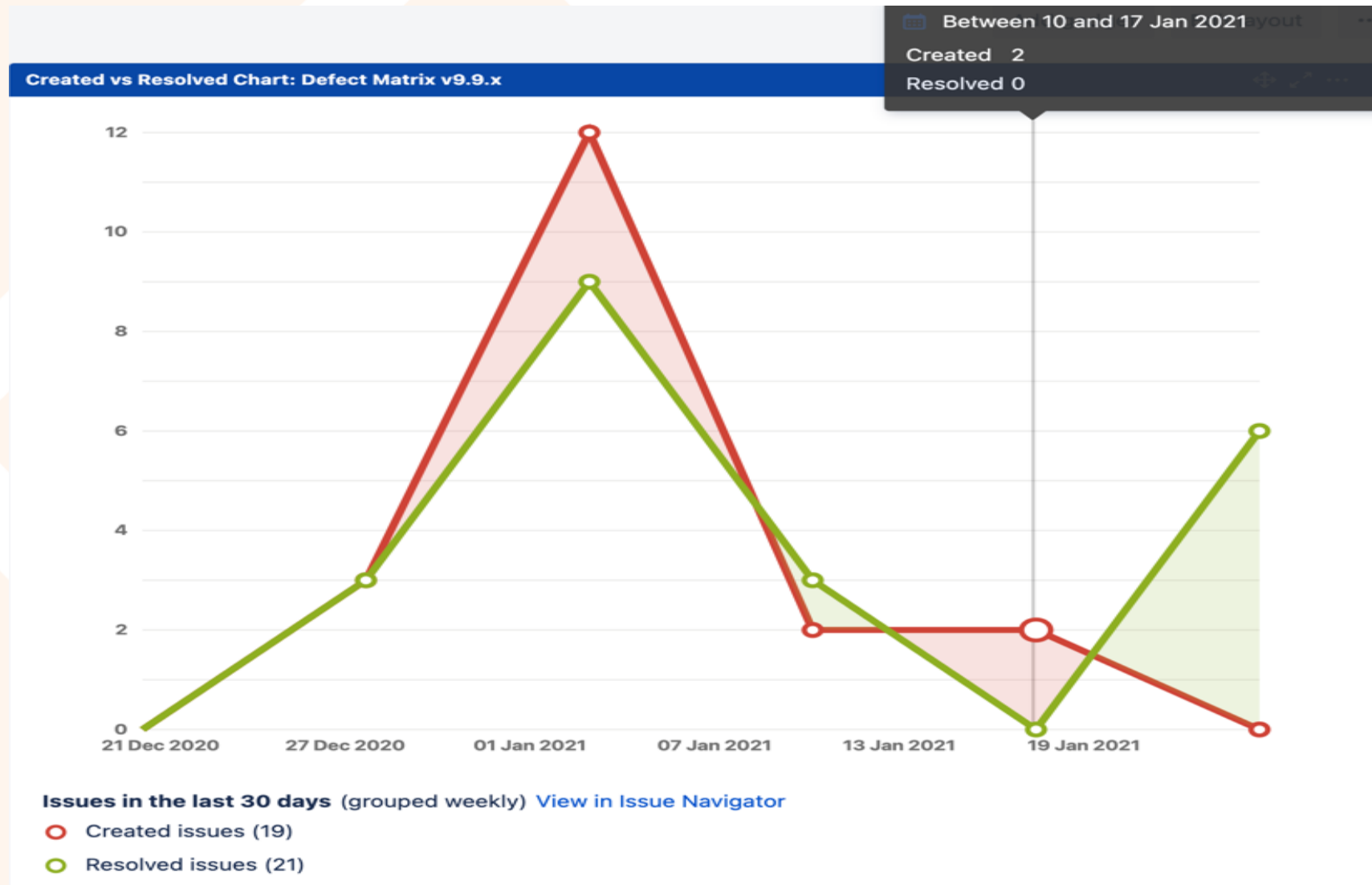


# Defect “Related”

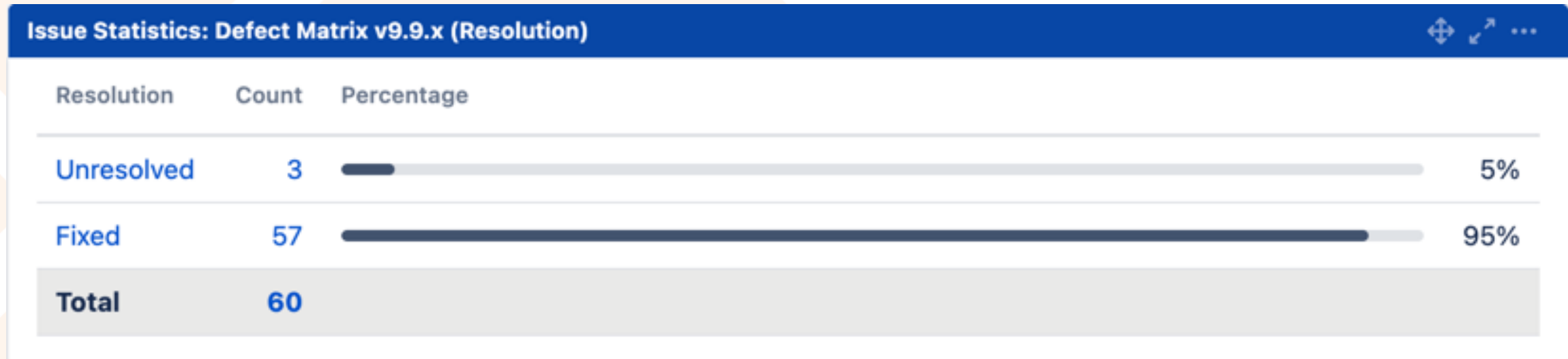
## But Not DRE (Defect Removal Efficiency)

1. Time to close a defect
2. Defect trends open versus closed
3. Defect sources such as bad requirements, code logic etc.,
4. Defect areas in the software such as accounts receivable, accounts payable, reporting to show where their SW has defect problems.

# Defects Created vs. Resolved in the Last 30 Days



# Defects Fixed/Total During a Period/Version



# Defect “Related”

## But Not DRE (Defect Removal Efficiency)

1. Time to close a defect
2. Defect trends open versus closed
3. Troubled Requirements
4. Defect areas in the software such as accounts receivable, accounts payable, reporting to show where their SW has defect problems.

# Troubled Requirements

## Unresolved Defects as per Requirement



Summary Report(Defects Status Report)

Project	Requirement		Defects	Resolved Defects	Unresolved Defects
Flight Reservation System	FRS-1 Purchase Ticket	TO DO	10	3	7
Flight Reservation System	FRS-2 Credit Card Validation	IN PROGRESS	10	3	7
Flight Reservation System	FRS-3 Valid Bank	IN PROGRESS	0	0	0

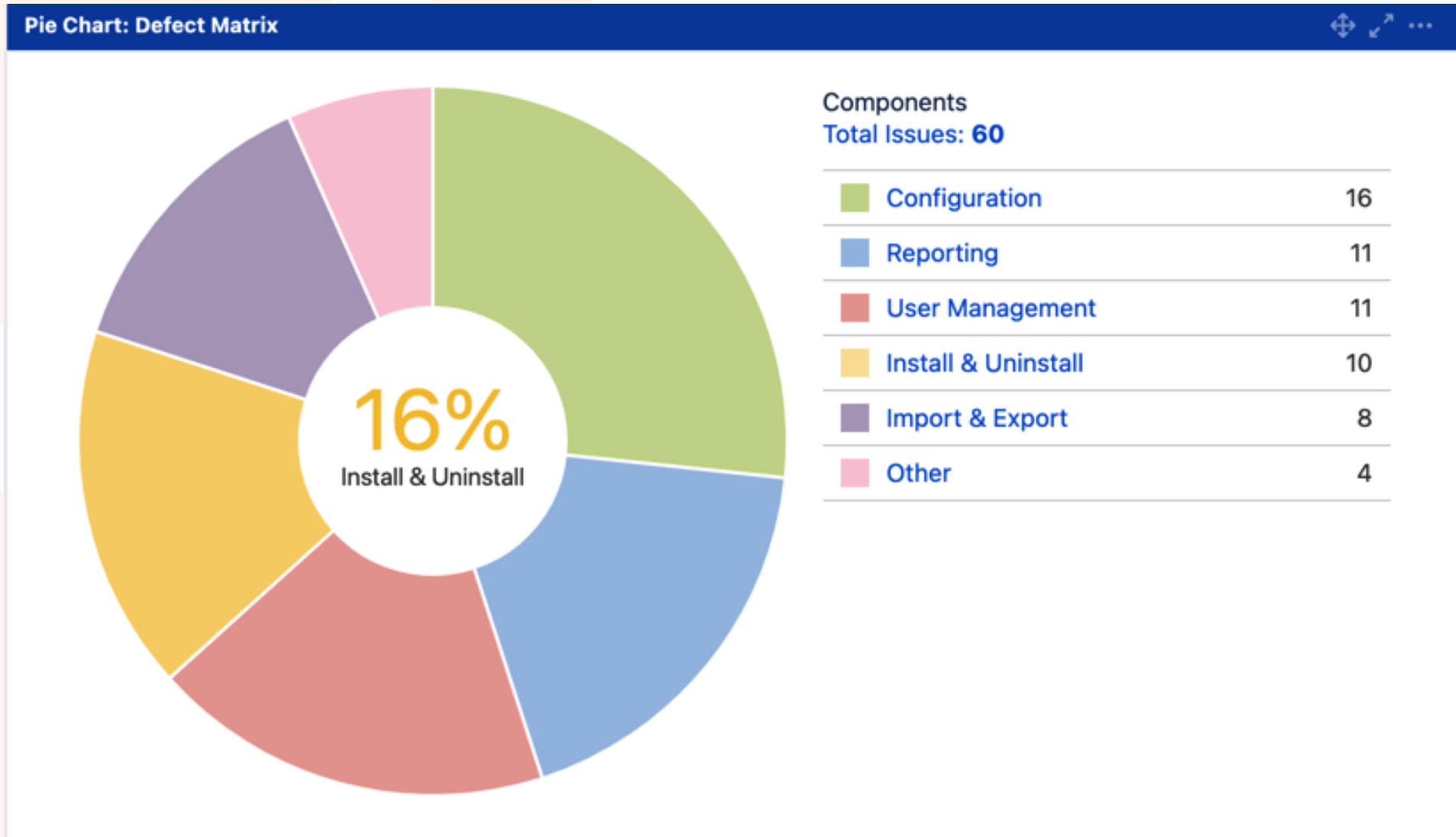
# Defect “Related”

## But Not DRE (Defect Removal Efficiency)

1. Time to close a defect
2. Defect trends open versus closed
3. Defect sources such as bad requirements, code logic etc.,
4. **Defect areas in the software** such as accounts receivable, accounts payable, reporting to show where their SW has defect problems.



# Defects Module Categorization



# Defects Module Categorization per Version

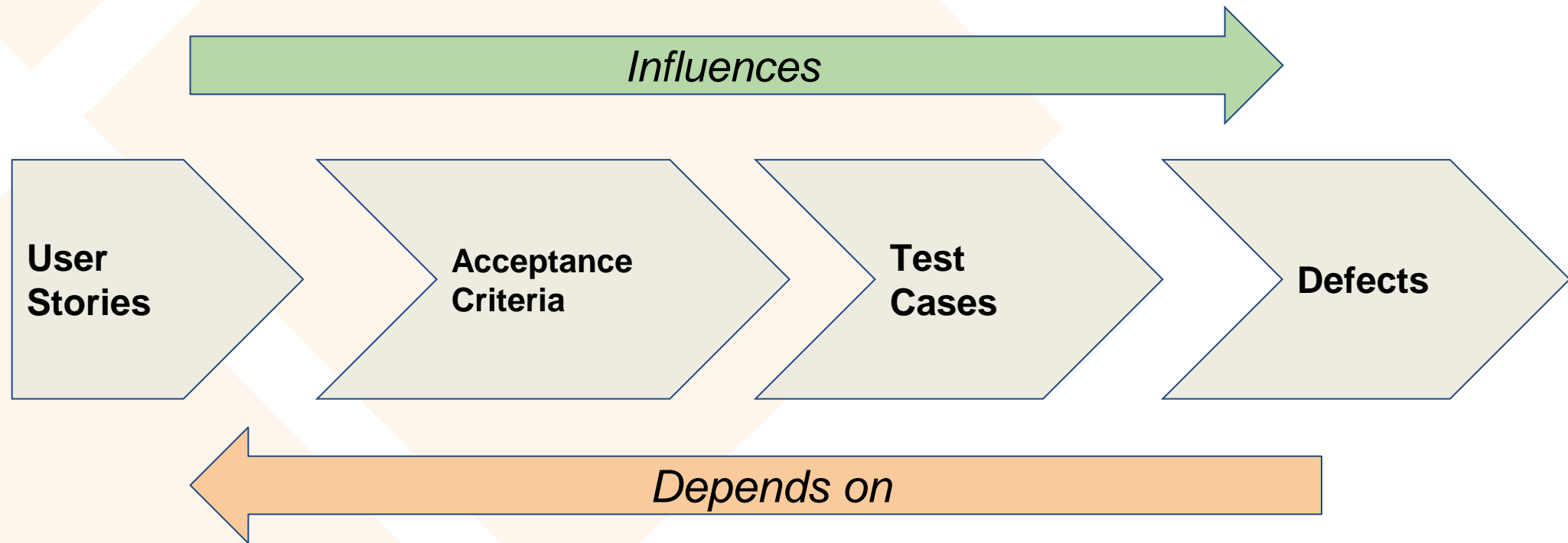
Two Dimensional Filter Statistics: Defect Matrix				
Components	📦 9.9.1	📦 9.9.2	📦 9.9.3	T:
📦 Configuration	7	5	4	16
📦 Import & Export	3	3	2	8
📦 Install & Uninstall	2	2	6	10
📦 Other	2	1	1	4
📦 Reporting	3	2	6	11
📦 User Management	3	2	6	11
<b>Total Unique Issues:</b>	<b>20</b>	<b>15</b>	<b>25</b>	<b>60</b>

Grouped by: Fix For Versions (non-archived) Showing 6 of 6 statistics. [Show less](#)

# Let's UnPack What We Learned Today

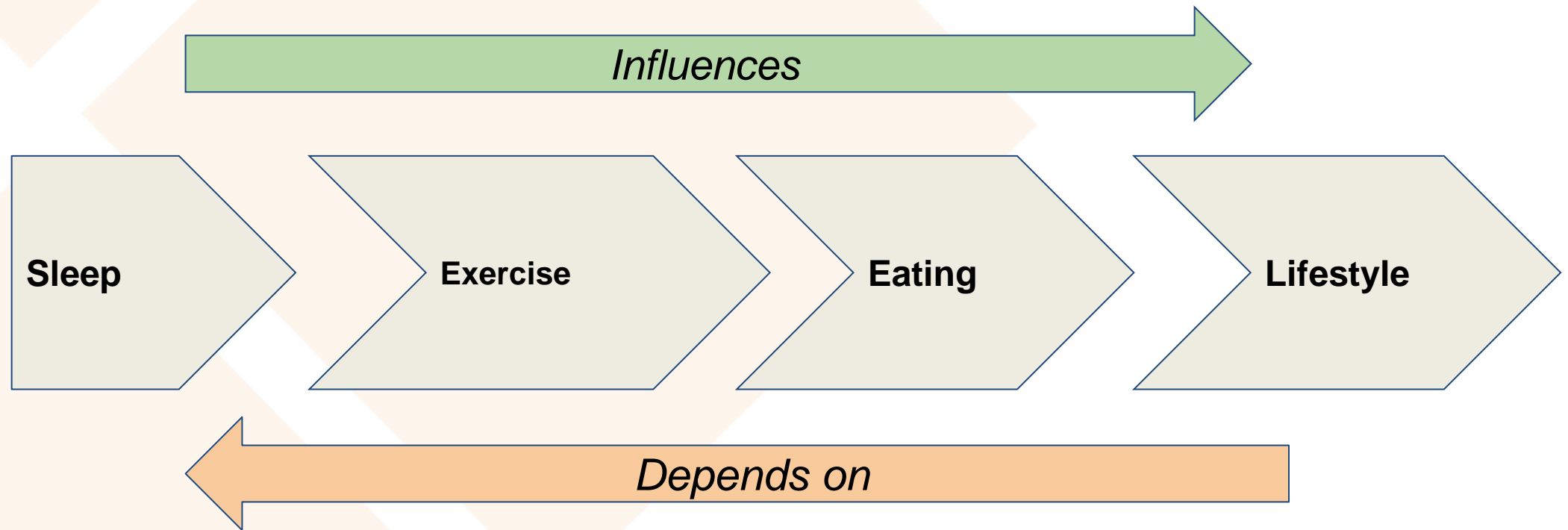
1. For Agile, “over” is not equal to none
2. It is about defects and velocity, but these are end metrics of the process...
3. What do you do and can measure before the end?
  - a. How can you measure the quality of the intermediate and root work products?
  - b. Only pick out a few, be open to change

# One Work Product Affects and Depends on Other Work Products



# Applying This To Everyday Life

## Take Control of YOUR Intermediate Work Products



# Q&A

Post your webinar questions on **Twitter @XBOSoft**



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Any questions regarding Jira and SynapseRT implementation, please contact Cheney at:

***cma@goldfingerholdings.com***

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