Lighthouse
SOFTWARE TESTING

Outsourcing Software Systems

Assuring Success

How Big? How much? How long?
… and how do I get what I expect

Jeff Van Fleet, President and CEO

Lighthouse SOFTWARE TESTING

Vision

What we want

- On time delivery
- Expected functionality
- High quality
- Competitive price

- Open communications
- Clear expectations

Software Project Overruns are Pervasive

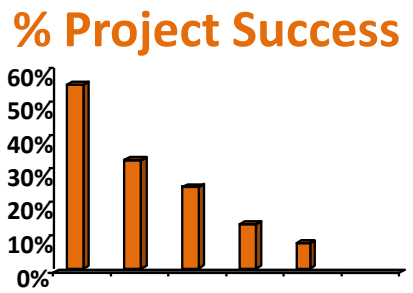
Industry Track Record

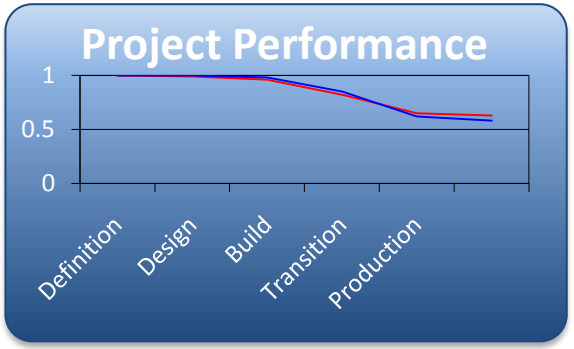
1. Larger projects = Lower Success [1]

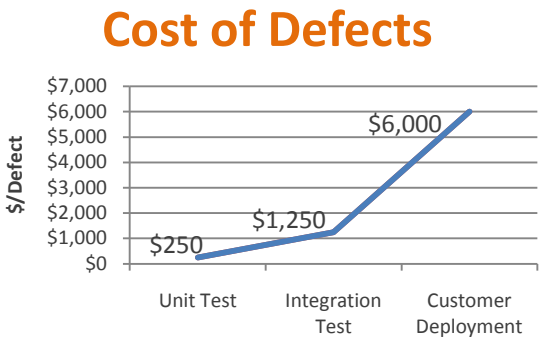
2. Large software projects average [1]

Cost	190% over budget
Schedule	220% over budget
Functionality	61% of plan

3. Unplanned rework due to latent defects is the number one factor; defects found in later phases cost 5X from previous phase [2]







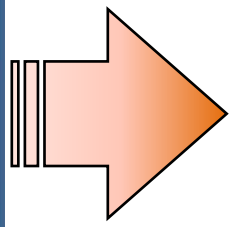
[1] Data adapted from Standish Group (2004)
[2] Data from Lighthouse Technologies, Inc.

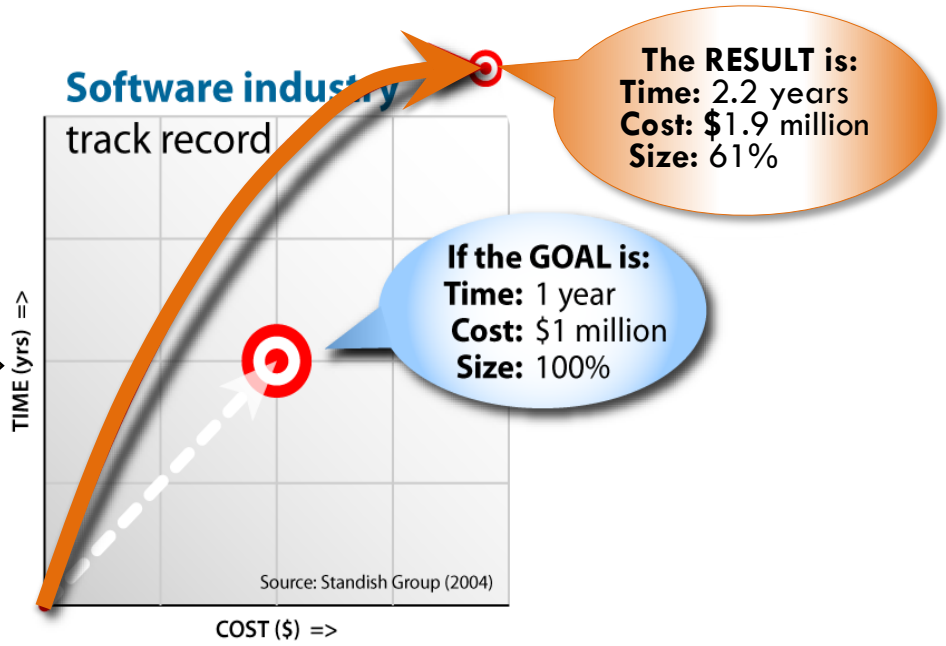
Typical risks lead to typical results

Top 6 Project Risks

1. Lack of user input
2. Incomplete requirements
3. Changing requirements
4. Lack of executive support
5. Technology incompetence
6. Unrealistic Expectations

Source: Standish Group (2004)





How big? How much? How long?

Three big issues

Project Scoping – Establish Baseline

- Establish realistic cost, schedule, and quality expectations
- Achieve successful leadership approval, RFP development, and vendor negotiations

Communication

- Assure all stakeholders understand process ,roles, and responsibilities
- Assure project stays aligned with business need

Visibility

- Assure transparency into entire development process
- Drive out defects with milestone gate checks, inspection, and testing
- Have information for course corrections

Project Scoping

The solution: Function Point Analysis

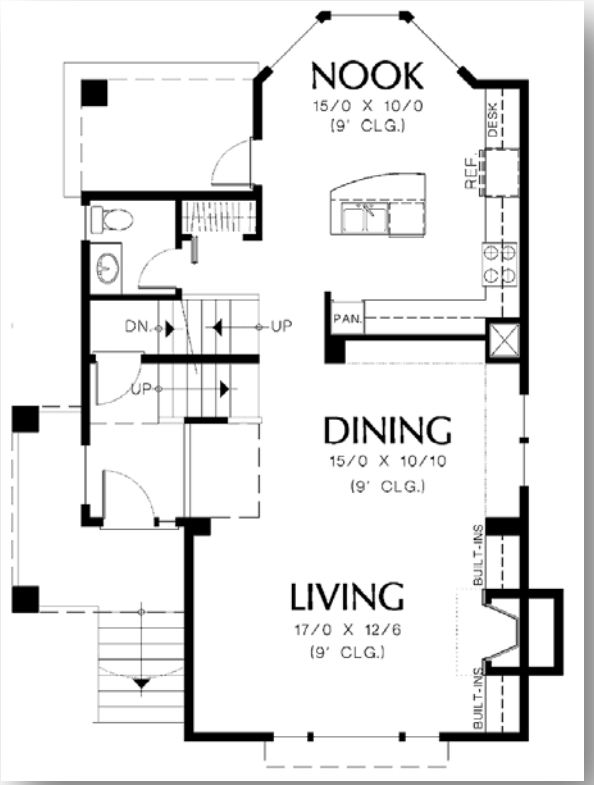
A method to break software systems into smaller components, so that they can be better understood.

If building software is like building a house …

The solution: Function Point Analysis

A method to break software systems into smaller components, so that they can be better understood.

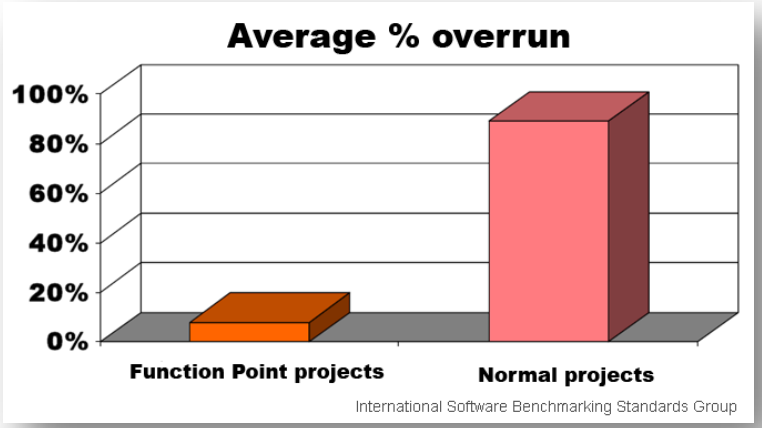
… then Function Points are like square feet.



Project Scoping

Why Function Point Analysis?

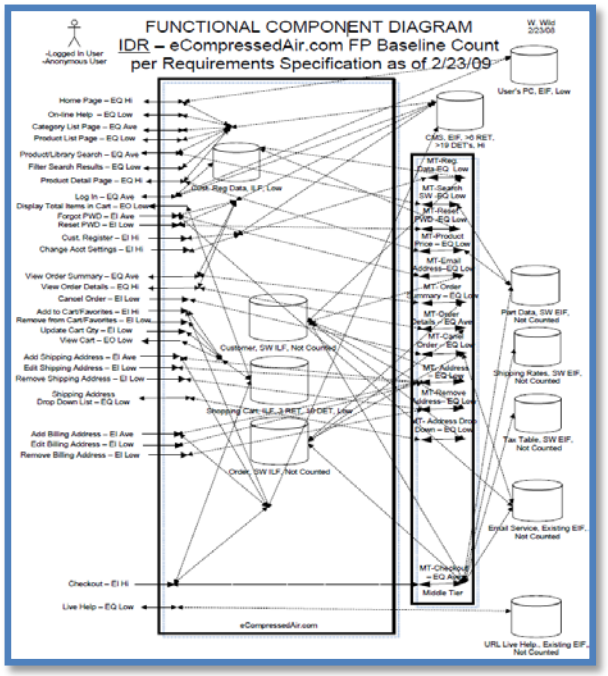
- ISO recognized tool to measure software size
- Sets scope of effort (like floor plan's cost/square foot)
- Estimate is precise (accuracy ±5%)
- Managed by International Function Point User's Group (IFPUG)
- It allows comparison across all sizes and technologies
- ISBSG maintains database of 5100+ projects
- FP projects rarely overrun



Project Scoping – The Process

Needs Statement

Hskjdfk ksdkjl hashj lll a
Jldlfhlsdhjkfh kljl hkd hhkjs
Hjkdsklfhkjhkjsdk lsdh jkkj
dllk lkd dsl hsdljh sadiyiu h



Count the FPs

CMMI	$/FP	Defects/FP
1	$3035	1.77
2	$1683	0.94
3	$1350	0.51

Develop RFP Expectations

- Cost/FP
- Defects/FP
- Schedule/FP

How big? How much? How long?

Three big issues

Project Scoping

- Establish realistic cost, schedule, and quality expectations
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Communication – No ball gets dropped

- Assure all stakeholders understand process, roles, and responsibilities
- Assure project stays aligned with business need

Visibility

- Assure transparency into entire development process
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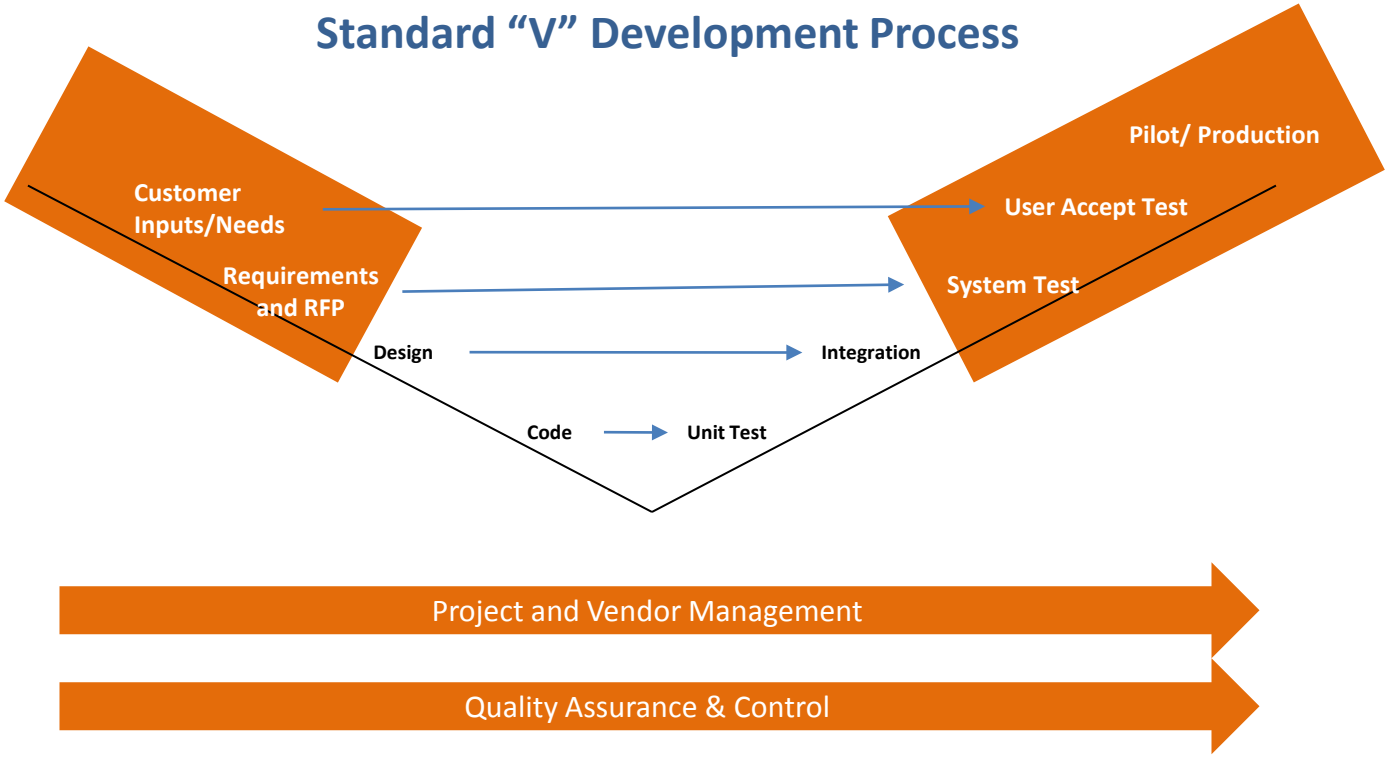
Communication

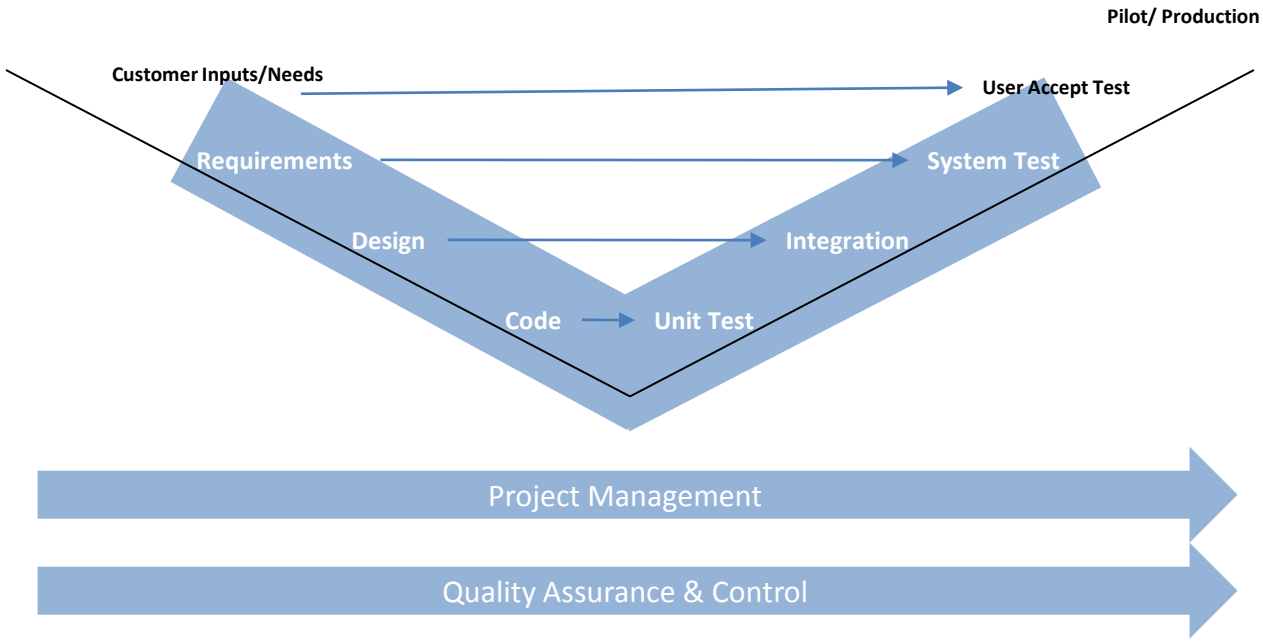
Client Responsibilities



Communication

Vendor Responsibilities

Standard "V" Development Process



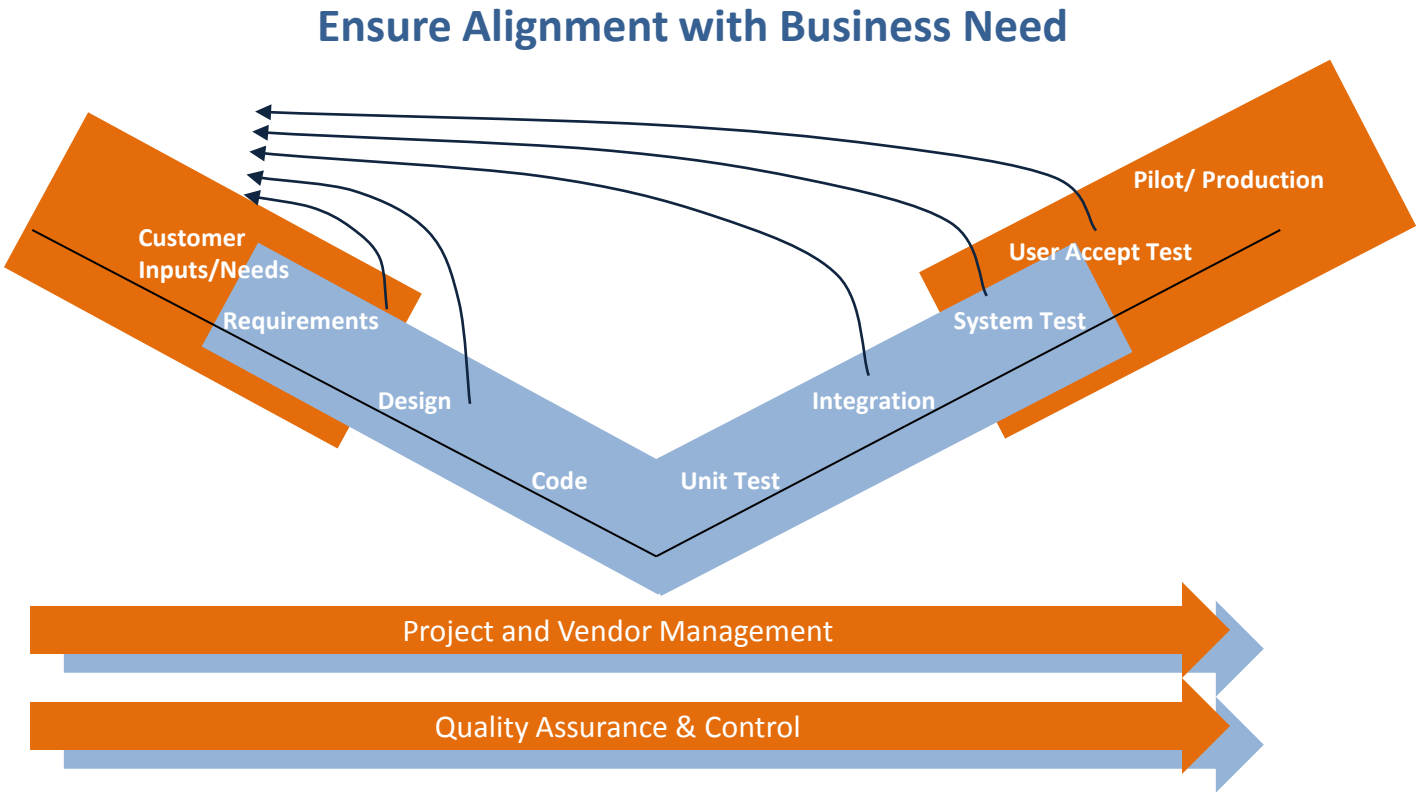
Communication

Lots of interfaces lead to lots of risks

Client	Interfaces	Vendor
• Customer Need		
• Requirements	→	• Requirements Verification
• Project Scoping		• Project Scoping
• RFP	→	• RFP Eval / Bid Decision
• Proposal Evaluation	←	• Proposal Development
• Contract Negotiations	↔	• Contract Negotiations
• Architecture Conformance	←	• Architecture
• Legacy System Interface	↔	• Legacy System Interface
• Design Inspections	←	• Design
• Code Inspections/ Standards	←	• Code
• Unit Test Inspections	←	• Unit Test
• Integration Plan /Test Inspect	←	• Integration / Integration Test
• Data Inspections	←	• Data Conversion / Cleansing
• System Test		• System Test
• User Acceptance Test		
• Pilot / Production		
• Project Mgmt	←	• Project Mgmt
• Configuration Mgmt	←	• Configuration Mgmt
• Quality Mgmt	←	• Quality Mgmt
• Org Change Mgmt		

Communication

Establish Milestone Gate Checks with Users



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Three big issues

Project Scoping

- Establish realistic cost, schedule, and quality expectations
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Communication

- Assure all stakeholders understand process, roles, and responsibilities
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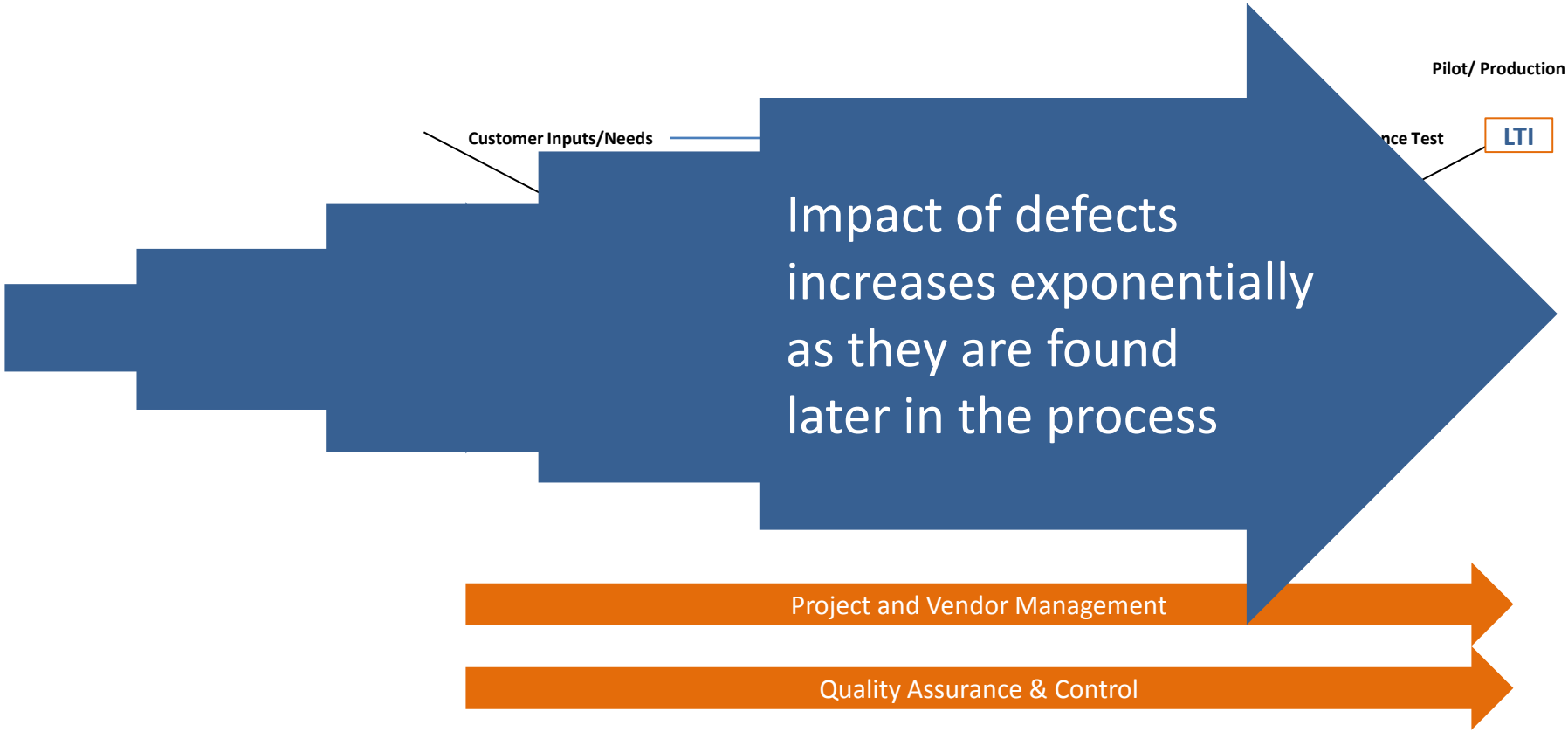
Visibility – Avoid Surprises

- Assure transparency into entire development process
- Drive out defects with milestone gate checks, inspection, and testing
- Have information for course corrections

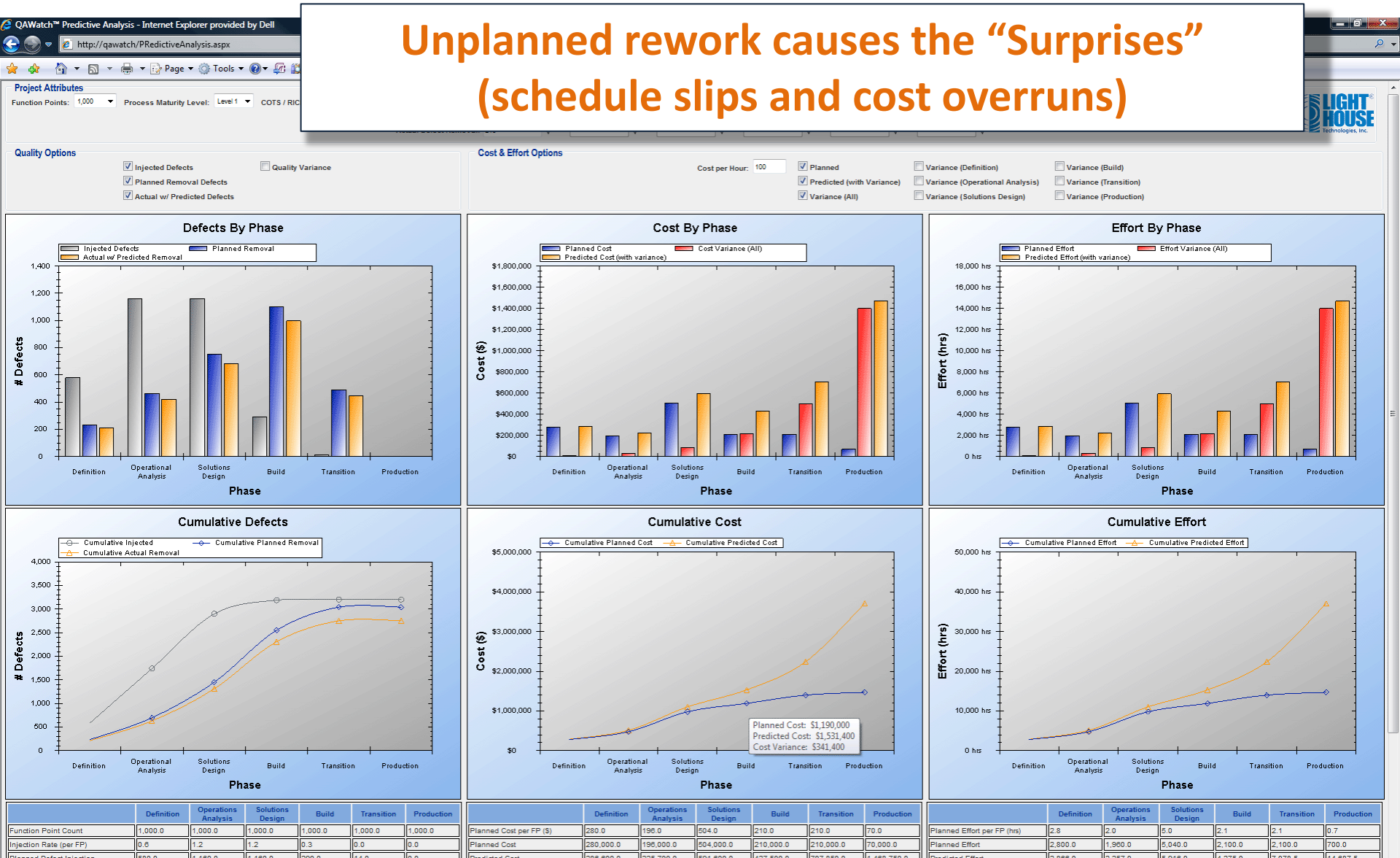
Visibility

Undetected defects cause unplanned rework



Visibility

Unplanned rework causes the "Surprises" (schedule slips and cost overruns)



	Definition	Operations Analysis	Solutions Design	Build	Transition	Production
Function Point Count	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
Injection Rate (per FP)	0.6	1.2	1.2	0.3	0.0	0.0

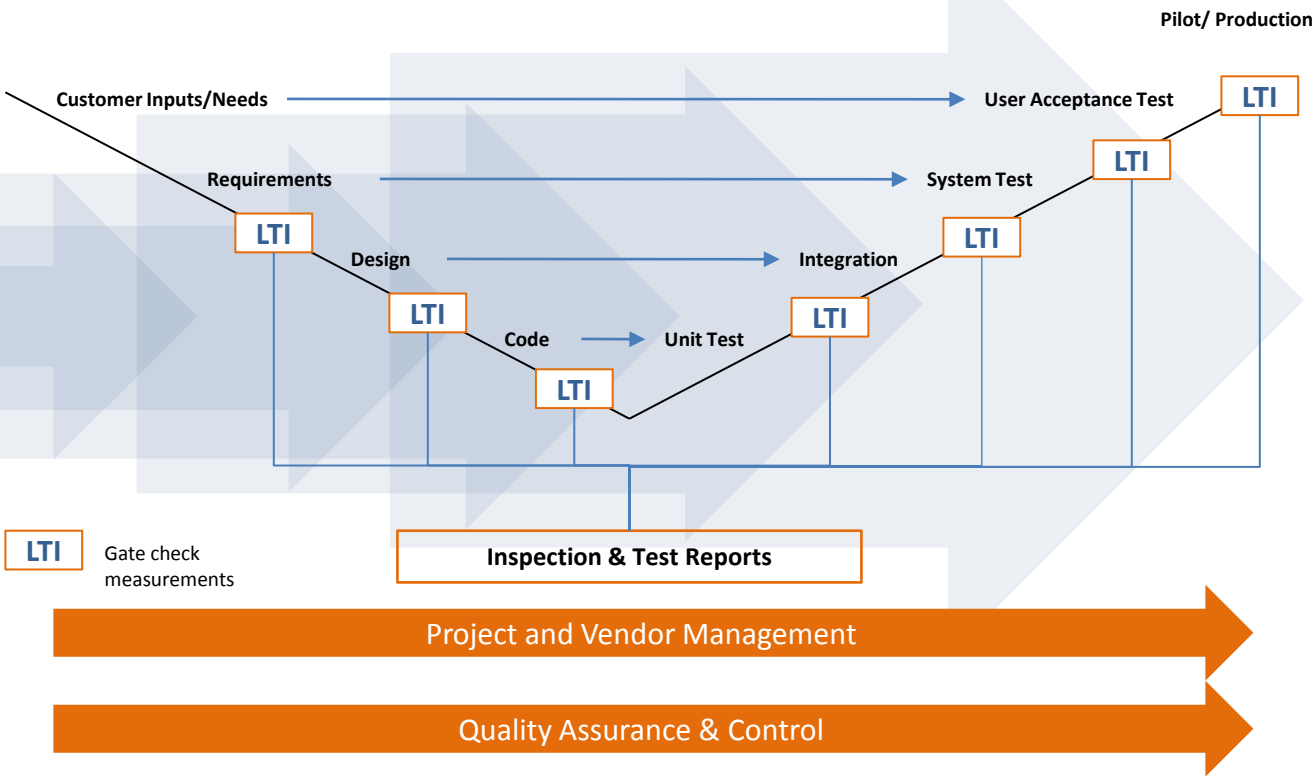
	Definition	Operations Analysis	Solutions Design	Build	Transition	Production
Planned Cost per FP ($)	280.0	196.0	504.0	210.0	210.0	70.0
Planned Cost	280,000.0	196,000.0	504,000.0	210,000.0	210,000.0	70,000.0

	Definition	Operations Analysis	Solutions Design	Build	Transition	Production
Planned Effort per FP (hrs)	2.8	2.0	5.0	2.1	2.1	0.7
Planned Effort	2,800.0	1,960.0	5,040.0	2,100.0	2,100.0	700.0

Visibility

Formal Milestones, Gate Checks, Inspections, and Testing eliminate "Surprises"

"To get what you expect, you must Inspect" – 7-Eleven



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Summary - Managing Risks

Risks

- Scope not known before proposals are received
- Vendor underestimates work
- Vendor thinks they are better than they really are

Mitigation

- Use FPA to estimate scope yourself
- In RFP, ask vendor for FP estimate and Basis of Estimate
- Ask for past performance projects and metrics, CMMI rating, and independent assessment of their performance

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Summary - Managing Risks (continued)

Risks	Mitigation
• Larger projects = Higher Risk	• Require iterative development. Vendor to identify the FPs/iteration in their project plan. Have specific schedule and quality metrics for each iteration.
• Heads off track and you don't know	• Define processes, I/F points, and milestone exit criteria. Inspect all work products and test each iteration.
• No user involvement / buy-in	• Have users involved in RFP, requirements, major milestones, iteration testing, and UAT

Recommendations for success

Getting best value

- Minimize proposal assumptions by building good requirements
- Use FPA to estimate scope to get budget approval
- Require cost/FP bids and require vendors to specify planned effort/FP and defects/FP
- Incent if early and less defects
- Penalize if late or more defects
- Agree to development process, milestones, and work products before starting project

Recommendations for success - continued

Trust, but Verify

Getting best value

- Inspect all work products, first article and 10-15%. Reject all if exceeds your threshold
- Specify maintainability expectations
  - Code complexity
  - Comment density
  - Conformance to architecture, design, and coding standards
  - User documentation
- Budget for sufficient team to inspect and test
  - The better the vendor is, the less this costs

Lighthouse SOFTWARE TESTING

Lighthouse Technologies, Inc. Services

Custom Software, ERP, or packaged apps

Full Application Lifecycle Management Solutions

- Vendor management for outsourced projects
- Internal teams - Reduced cost and schedule with increased quality

Component Services

- Full Service Testing
- Program Management
- Requirements
- Assessments, Audits, Benchmarks
- Project Scoping
- RFP and Proposal Analysis

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