The Project Academy Series: Test Management/Quality Assurance

- March 24 & 28, 2014

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Test Management/Quality Assurance

Agenda

- **Welcome & Introduction**
- **Overview of Test Management**
- **Objectives**
- **What is User Acceptance Testing (UAT)? (And What UAT Isn't)**
- **Importance of Integrating QA into System Development**
- **Benefits of Effective Testing/Pitfalls of Ineffective Testing**
- **Case Studies**
- **Effective Test Management Practices**

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Introductions

- **John Logan**
  - **Project Director, CMIPS II Project**
- **Richard Baptist**
  - **Application Support Manager, CMIPS II Project**
- **Jim Kaupanger**
  - **Project Management Advisor for QA, CMIPS II Project**

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Objectives

- ■ **What does UAT really mean?**

- ■ **Understanding the importance of Quality assurance.**

- ■ **Pitfalls of inadequate testing.**

- ■ **Effective Test Management practices.**

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What is UAT?

- **What are the other main testing phases?**

- **How is UAT fundamentally different?**

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What is UAT?

- **Who are the USERS?**

- **What are they ACCEPTING?**

- **What kind of TESTING?**

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What is UAT?

- **Hundreds of definitions. One example:**

- **User acceptance testing (UAT) is the last phase of the software testing process. During UAT, actual software users test the software to make sure it can handle required tasks in real-world scenarios, according to specifications.**

- **UAT is one of the final and critical software project procedures that must occur before newly developed software is rolled out to the market.**

- **UAT is important because it helps demonstrate that required business functions are operating in a manner suited to real-world circumstances and usage.**

Cory Janssen (Technopedia)

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What is UAT *not*?

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What is UAT *not*?

■ **Can you test quality *into* a system at UAT time?**

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Importance of Integrating QA Into Project Development

- **When does the quality assurance of a project need to start?**

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Importance of Integrating QA Into Project Development

- **If there was a system development standard named Quality Driven Development (QDD), what would be the attributes of the standard?**

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Importance of Integrating QA Into Project Development

■ Re-visiting the concept _and_ mindset that you can't test quality _into_ a system at UAT time, how can you and the whole team improve testing and the results of testing?

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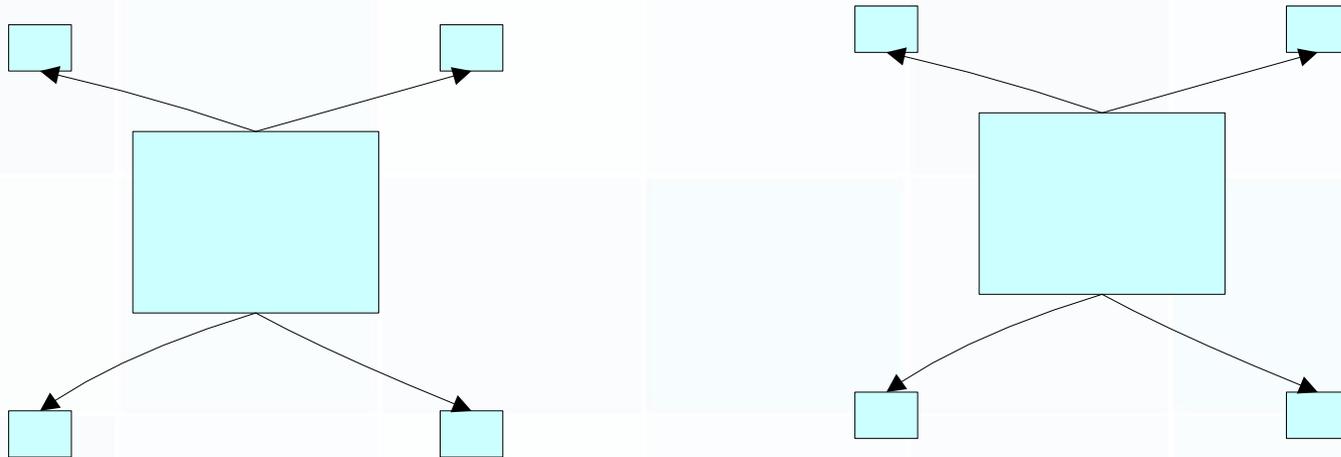
Importance of Integrating QA Into Project Development

- Does integrating Quality Assurance (building quality into requirements, design, development, etc) take more time?

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Benefits of Early, Effective Testing

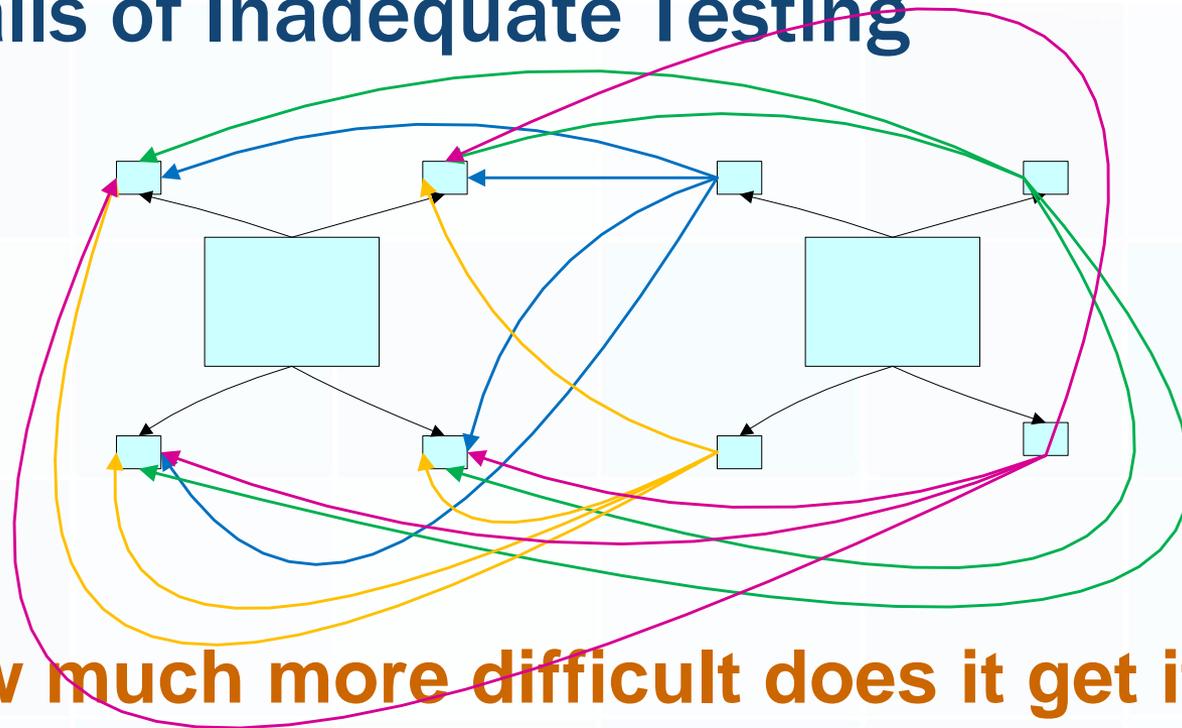**Pitfalls of Inadequate Testing**

Is it possible to test each of the 8 end-points if you test them individually and thoroughly?

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Benefits of Early, Effective Testing

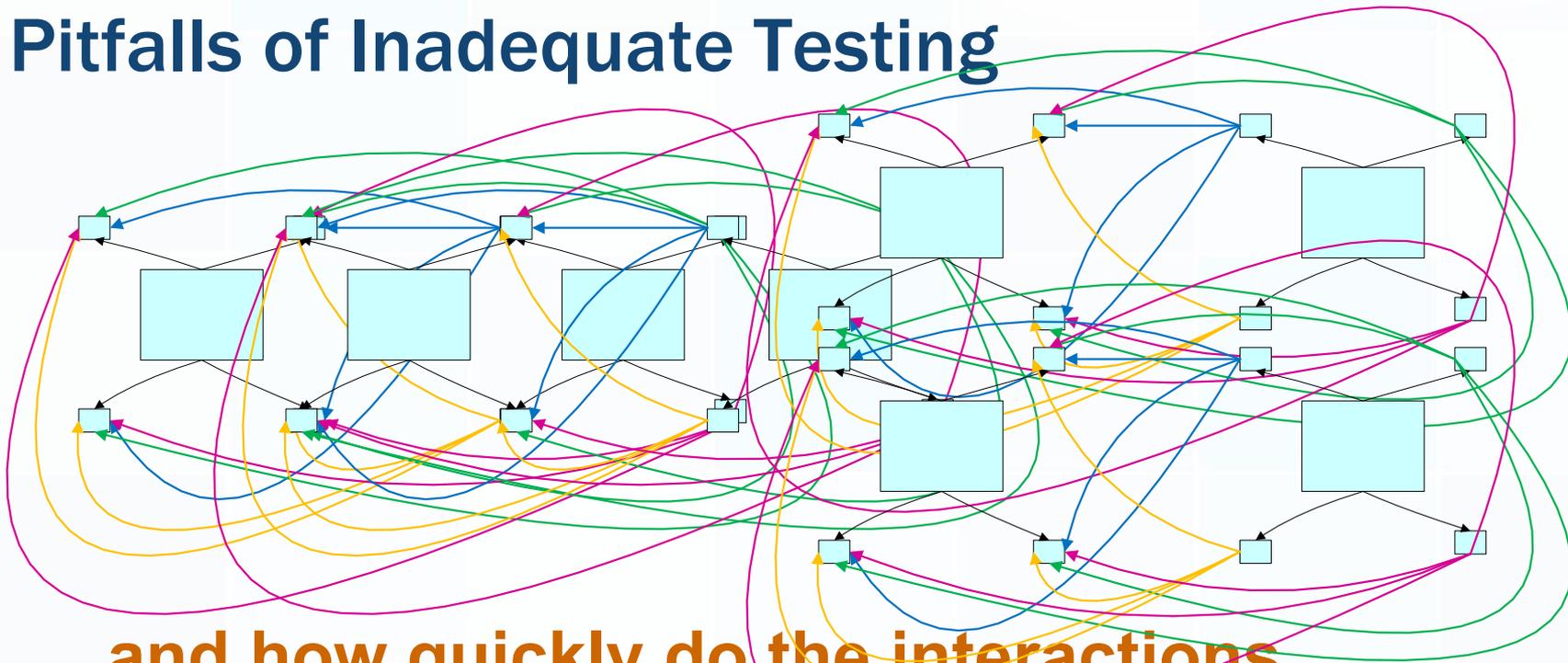## Pitfalls of Inadequate Testing

How much more difficult does it get if the developer waits and doesn't test individual outputs?

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Benefits of Early, Effective Testing

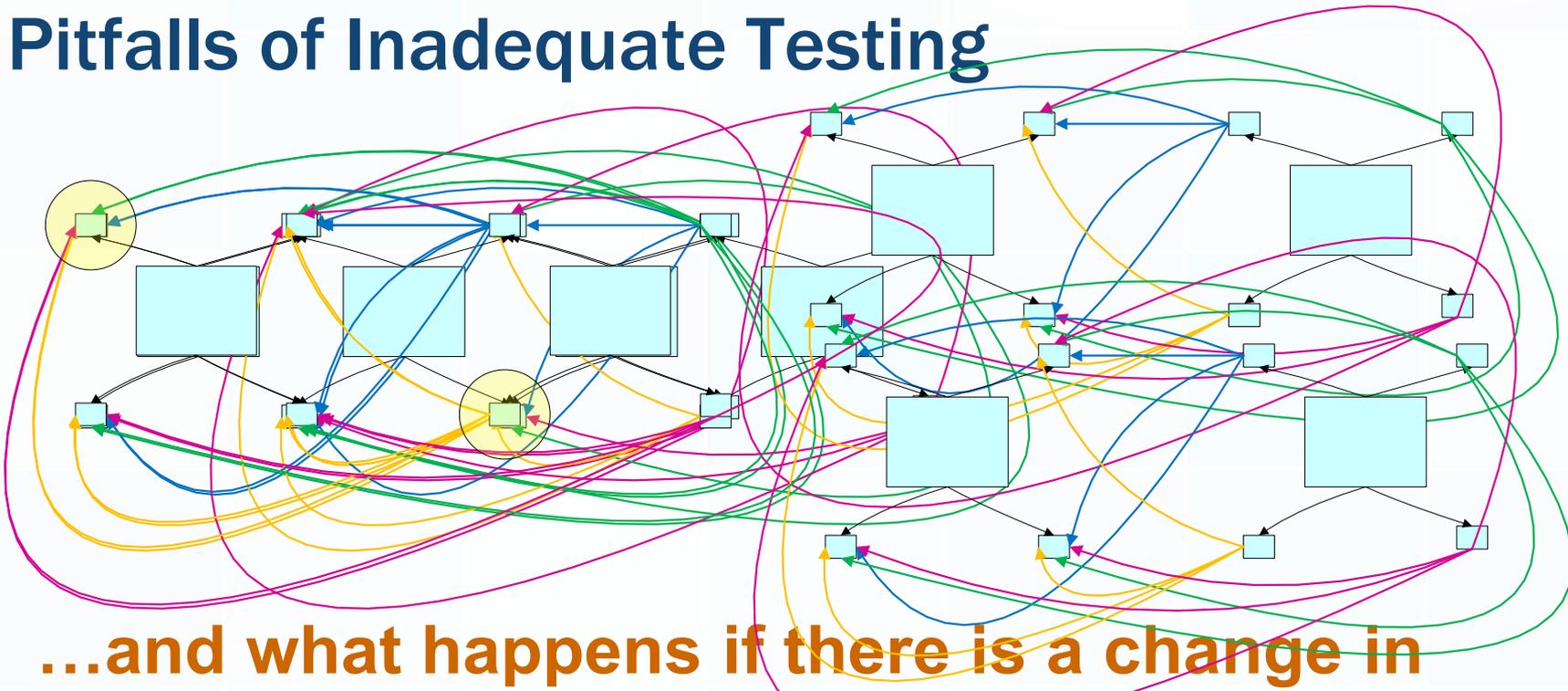**Pitfalls of Inadequate Testing**

…and how quickly do the interactions become too many and too complicated to even POSSIBLY test?

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Benefits of Early, Effective Testing
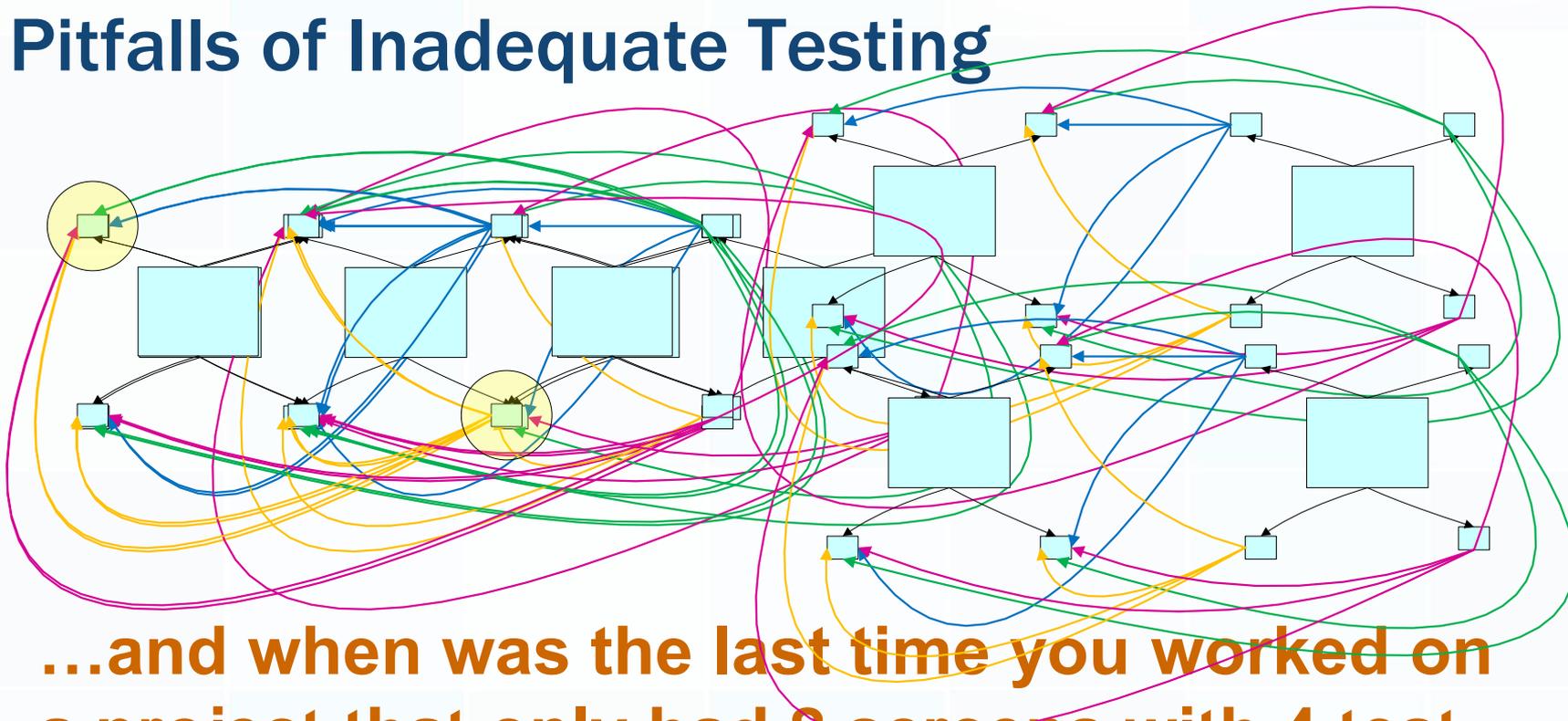
Pitfalls of Inadequate Testing

…and what happens if there is a change in requirements (because there _WILL_ be)?

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Benefits of Early, Effective Testing

Pitfalls of Inadequate Testing

…and when was the last time you worked on a project that only had 8 screens with 4 test-points each?

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Benefits of Early, Effective Testing

Pitfalls of Inadequate Testing
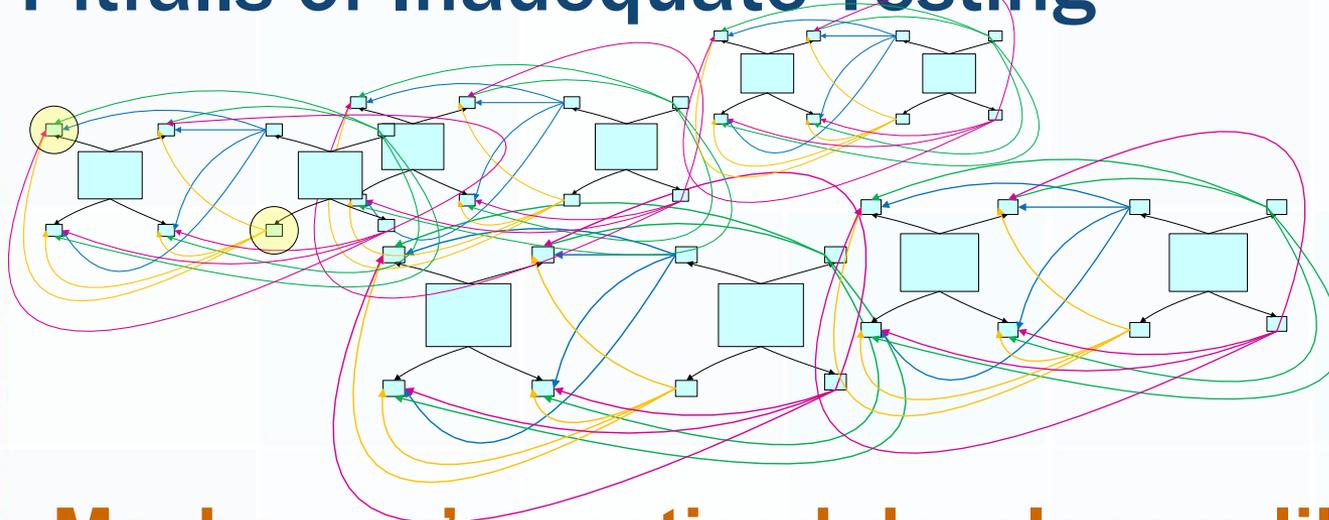
Developer Bad Habit Mindset:

"I don't need to test effectively—QA will catch it."

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Benefits of Early, Effective Testing

Pitfalls of Inadequate Testing
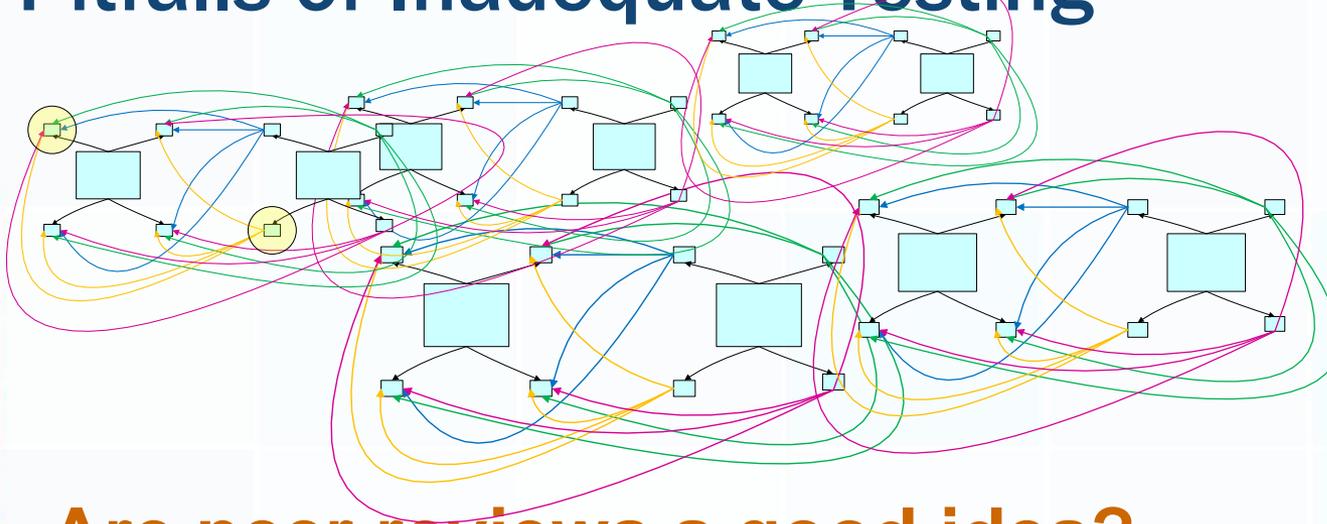
Maybe you've noticed developers like this:

"It seems like every time I send a problem to Joe to fix, he fixes it, but he breaks the system somewhere else."

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Benefits of Early, Effective Testing

Pitfalls of Inadequate Testing
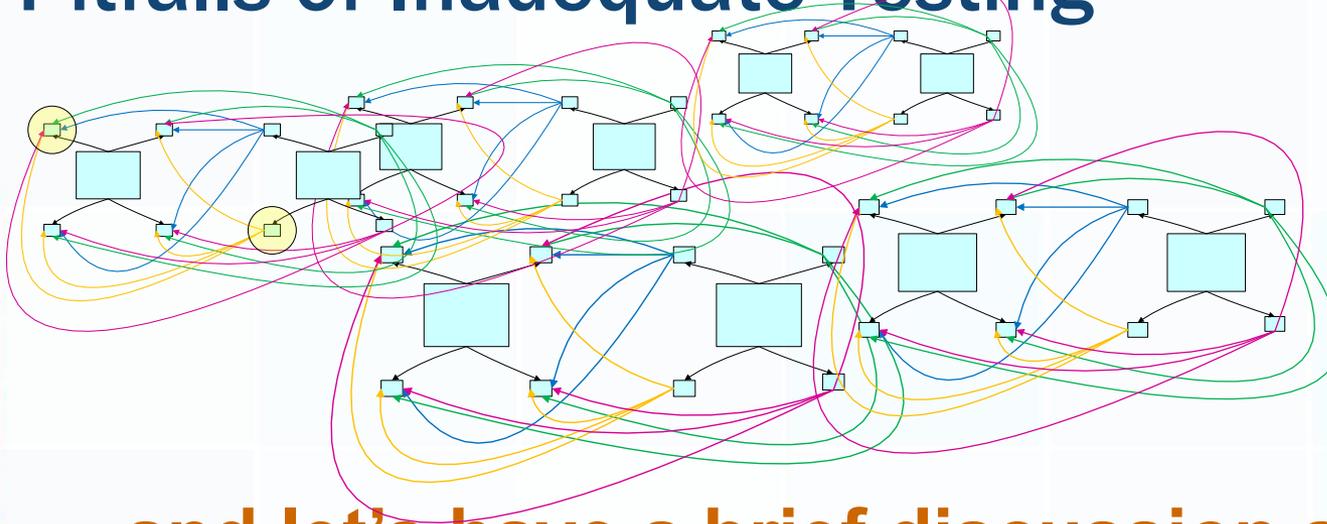

Are peer reviews a good idea?

What does it take for them to be effective?

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Benefits of Early, Effective Testing

Pitfalls of Inadequate Testing

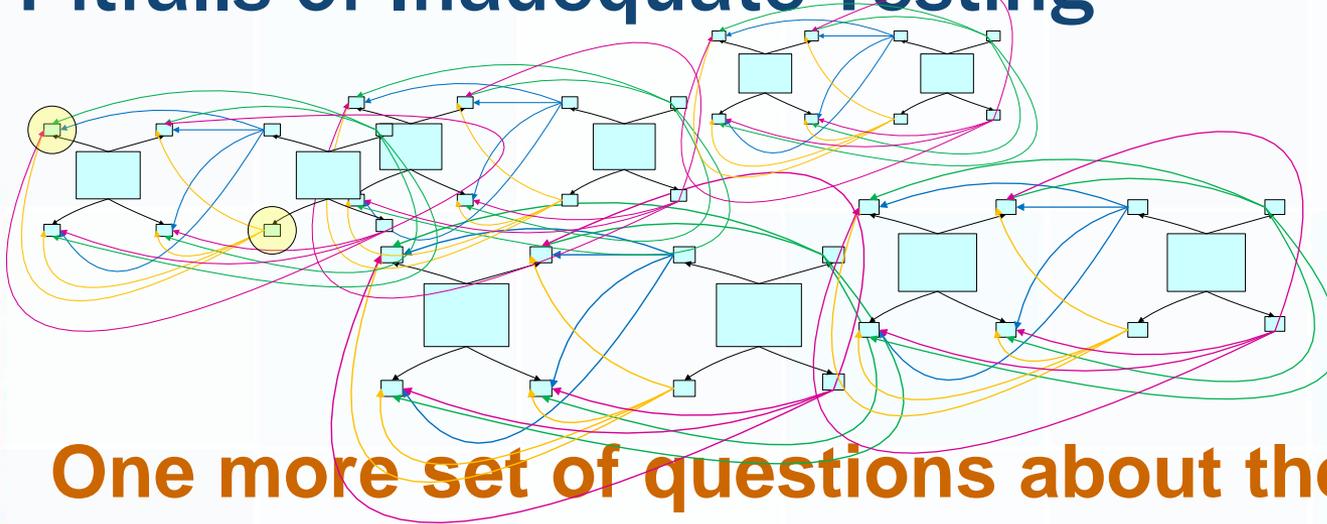**…and let's have a brief discussion about the "accountability" part.**

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Benefits of Early, Effective Testing

Pitfalls of Inadequate Testing

One more set of questions about these diagrams. We've talked only about developer quality when they're writing code. Does individual, low-level QA apply to anyone else or anywhere else on the project?

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Office of Information Security

SAM Chapter 5300

- 5315 Information Security Integration

- "Integrate information security design requirements into both manual information handling and information processing functions, and information technology activities, including throughout the system development lifecycle (SDLC);"
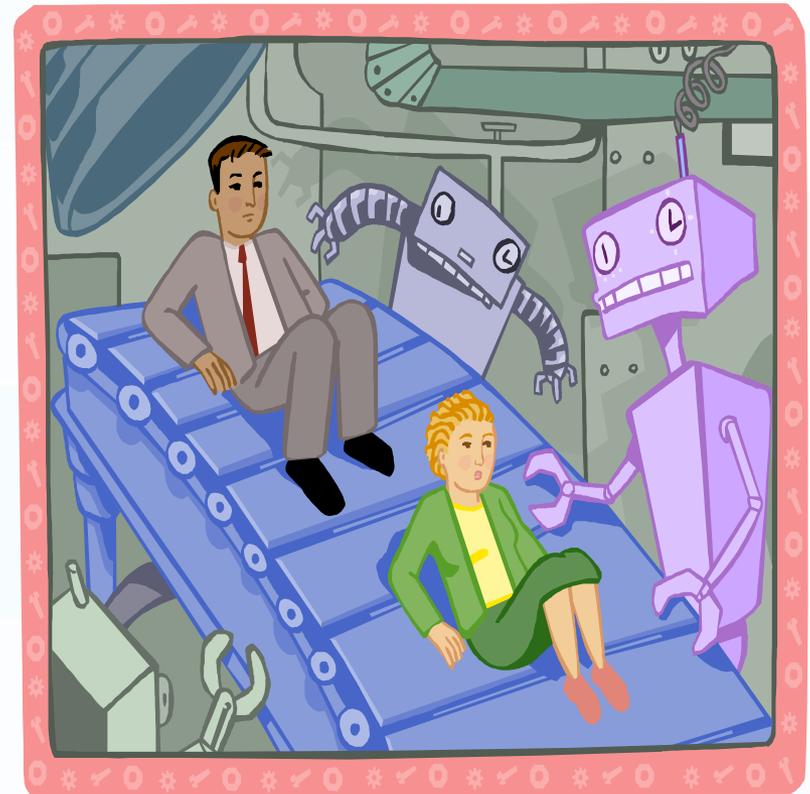
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- Security
- Trustworthiness
- User Role Validation
- Policies and Procedures
- Configuration Management
- Change Management
- Penetration Testing for Vulnerabilities
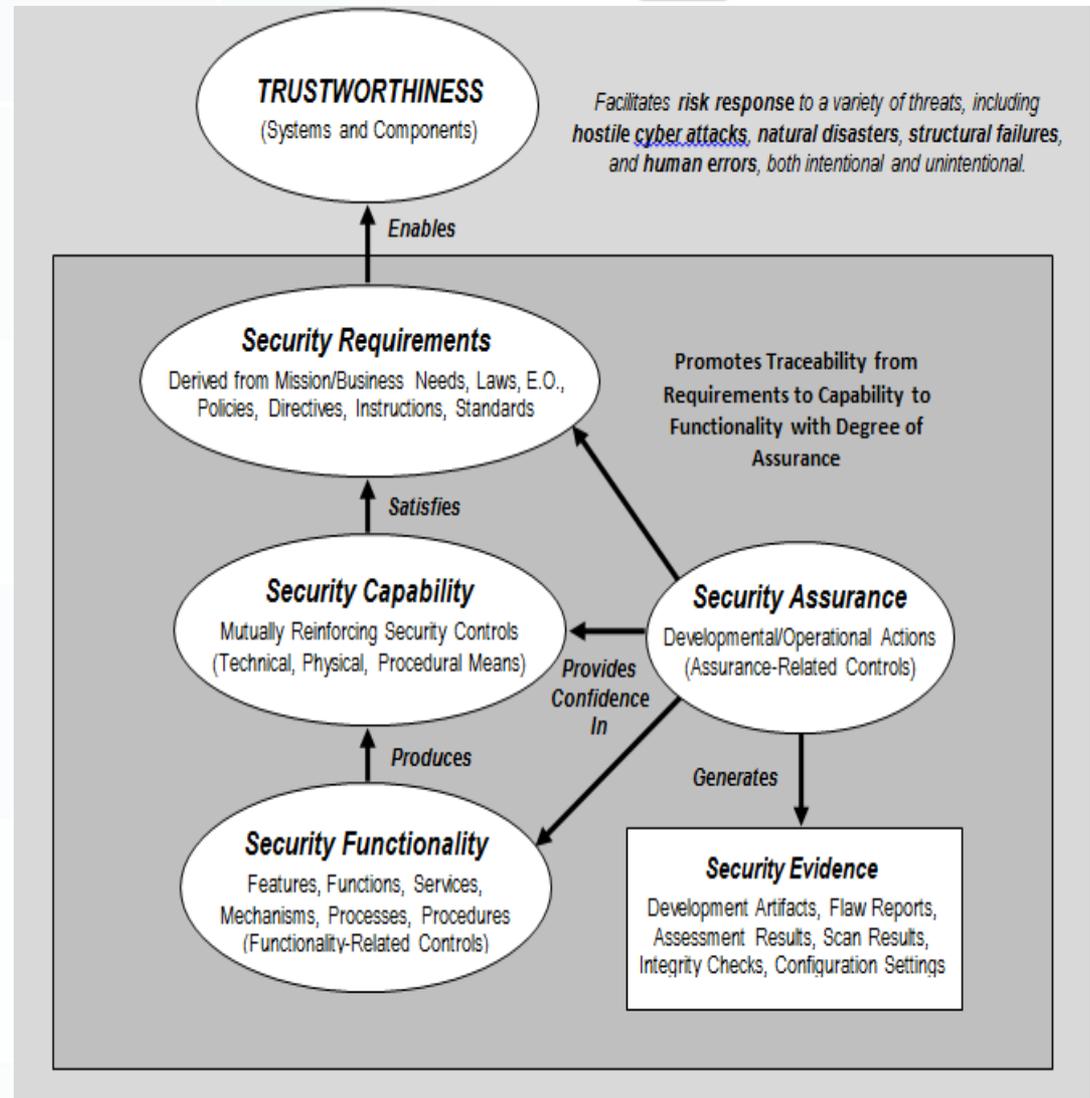- User Support – Credential Management
- NIST 800-53

FIGURE 3: TRUSTWORTHINESS MODEL

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Case Study 1

- You are a State project manager, and you are brought onto a State project to manage the Quality Assurance portion of the project.

- The project is large (over $50 million with over 3000 planned end users).

- The system is being developed by a systems integration vendor, and the State is responsible for project management, providing subject matter experts (SME's), managing the contract, operations, user acceptance testing (UAT), etc.

- The requirements gathering, analysis, and design phases have all already been completed and approved. The vendor is reporting that development is about 75% complete.

- Because specific quality assurance measures were not contracted for early in the project, you realize you are being brought onto a project where you are the first person on the project doing formal QA.

- NOTE: This is not to say that quality was ignored or that the analysts, designers, SME's, developers, or managers were sloppy—there just weren't specific QA requirements or processes until this point of the project. Your job—at this late date—is to make QA happen.

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Case Study 1 (continued)

- The SOW and project schedule do require the vendor to complete unit, functional, integration, and regression testing. They are required to produce documented results of the testing, but they are not required to let the State participate in or observe their testing. The vendor is not required to demonstrate any iterations or rough-draft versions of the system during the development phase, and they are not doing so.

- You are relieved to find out the project does have good risk management, issue management, and change management processes in place. There have been a number of change orders: some because of correctly approved and documented scope changes, but some have been done because of requirements that were not analyzed or documented properly and ended up being quite ambiguous.

Main Question:

- What are some of the steps you would take to implement an effective QA Team and QA processes going forward from here?

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Case Study 2

- Using the same project and same situation as described in Case Study 1, assume that an 8-week UAT is scheduled for six months from now. It has been determined that, in addition to three SME's, there will be four end-users who will participate in the UAT.

  Main Question:
  - What are some of the preparation tasks that need to be done?

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Case Study 3

- Using the same project and same situation as described in Case Study 1 *and* assume the UAT from Case Study 2 has completed.
- Even though the UAT has completed, there are still 210 open defects of varying severity.
- Pressure from stakeholders to get the system implemented in pilot is mounting .
- The project director discusses with you the that waiting until the system is perfect with zero open defects is not feasible or desired.
- She wants you to conduct a "good enough for pilot implementation" analysis and then prepare recommendations for what needs to happen for the system to be good enough.

(continued)

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Case Study 3 (continued)

Breakdown of Open Defects

Severity	Notes	Number of Defects
1	Showstoppers—major portion of system will not function	4
2	Almost showstoppers. Business in the smaller section of the system where these errors occur will not work.	80
3	System is workable if vendor documents and will train users about "workarounds".	30
4	These defects are about formatting errors and other topics that are inconvenient, but the system is workable.	80
5	Requests for enhancements.	16
	Total	210

Further analysis of the Severity 2 defects:

Severity	Notes	Number of Defects
2	Almost showstoppers. Business in the smaller section of the system where these errors occur will not work. These Severity 2 defects will affect all counties.	50
2	Almost showstoppers. Business in the smaller section of the system where these errors occur will not work. These Severity 2 defects will **not** affect the pilot counties.	30
	Total	80

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Case Study 3 (continued)

Main Questions:
- What would you analyze?
- What might be some recommendations?

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Effective Test Management Practices

- All through the morning we have discussed various situations to watch for and ways to improve quality.

- Let's now talk about some other Effective Test Management Practices that you may not find in a text book.

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Effective Test Management Practices

- What does it mean that the Test Manager needs to have "thick skin"?

- Why does the Test Manager need to have "thick skin"?

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Effective Test Management Practices

- ◼ **Why does the Test Manager need to be (and stay) calm, cool, and collected?**

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Effective Test Management Practices

- **Why does the Test Manager need to be (and stay) a bit pushy?**

- **How does "finesse" enter into this?**

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Effective Test Management Practices

■ **What are some Effective Test management Practices when the Systems Integration Vendor is responsible for part of the QA?**

Vendor QA Responsibilities: **State Responsibilities:**

•Unit test

•Functional test   •UAT

•Integration test

•Regression test

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Effective Test Management Practices

- ■ **How critical are communication skills to an effective Test Manager?**

- ■ **What are some examples of important (and not so important) communication needed?**

- ■ **What if you have information about QA others may not want to hear?**

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Final questions and/or discussion