Project Retrospectives to Improve Product Development

August 2016

Retrospective Objective: High Quality Analysis

Fact Based, Cross-functional, Actionable

Fact-based: Data sources are project documents, meeting notes, program reviews, change orders

Cross-Functional:

- Provides richer root cause analysis
- Reflects critical thinking across multiple disciplines

Actionable:

- Distinguish true root cause from symptom
- Can identify systemic issues across multiple products.

Fact based data collection, synthesis and critical thinking

The Retrospective Team

Key members of the cross functional team

- Directly responsible for delivering a product to market
- 8-10 participants is optimal
- In room participation

Facilitator

- Not a member of the program team!
- Provides focus, time management, rules of engagement.

Not this!

No political influence

Ensuring successful retrospectives

Create a high quality analysis that identifies the high impact root causes that prevented the team from achieving a measurable goal.

- In order to achieve this:
  - Attendance for the entire day is critical!
    - Staggered attendance will significantly effect the quality of the work
    - The process builds on itself – your contribution will be marginalized if you don't participate fully
  - No time/attention splicing!
    - Provide breaks throughout the day to read email, return calls, etc. While we're working, you'll do your best work if you're fully engaged
- The leadership team wants to understand systemic issues that are inhibiting teams - this is your best opportunity to communicate data/fact based root causes.

We want to glean focused and actionable learning in the most impactful areas

Roles of Participants

- **Project team** will be asked to:
  - Attend a kick-off meeting
  - Perform a project retrospective
  - Review results with Steering Team
- **The management team** will be asked to:
  - Absorb the retrospective results
  - Identify and prioritize the key root causes and improvement activities required (2-4 key areas)
  - Plan and fund improvement initiatives

Retrospective Process: 4 steps

These elements are order-specific, and build on one another

Organizing Question	Event Analysis	Root Cause Analysis	Root Cause Synthesis
Focus	Data/Fact Collection	Identifying True Root Cause	Deeper Insights That Lead to Specific Action

9:00-9:30–Objectives, Process Review
10:00 – 1:30– Data Collection
- Validating the Organizing Statement
- Constructing the Event Time Line
- Root Cause Analysis

1:30 – 4:00– Root Cause Synthesis
4:00 – 4:30 – Wrap Up
- Review Data
- Action Items and Summary
- Review of process

A full day of data collection, critical thinking and synthesis

The Retrospective Process: 4 steps

Organizing Question	Event Analysis	Root Cause Analysis	Root Cause Synthesis

Focus

The Organizing Question: *A specific goal that was not achieved or desired to achieve*

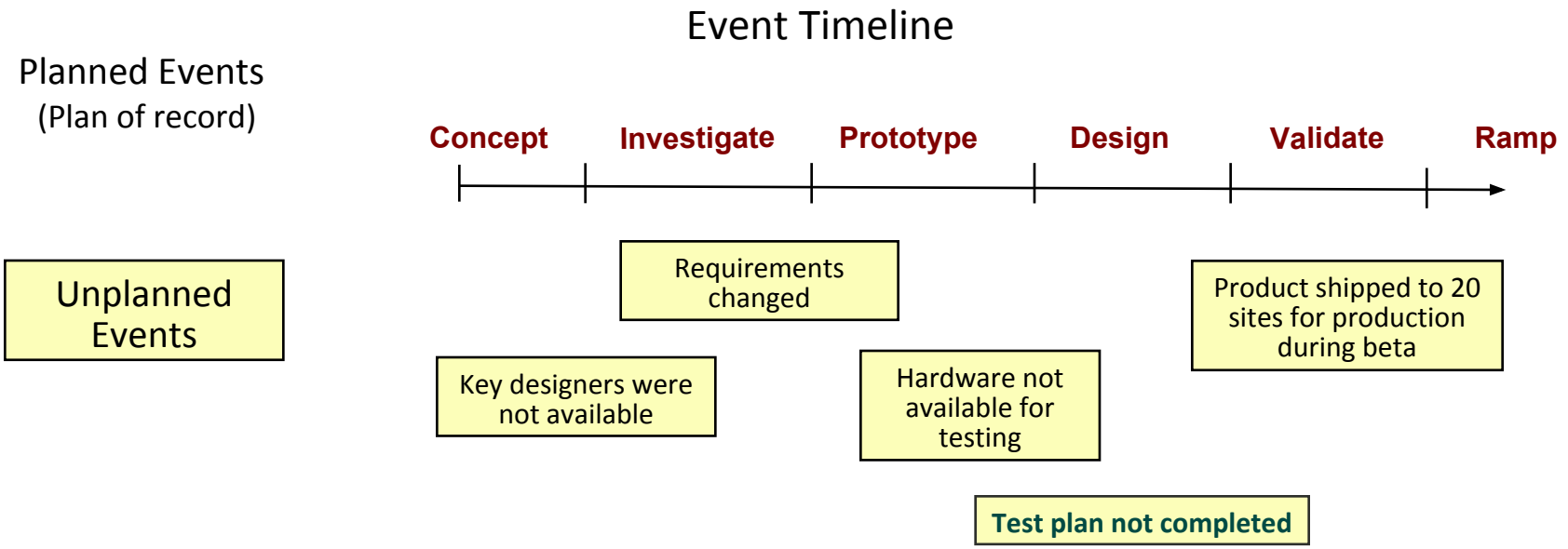
"What are the key drivers that prevented the team from delivering to original schedule commitment?"

A strong organizing question will keep the team focused on what matters most – don't try to boil the ocean!

The Retrospective Process: 4 steps

Organizing Question	**Event Analysis**	Root Cause Analysis	Root Cause Synthesis

Data/Fact Collection



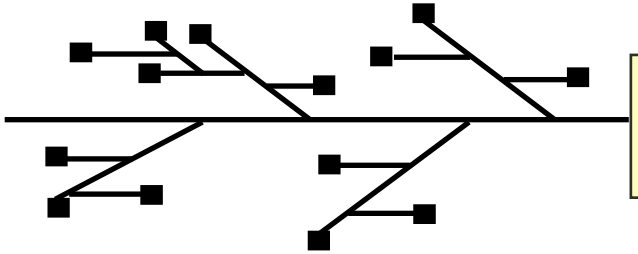
- Team uses Post-it Notes to capture the most impactful unplanned events *that supports the organizing question*
- Do an omissions check
- Use Dot Voting to identify top 3 most impactful

These are all symptoms of deeper systemic issues –don't stop here!

The Retrospective Process: 4 steps

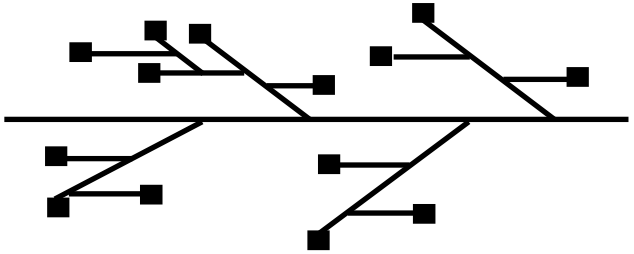
Organizing Question	Event Analysis	**Root Cause Analysis**	Root Cause Synthesis

Identifying
True Root Cause



Test plan not completed

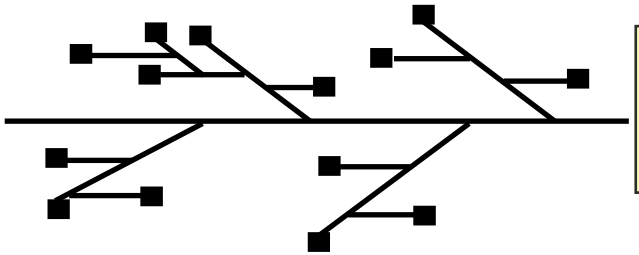
Highest # votes



HW was not available for testing

2nd highest

3rd highest



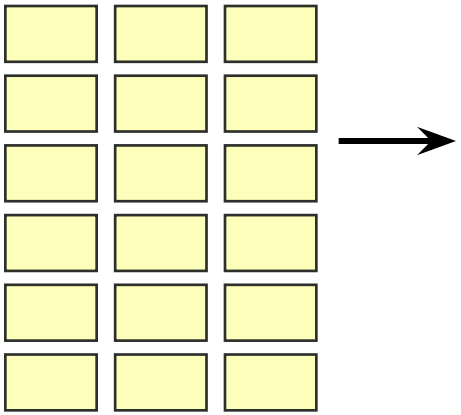
Key engineers were not available

The Retrospective Process: 4 steps

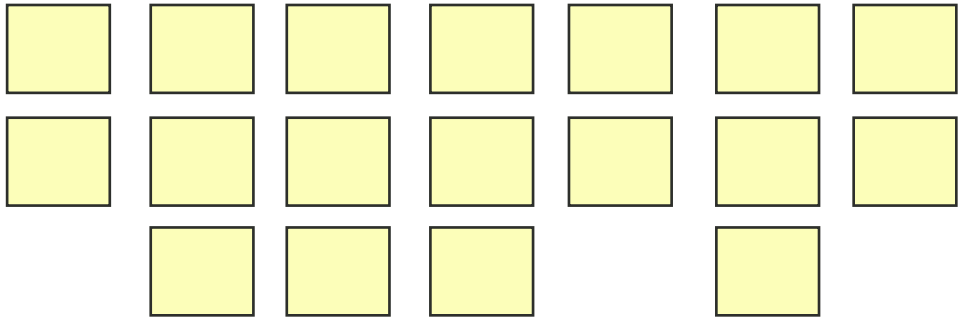
Organizing Question | **Event Analysis** | **Root Cause Analysis** | **Root Cause Synthesis**

Deeper Insights That Lead to Specific Action

Data from RCA



Group by natural relationships



Grouping Hints

- Same image or meaning
- Intuitive, not by logical category
- Not by cause and effect
- Not more than three labels per group
- OK to have one per group
- Same degree of similarity

The Retrospective Process: 4 steps

Organizing Question	Event Analysis	Root Cause Analysis	Root Cause Synthesis

Deeper Insights That Leads to Specific Action

Affinity Diagram/K-J Method/Language Analysis

- Group process for establishing priorities
- Helps you make sense of the root cause data
- Reflects natural groupings (affinities)
- Best when done by a group
- Identifies cause and effect

Example Retrospective: Project X

WHAT ARE THE KEY DRIVERS THAT PREVENTED PROJECT X FROM ACHIEVING THEIR TIME-TO-MARKET OBJECTIVES

There is no commitment to follow a product development process

PRODUCT REQUIREMENTS WERE NOT CLEARLY DEFINED

- PRODUCT REQUIRE-MENTS WERE NEVER FROZEN. (NOT EVEN FROZEN, THAWED, FROZEN,...)
- **THERE WAS INSUFFICIENT DEFINITION OF CUSTOMER OR PRODUCT REQUIREMENTS**
  - 50% OF THE CUSTOMER REQUIREMENTS WERE NOT KNOWN BY THE DESIGN TEAM DURING IMPLEMENTATION
  - THERE WAS NO PRODUCT DEFINITION
  - THERE WAS NO PRODUCT OR CUSTOMER ACCEPTANCE CRITERIA DOCUMENTED FOR THE ENGINEERING TEAM

NO COMMON SOFTWARE DEVELOPMENT PROCESS WAS USED

- NO COMMON DESIGN METHOD-OLOGY WAS USED ON THIS PROJECT
- **NO FORMAL TESTING PROCESS WAS ALLOWED**
  - FORMAL TESTING WAS NOT DONE AS COMPONENTS BECAME AVAILABLE
- **NO DEFECT DETECTION WAS DONE ON THE SOFTWARE DESIGN**
  - THE APPLICATION INTERFACE WAS NOT FORMALLY REVIEWED PRIOR TO IMPLEMENTATION
  - THERE WAS NO SOFTWARE DESIGN REVIEW FOR THE VENUS 2 MODULE

THERE WAS A LACK OF COMMITMENT TO TESTING

- CUSTOMER ACCEP-TANCE TESTING WAS NOT SCHEDULED
- **WE DID NOT TEST THE SYSTEM PRIOR TO SHIPMENT**
  - 1 HOUR OF TESTING WAS DONE WHEN 2 WEEKS WERE REQUIRED
  - ADDITION OF CUSTOMER DEMO TO COMPRESSED SCHEDULE DIRECTLY REDUCED TESTING TIME
- **THERE WAS INSUFFICIENT H/W AVAILABLE TO S/W**
  - DURING INTEGRATION WE HAD ONE TEST SETUP IN LIEU OF THREE NEEDED
  - SHARING RESOURCES WITH HARDWARE ENGINEERS LIMITED SOFTWARE ENGINEER'S TEST TIME BY 20% OF WHAT WAS NEEDED
  - THE DELIVERY DATE FOR HARDWARE LEFT ONLY 1.5 MONTHS FOR H/W - S/W INTEGRATION AND TESTING

THERE IS NO METHOD FOR COMMUNICATING PRODUCT KNOWLEDGE

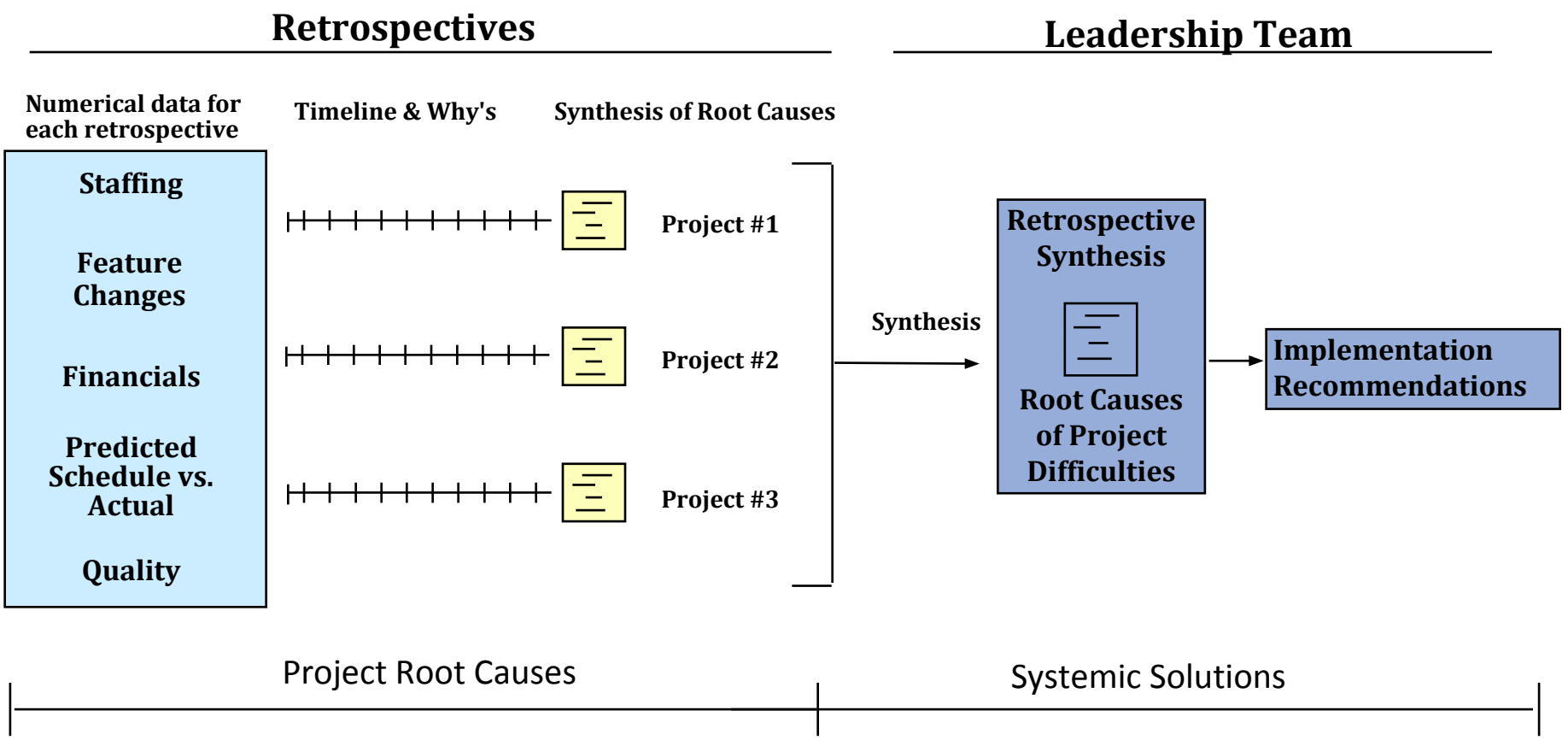
- NO TIME WAS SCHEDULED TO PROVIDE DOCUMENTATION TO APPLICATION WRITERS
- **WE DID NOT PROVIDE TEAM MEMBERS WITH BASELINE PRODUCTS S/W KNOWLEDGE**
  - AS NEW PEOPLE WERE ADDED TO THE TEAM, PROJECT LEADERSHIP DID NOT PASS ON DESIGN OR FUNCTIONAL METHODS FORMALLY
  - THE VENUS 2 SOFTWARE ARCHITECTURE IS NOT DOCUMENTED OUTSIDE OF THE CODE

- MAN-HOUR ESTIMATE WAS NOT CHANGED AFTER CUSTOMER REQUIREMENTS CHANGED

- **THIS WAS A CUSTOMER DRIVEN GENERIC PRODUCT**
  - ONLY 1 CUSTOMER WAS USED TO GATHER REQUIREMENTS FOR THE PRODUCT
  - MARKETING WAS NOT INVOLVED DURING THIS PROJECT

= Top Vote Getter
= Second Vote Getter
= Third Vote Getter

From Projects to Synthesized Results



Rules of Engagement

- No criticism
- If you don't agree, state another fact
- Data is fact-based – use project artifacts (specs, schedules, meeting minutes, etc.) to validate
- Use the 80% rule - better to guess approximately if at least 980% sure than to leave statements wide open
- Draw out people who haven't contributed
- Let team know that the time line is not meant to be a 100% recording of all unplanned events
  - Don't need to list every issue or bug if they had similar project impact

Retrospective Preparation

- Retrospective Kick-off Meeting (Project Team Members: 30 minutes, at least 1 week in advance)
  - Describe meeting context
  - Define meeting objectives
  - Detail preparation requirements
- Pre-work (Project Manager: 1-2 hours)
  - Gather information regarding schedules/milestones
  - Secure meeting room, lunch
  - Ensure full day participation
- Pre-work (Team Members: 1 hour)
  - Collect project files
    - Status reports
    - Project updates
    - Product specifications
    - Design review documentation