Why do some organizations down-grade Condition Reports to avoid having to do RCAs?

TOO COSTLY

TAKES TOO LONG

DRAIN ON OUR RESOURCES

Should we initiate a root cause analysis?

NOT ENOUGH EXPERTISE

CAN'T SEEM TO GET TO THE REAL ROOT CAUSES

EXPENSIVE SOFTWARE LICENSES

LL#8: without an efficient RCA or Apparent Cause Evaluation (ACE) process, sites are less inclined to trigger efforts that are most likely to actually identify and address the issues

Root Causes

Deep-seeded causes for an event or condition, which, if corrected or eliminated, would preclude repetition of the event or condition.

- But this definition is misleading and causes RCAs to stop short.
- The traditional definition has also created a "blind-spot" for *Extent of Cause Reviews.*

Case Study:
"Sally the Supervisor Falls off The Ladder"

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A traditional RCA would likely find that the Root Cause of the accident was:
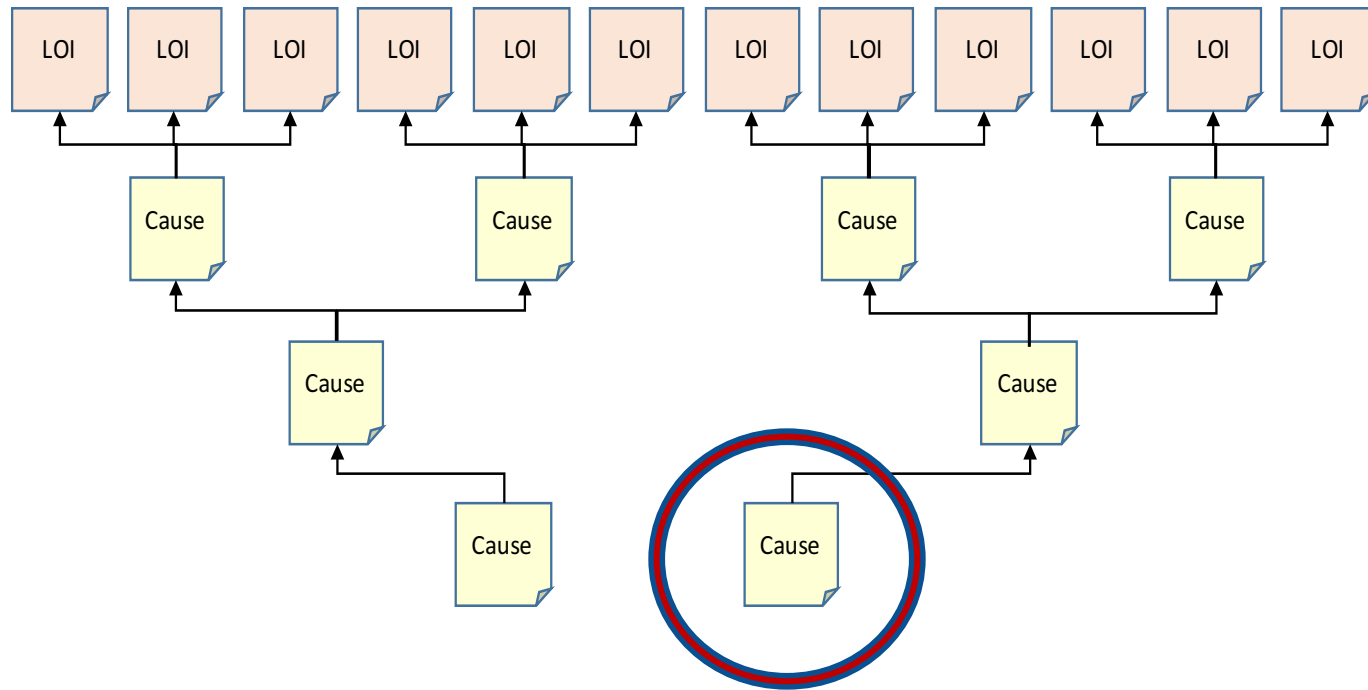
"The supervisor was new and not fully aware of fall protection requirements due to less than effective training."

Corrective Actions:

1. Develop better fall protection training
2. Add a note about fall protection to that work order or procedure
3. Issue a memo on the incident
4. Have a stand-down to communicate the memo
5. Coach the individual

Extent of the Cause:

Probably None – seemingly covered by the corrective actions for this root cause

A more disciplined, rigorous review would find much deeper Root Causes that affect more than just the one issue
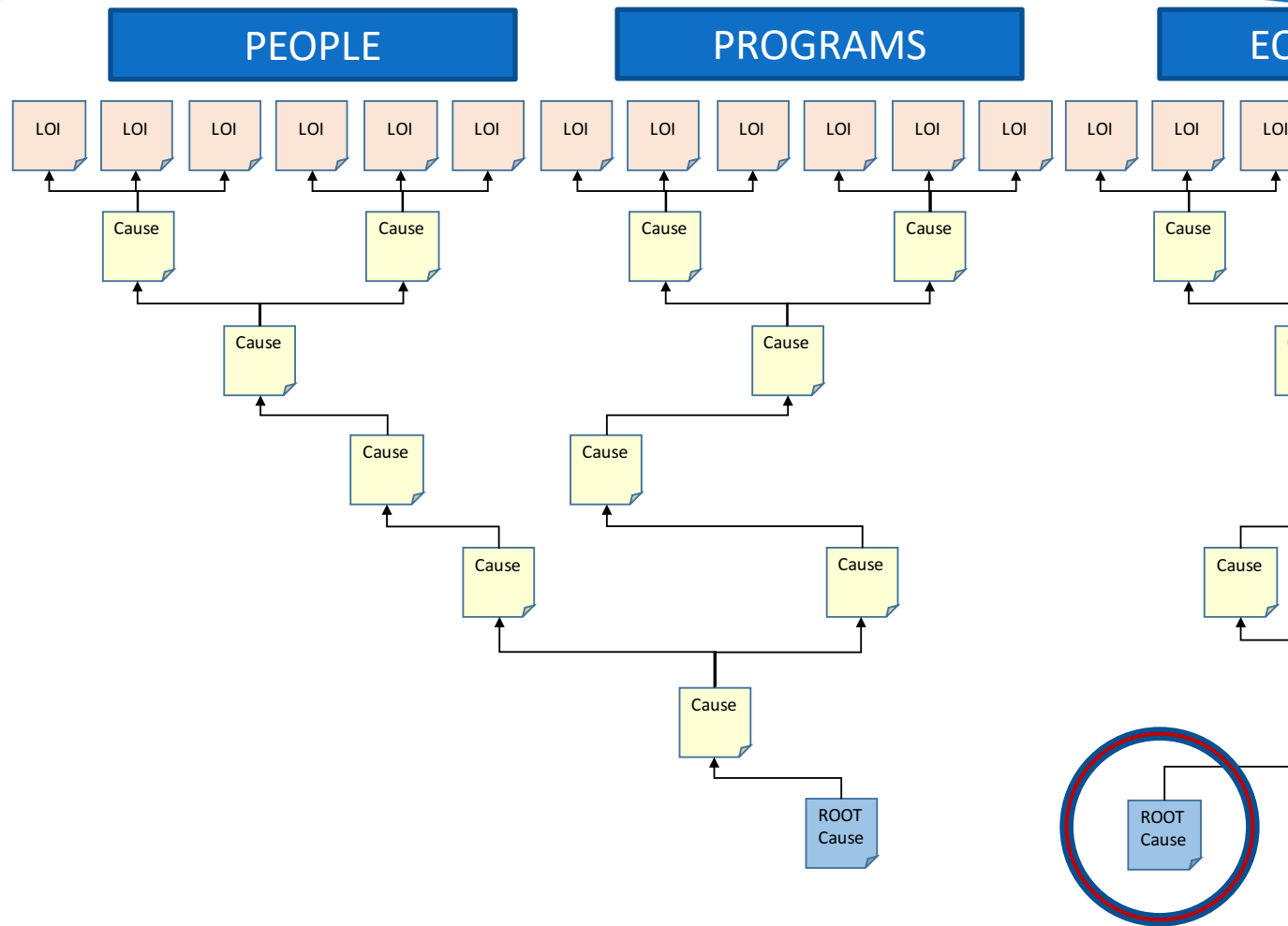
"The lack of a graded approach to Work Controls resulted in work-arounds that inappropriately classified 125 activities as skill of the craft. As a result, the activity was conducted without a work order, without a JHA and without a pre-job briefing to discuss safety requirements"

Extent of the Cause:

Review the other 124 activities to determine the risks and vulnerabilities of having the work done as skill of the craft without JHAs and work orders.

# LL#10: Consider this revised definition of a Root Cause

Root Causes:

Deep-seeded causes for an event or condition, which, if corrected or eliminated, would preclude repetition of not only the event or condition being analyzed, but also many other conditions affecting performance.

Case Study:
"Sally the Supervisor Falls off The Ladder"

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Why I no longer use E&CF Charts and Fishbone Diagrams


TIMELINE

CAUSE & EFFECT ANALYSIS
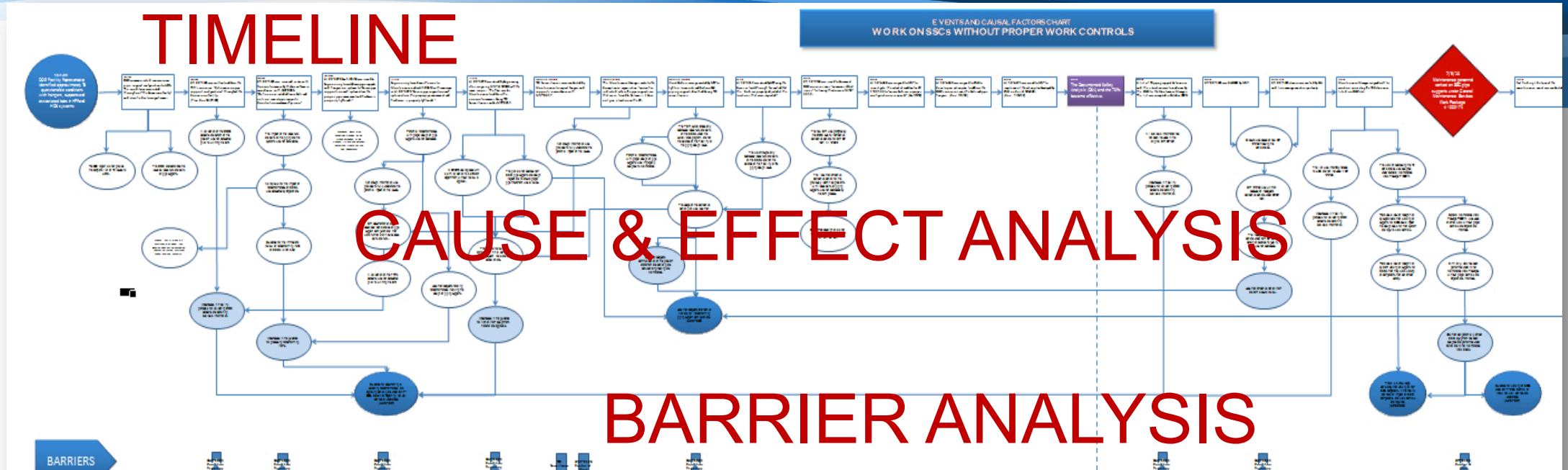
BARRIER ANALYSIS

LL#11: conducting cause and effect analysis from just the time line leaves many questions unasked/unanswered

LL#12: Barrier Analysis and other analyses can be integrated into one efficient process, rather than conducting them separately

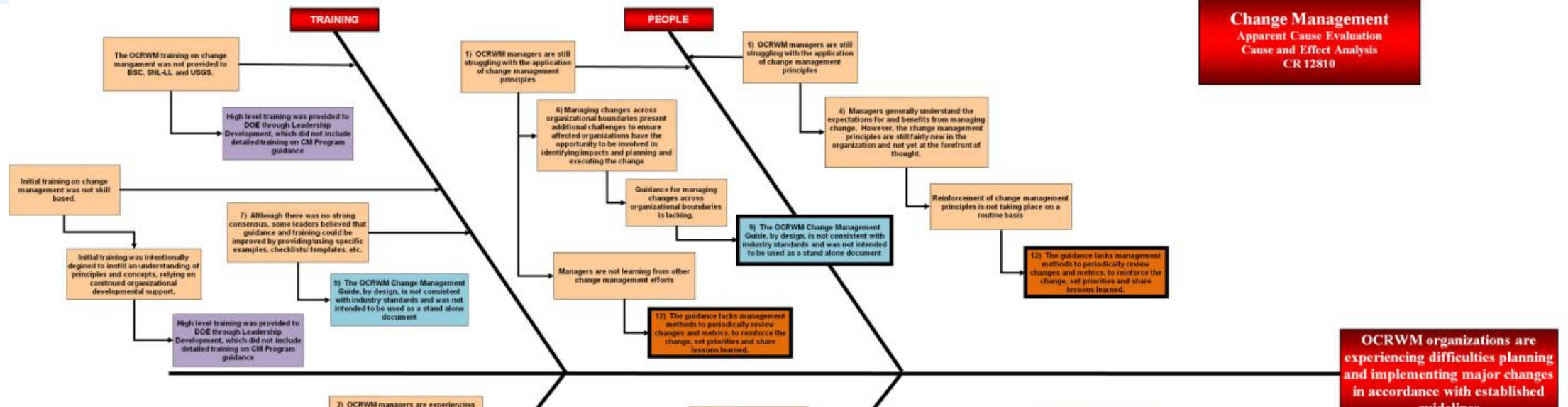# Why I no longer use E&CF Charts and Fishbone Diagrams

- This is a classic Fishbone with only 8 lines of inquiry (LOIs)
- Try to draw a Fishbone with 50 to 100 LOIs, each with 5 to 15 causes per thread
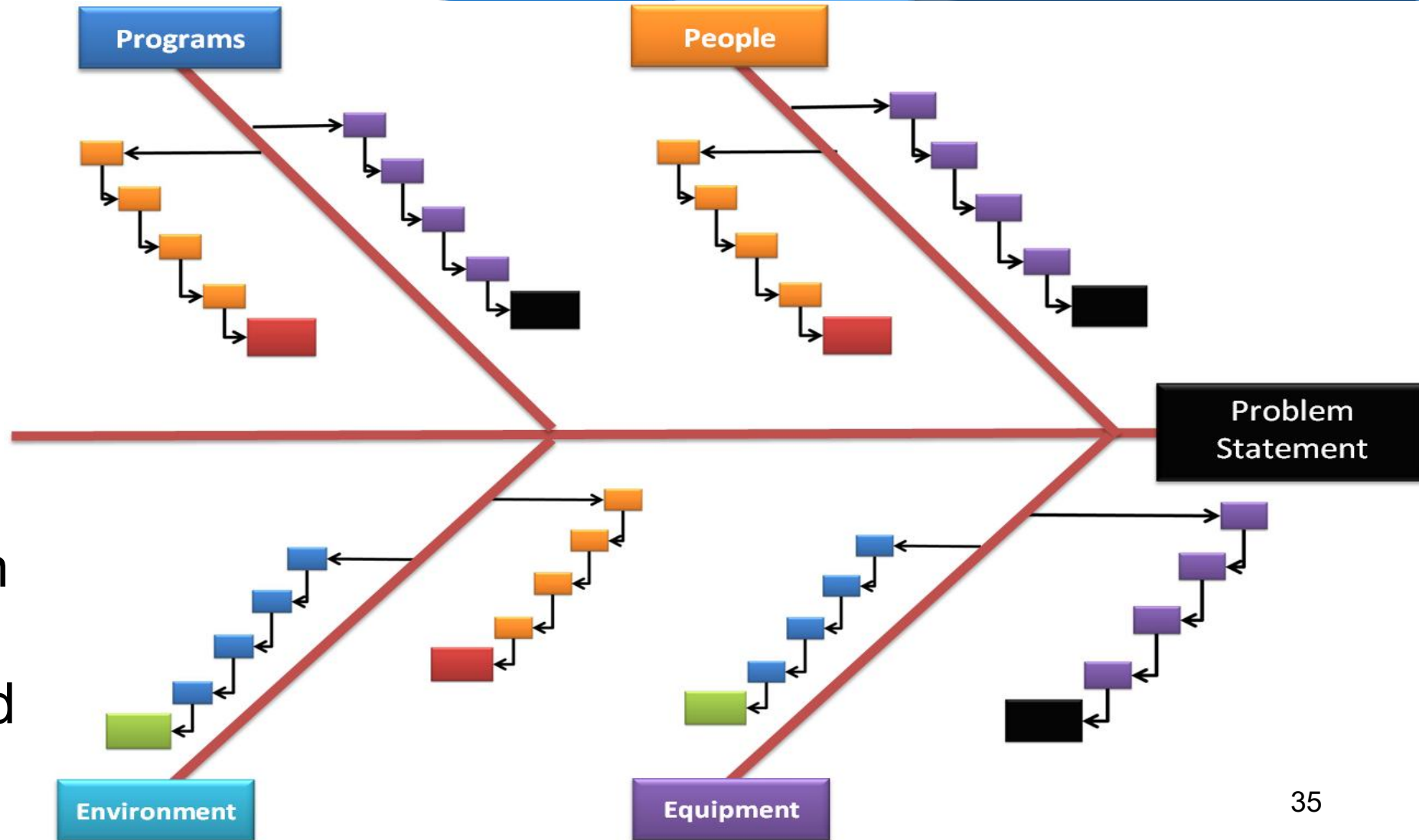
Fishbone Diagrams cannot display nearly as much information as our framework, and is a much less effective communication tool

My Last Fishbone at Yucca Mountain in 2007

LL#13: It is difficult (if not impossible) to readily identify the root causes and contributing factors on a Fishbone diagram for an issue with the slightest level of complexity. Use the fault tree approach to capture cause and effect analysis for a more powerful visual representation of the root causes.

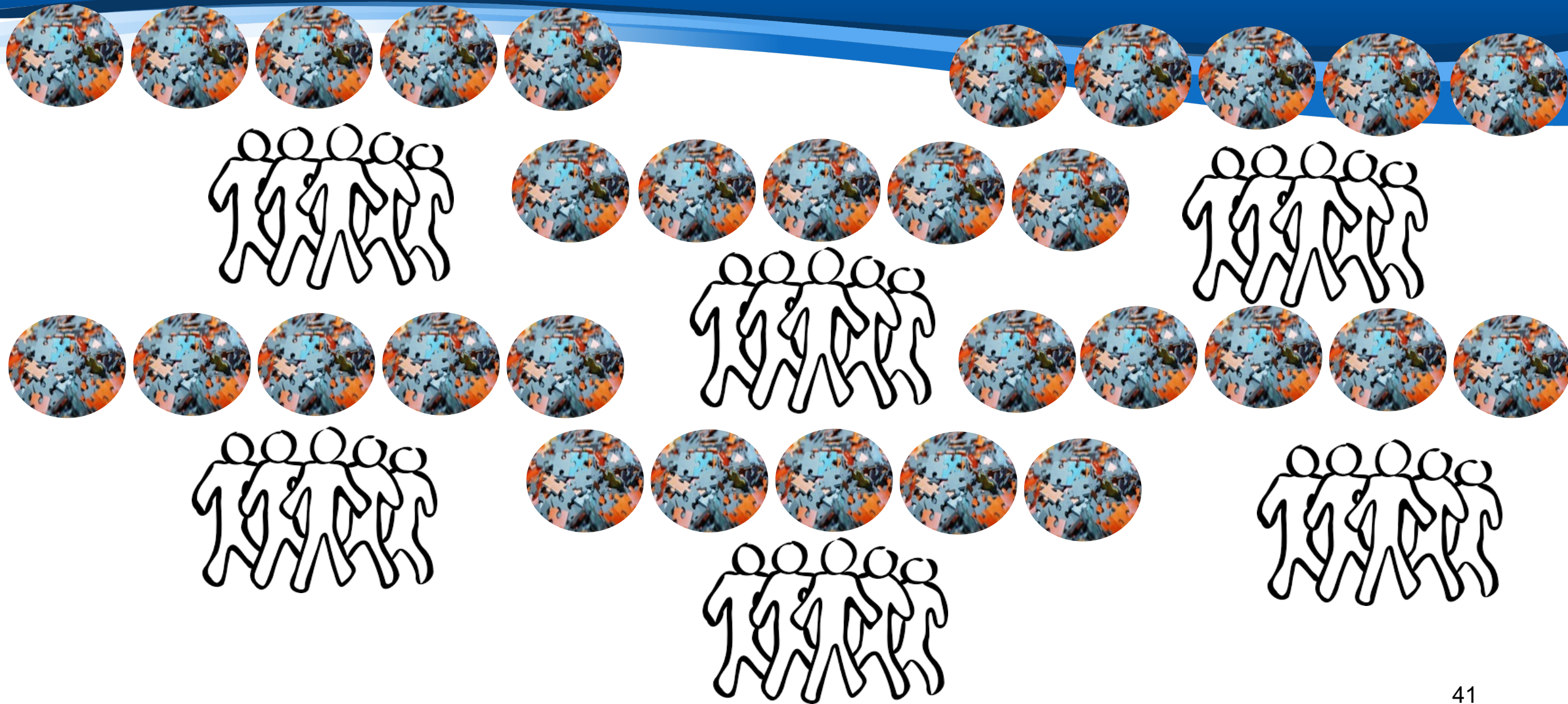# For more complex problems, we can increase the level of RIGOR by identifying and exploring more THEMES
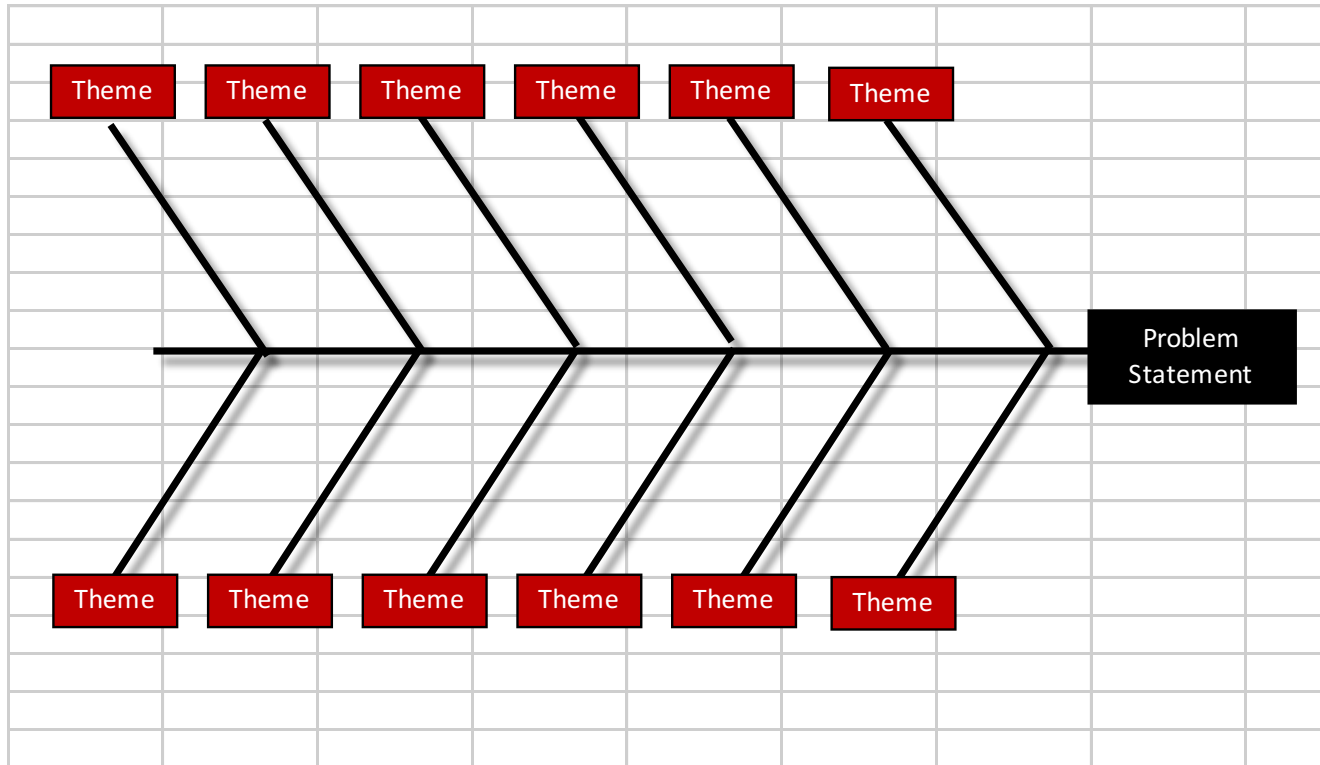
LL#14: However, the Fishbone Themes prompt us to attack a problem from different perspectives, helping us generate Lines of Inquiry we may not have otherwise considered

How we conduct interviews is one of the most inefficient aspects of RCA and introduces bias

Each individual interview reflects that person's bias and generates pages of notes - many pieces of a larger puzzle

LL#15: Switch from Interviews…

- Conducting individual interviews creates a lot of notes that have to be reconciled at a later time…individuals may also try to "steer" the team.

- Taking notes is not transparent to the groups and can create distrust and lack of cooperation.

- Separating the RCA team to conduct interviews injects bias from team members as they can interpret what they heard during interviews in different ways.