# Independent Verification and Validation (IV&V)

## May 21, 2015

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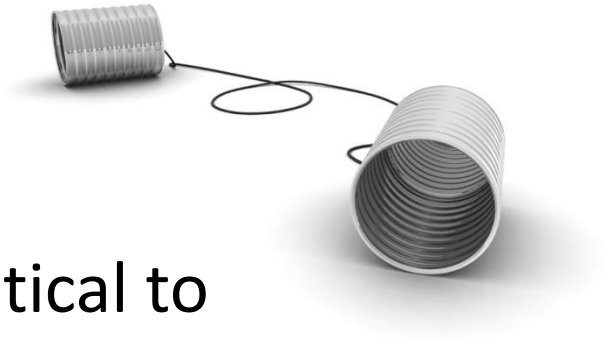
# What they are saying



"Delivering state-of-the-art systems is critical to sustainable growth. "

"68% of Projects fail to deliver intended value"

"44% of projects are late, over budget, and lack required functionality"

# Causes of Project Failure

- Idea, Scoping & Explore
  - Poorly defined business objectives, benefits, scope and requirements
  - Unclear project structure, governance and decision framework
  - Weak business owner or project sponsor & steering committee
  - Lack of guiding principals, "the commandments"
  - No Benefits Management Process
- Planning
  - Aggressive unrealistic schedule due to lack of planning
  - Inadequate understanding of complexities and key factors necessary to succeed
  - Misalignment of PM and Project Complexity

# Causes of Project Failure

- Execution
  - PM need to be a friend, projects require "Leaders"
  - PM Micromanagement of SMEs
  - Inadequate quantification, and management of project risks
  - Ineffective governance mechanisms and inconsistent decision framework
  - Lack of accountability, RACI with "Names"
  - Poor vendor management and accountability, "Transparency"
  - Lack of appropriate approvals and tracking against contract
  - Incomplete operating and maintenance process
  - Operational Readiness

# Causes of Project Failure

- Closure
  - Inadequate lessons learned
  - No benefits realization process
  - Lack of sustainability process "Burn In"

# IV&V Defined

Utilize "IV&V" to *proactively* identify and analyze projects that are *critical to business success* and that in the event of failure pose a significant risk to the organization.

"IV&V" is an *independent quality assurance* process that identifies project management and SDLC issues and recommends *practical and timely corrective action*.

# Verification and Validation

- ***Verification:*** The evaluation of whether or not a product, service, or system *complies* with a regulation, requirement, specification, or imposed condition.

  –***Ensuring the system is built right***

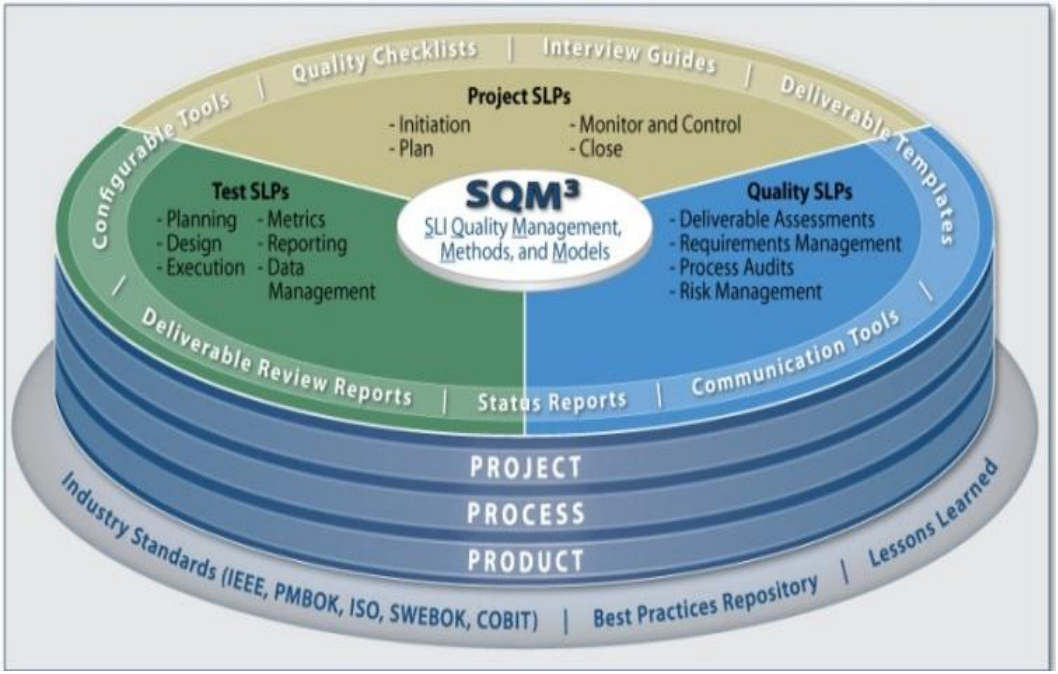
- ***Validation:*** The assurance that a product, service, or system *meets the needs of the customer* and other identified stakeholders. It often involves acceptance and suitability with external customers.

  –***Ensuring the right system is built***

# Components of Quality

**Quality Management** has a specific meaning within many business sectors with four main components:

- Quality Planning
- Quality Control
- Quality Assurance
- Quality Improvement



# Quality Defined

## Quality

- "Fitness for purpose"
- "Quality is the Continuous Improvement of All Processes"
- "The Right *Product* at the Right *Time* in the Right *Place*"

## Quality Assurance

- The *prevention* of defects

## Quality Control

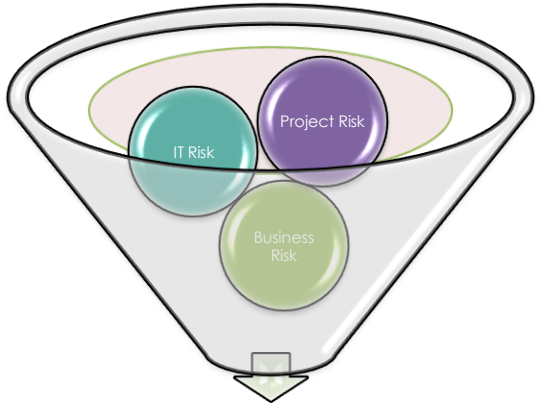
- The *detection* and correction of defects (find and fix)

# Underpinning Vendor Contracts

- Agreement / Contract
- Deliverables
- Performance requirements
- Agreement of responsibilities
- Price structure & Payment terms
- Confidentiality
- Termination rights of each party
- Right to audit
- SLA

✓ Stage Gating

# Planning




**Annual Health-check Plan**

PRODUCT DEVELOPMENT LIFE CYCLE

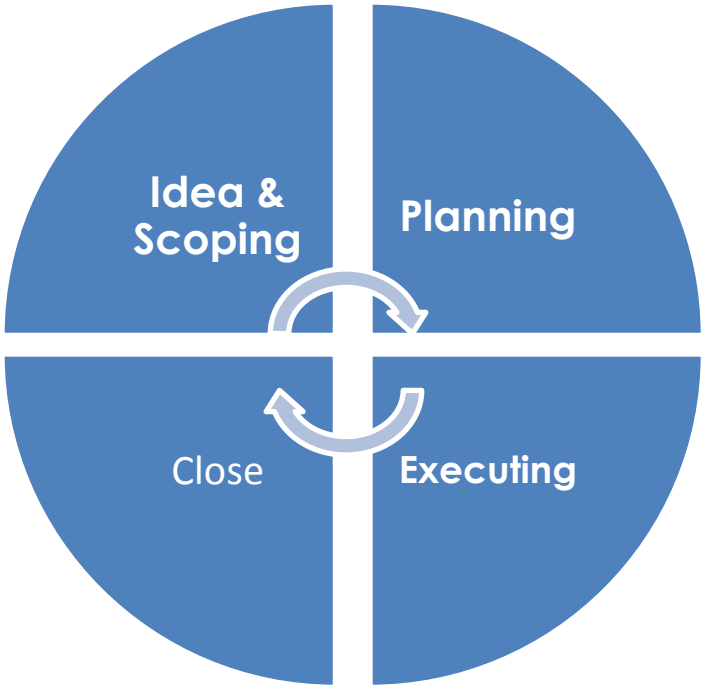
**Idea, Scoping & Explore** → **Planning** → **Execution** → **Assess**

| Assess Governance Model | Assess Project Planning | Assess Operational Readiness | Assess Project Close Benefits Realization |
|---|---|---|---|
|  |  |  |  |

**The level of project risk will determine which phases will be reviewed by the Quality Group**

# Touch Points

- Governance
- Business Case
- Charter
- Organization Structure
- Budget




- Scope / Time /Cost
- Quality
- Human Resource
- Communication
- Risk & Issue
- Procurement

- Project Close
- Benefits Realization
- Post-mortem

- Requirements
- Operational Process
- Acceptance Test
- Security
- Cutover Plan
- Business Continuity
- Training
- Change

# Quality Management, Methods and Models (SQM3)

What is SQM3?

- A comprehensive set of methods used to *manage and govern projects.*
- SQM$^3$ uses separately articulated, modular techniques, called *Standard Lab Procedures (SLP)* to guide information technology projects through their life cycles.
- Each SLP references *checklists, document templates, and sample artifacts* that can be used as base artifacts required for projects.

SLPs are the foundation for SQM3. Topics for *SLPs* include:

- Project Management (P)
- Quality and IV&V Management (Q)
- Test Management (T)

# Benefits of (SQM3)

- Built-In Quality: These resources are built on industry standards, PMBOK guidelines, IEEE 1012-2012: Standard for Software Verification and Validation, SDLC methodologies and the experience of project management and test professionals

- Efficiency: You won't have to *"reinvent the wheel"*. You can "hit the ground running" with each project or project phase.

- Consistency: The approach to delivery and artifacts delivered to each project and for each client have the same look, feel, content, information, and value.

- http://www.nasa.gov/centers/ivv/about/vision_mission_values.html

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# so much more than just **testing**

Gregory Doucette – Managing Director Professional Services GLI
g.doucette@gaminglabs.com