



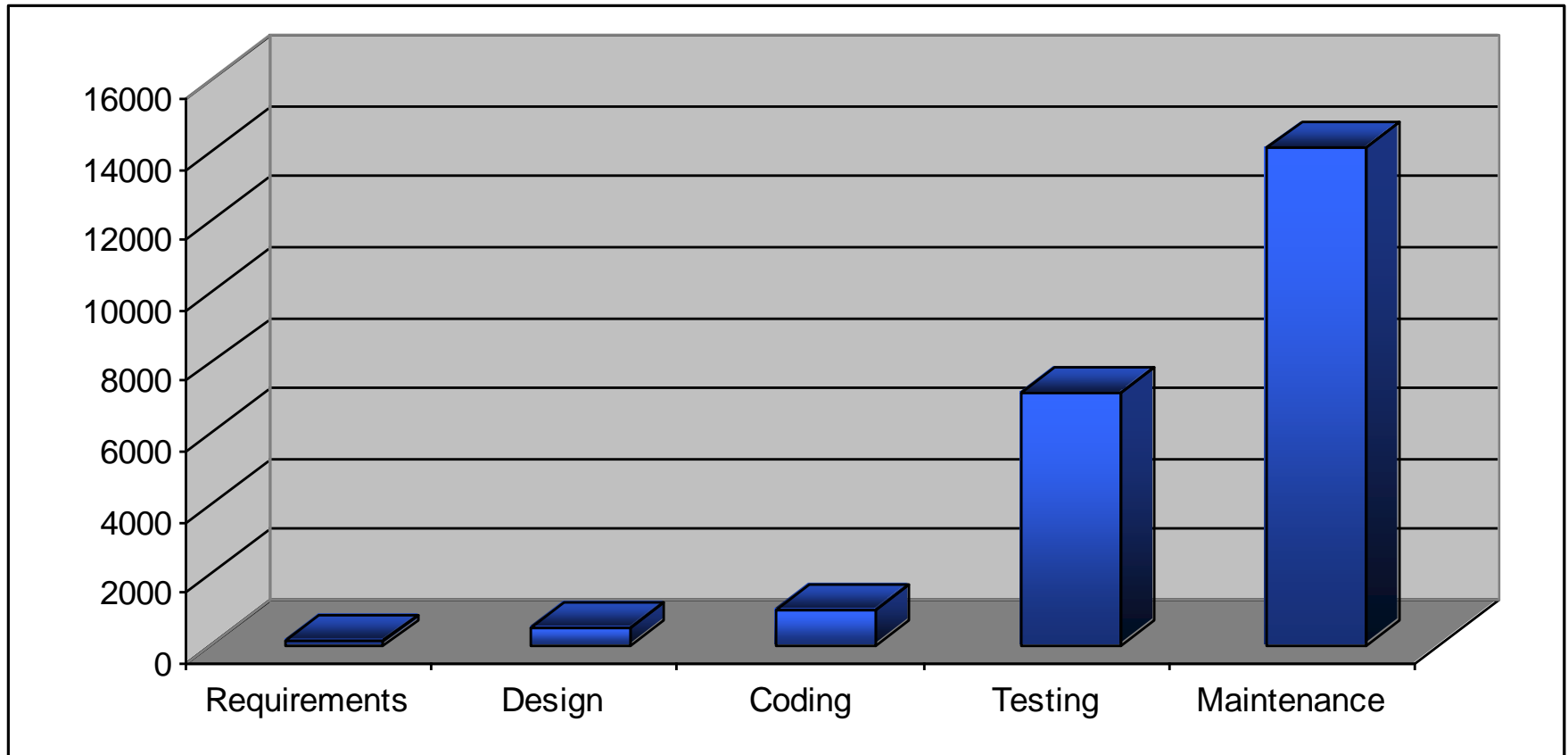
**Chicago
Quality
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Association**

Project and Process Tailoring For Success

Key Learning Objectives

- **Demonstrate how project/process tailoring can decrease cost by aligning process intensity with project risk and complexity**
- **Provide a roadmap for implementing tailoring within your software testing process**
- **Demonstrate how tailoring can leveraged by Testing organizations to streamline the planning and execution of software testing**
- **Illustrate how process auditing and compliance coupled with tailoring can facilitate the overall Quality Management process**

Cost of Correcting Defects

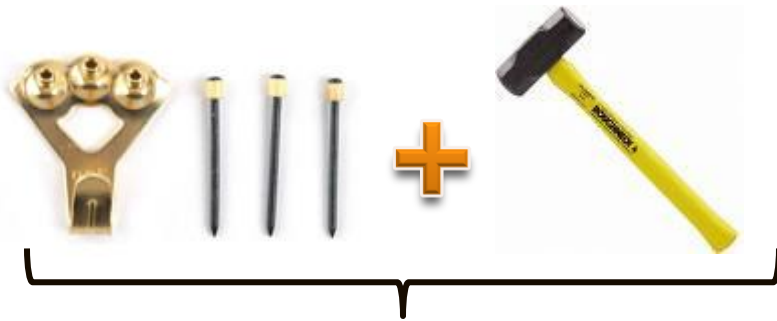


The Situation

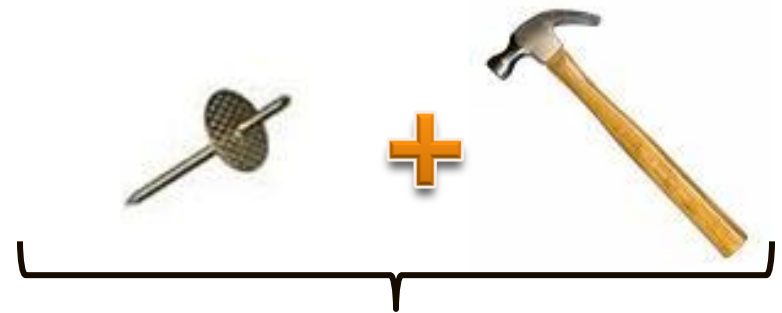
- **Your organization is tasked with accomplishing a process**
 - Common Approach
 - Many organizations employ a “one size fits all” approach for executing tasks
 - Applying the same process, tools, and techniques to every task regardless of size, complexity and risk tolerance
 - Alternative Approach
 - Utilize an approach where “Process Intensity” is proportionate to the size, complexity and risk level of the project

Introducing Project / Process Tailoring

**Tailoring is an approach where
“Process Intensity” is proportionate to the size,
complexity and risk level of the project**



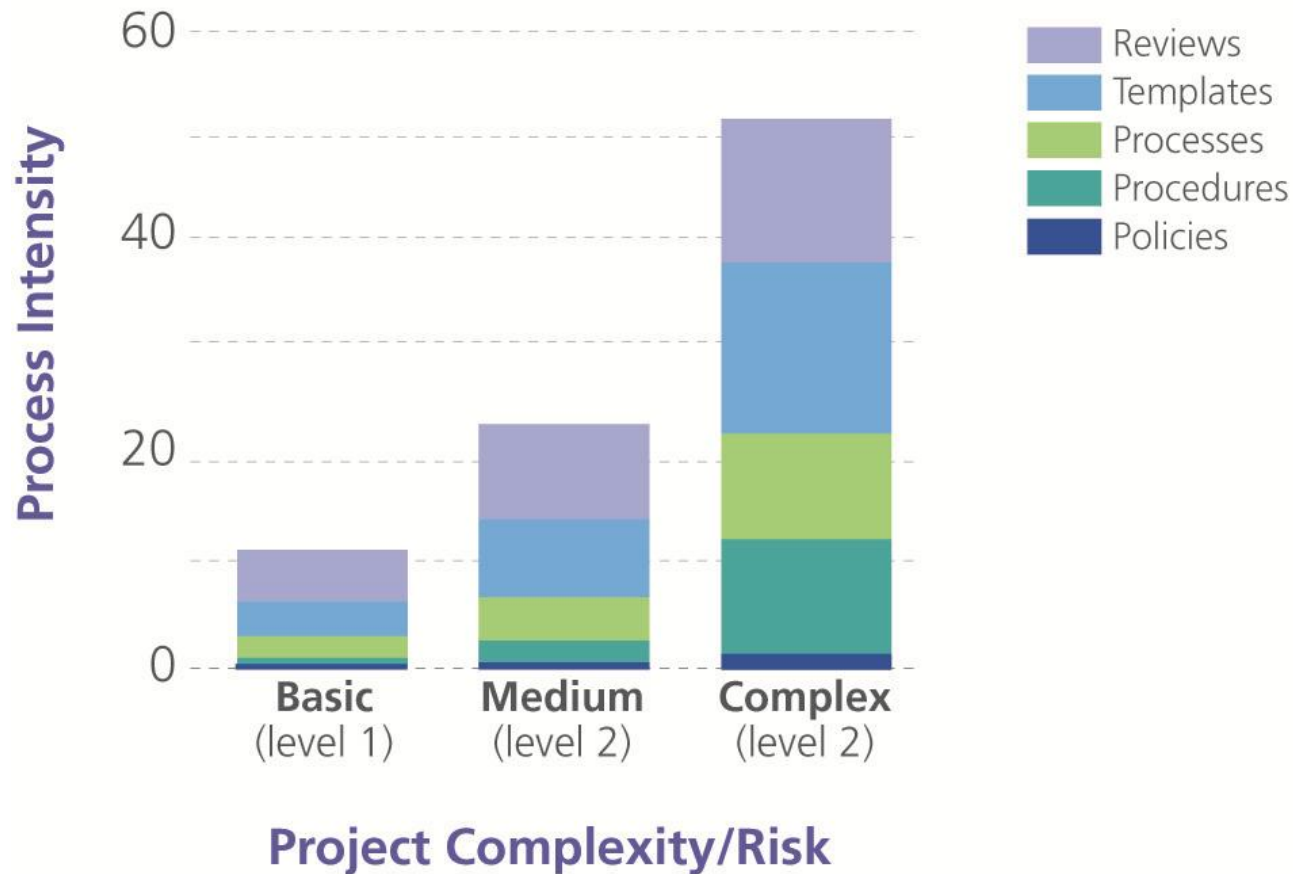
Common Approach



Project Tailoring Approach

* Process Intensity = All of the processes, policies, templates, forms, checkpoints, procedures required to successfully deliver a compliant project.

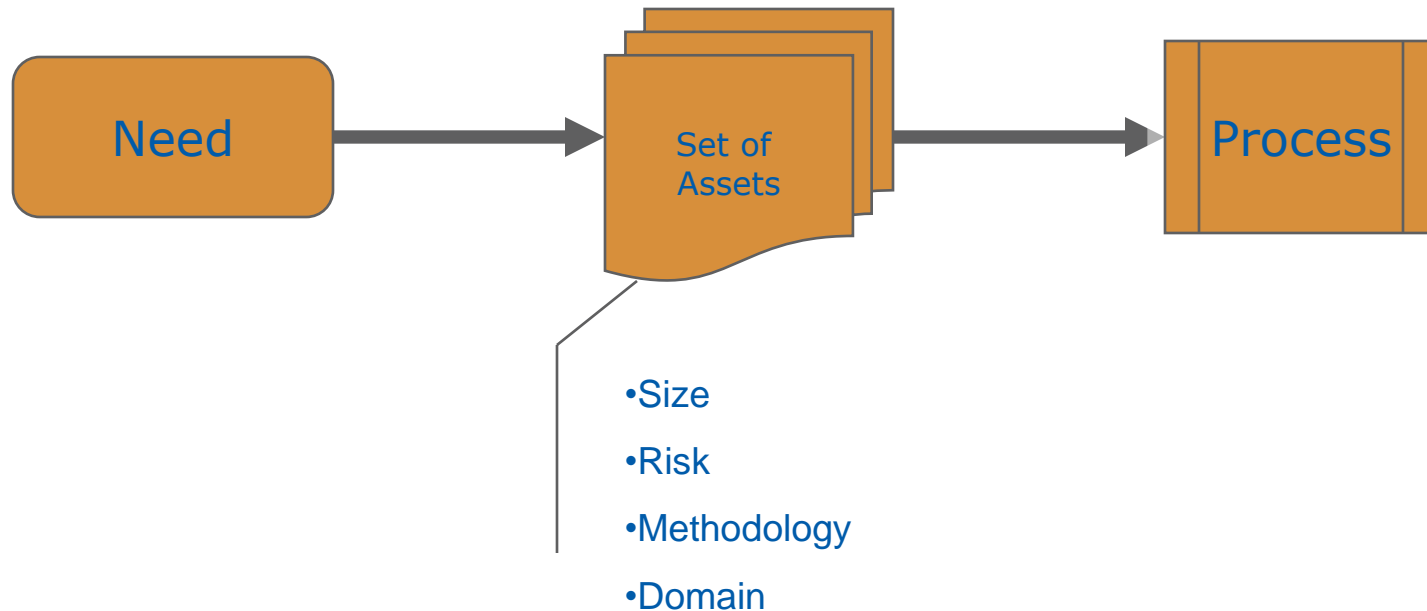
Process Intensity vs. Project Complexity



Testing Assets

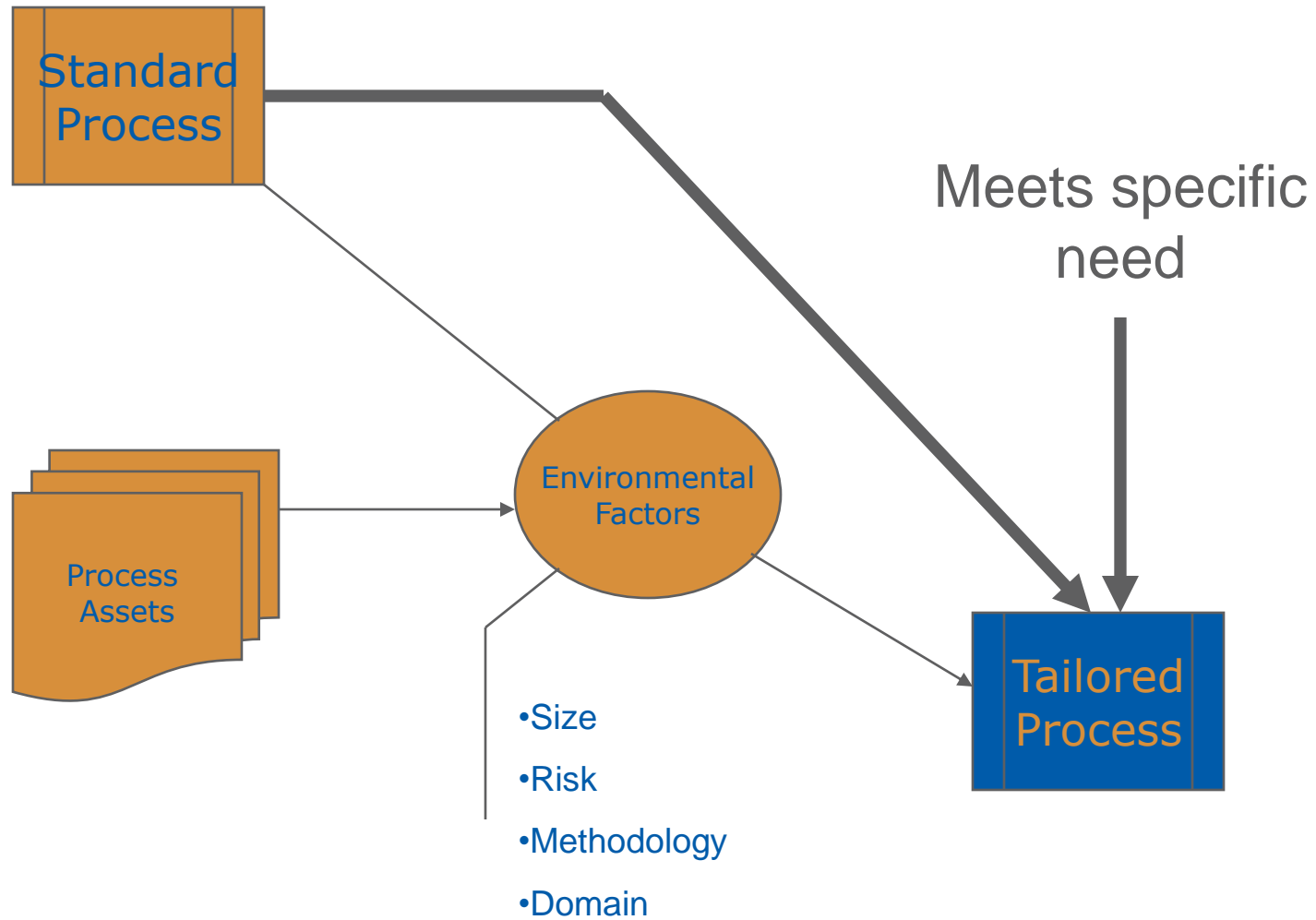


One Size Fits All Approach

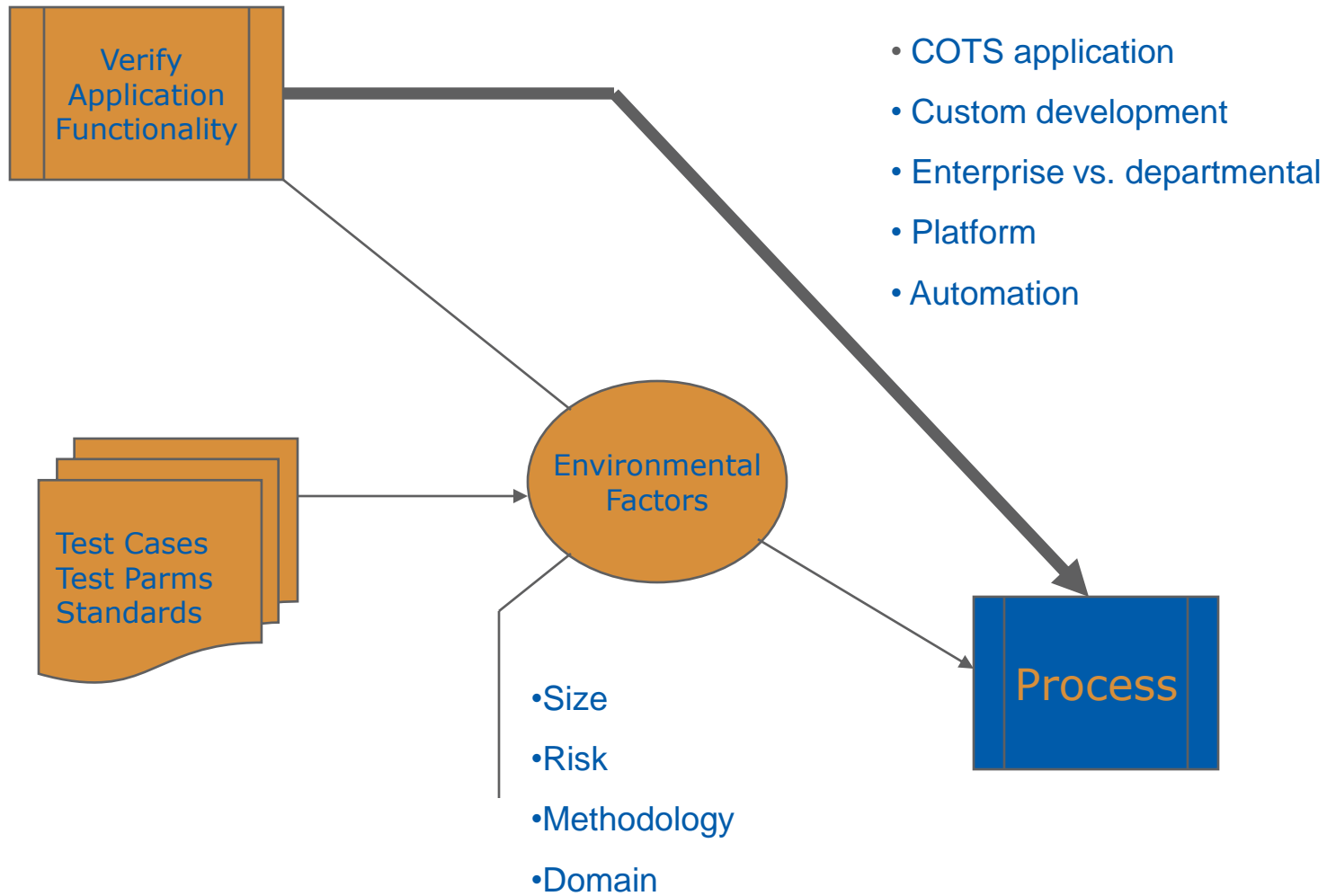


Regardless of common factors that influence complexity
the same process is always followed

Tailoring A Process



Example: Product Verification



Standardization

- **Standardization is the process of developing and agreeing upon technical standards:**
 - A standard is a document that establishes uniform engineering or technical specifications, criteria, methods, processes, or practices.
 - Some standards are mandatory while others are voluntary.
 - Voluntary standards are available if one chooses to use them. Some are de facto standards, meaning a norm or requirement which has an informal but dominant status.
 - Some standards are formal legal requirements.

CMMI And Tailoring

- **A defined process is a managed process that is tailored from the organization's set of standard processes according to the organization's tailoring guidelines.**
- **Organizational guidelines enable project teams, work groups, and organizational functions to appropriately adapt standard processes for their use.**
- **The organization's set of standard processes is described at a general level that may not be directly usable to perform a process.**
- **Tailoring guidelines aid those who establish the defined processes for project or work groups. Tailoring guidelines cover:**
 - selecting a standard process
 - selecting an approved lifecycle model, and
 - tailoring the selected standard process and lifecycle model to fit project or work group needs.
- **Tailoring guidelines describe what can and cannot be modified and identify process components that are candidates for modification**

CMM And Tailoring Cont.

- **Generic Practice 3.1 - Establish a Defined Process Establish and maintain the description of a defined process.**
 - The purpose of this generic practice is to establish and maintain a description of the process that is tailored from the organization's set of standard processes to address the needs of a specific instantiation.
 - The organization should have standard processes that cover the process area, as well as have guidelines for tailoring these standard processes to meet the needs of a project or organizational function.
 - With a defined process, variability in how the processes are performed across the organization is reduced and process assets, data, and learning can be effectively shared.
 - The descriptions of the defined processes provide the basis for planning, performing, and managing the activities, work products, and services associated with the process.

CMM And Tailoring Cont.

- 1. Select from the organization's set of standard processes those processes that cover the process area and best meet the needs of the project or organizational function.**
- 2. Establish the defined process by tailoring the selected processes according to the organization's tailoring guidelines.**
- 3. Ensure that the organization's process objectives are appropriately addressed in the defined process.**
- 4. Document the defined process and the records of the tailoring.**
- 5. Revise the description of the defined process as necessary.**

Why Organizations Need Tailoring

Many large organizations struggle with:

- Gaining visibility into adherence with critical standards and regulations early-on in the project lifecycle instead of at the end
- Process scale vs. rigor, i.e. how can we have process that can handle all types of projects and yet provides an “appropriate” level of control and governance
- How to improve cross-functional teamwork and communication with the ultimate goal of increasing efficiency and project “velocity”

The Problem Wont Go Away

- **Most companies start out with the good intention of creating and standardizing on a single process:**
 - This quest for uniformity and economies-of-scale quickly backfires
 - Always need to create the same 20+ page requirements document
 - Always needs to create the same 20+ page test plan
 - Organizations are buried in process related documents, checklists, templates
 - Everything slows to a sluggish pace

Top Reasons IT Projects Fail

Symptom

Schedule missing critical tasks

Templates, Reviews never completed

Reach “end” and fail compliance

Misalignment and finger-pointing on project team



Root-Cause

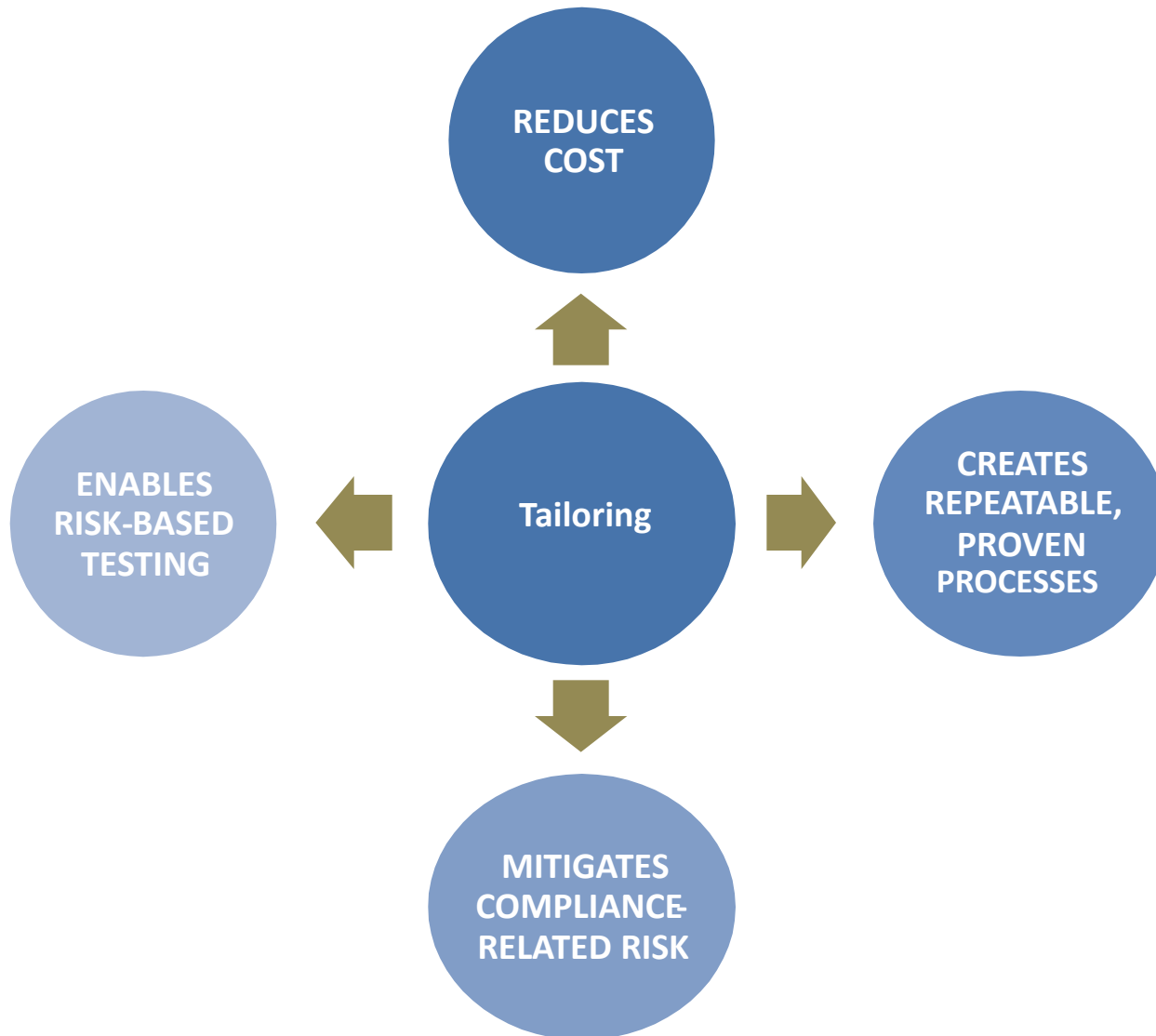
Project Manager not well-versed in necessary methodologies and lacks task-level expertise

Process is too complex, requires too much paperwork, too many meetings, too many sign-offs

QA involved too late in the process and unclear expectations regarding compliance and audit requirements

Inconsistent documentation, inadequate traceability and real-time analysis and reporting

How Tailoring Can Benefit An Organization



Impact of Tailoring on Cost To Deliver

- **By aligning process intensity with project risk and complexity, tailoring can reduce demands for:**
 - Forms
 - Checklists
 - Processes
 - Procedures
 - Templates
- **Can free valuable time for engineering and testing resources that can cause small projects to proceed at a sluggish pace.**
- **On average, tailoring can reduce process intensity by 3X-6X which can equate to more than 20% savings in project costs and other costs associated with standards, compliance and project oversight.**

Improve Repeatability Through Tailoring

- **By creating a “Process Standards Notebook” of all of the processes, policies, templates and forms required**
- **Tailoring helps organizations define a repeatable, reproducible process which eliminates the “reinventing the wheel” phenomenon associated with many projects.**
- **This approach helps organization achieve greater economies-of-scale and deliver projects in a more consistent, on-time manner.**

Mitigate Compliance-Related Risk

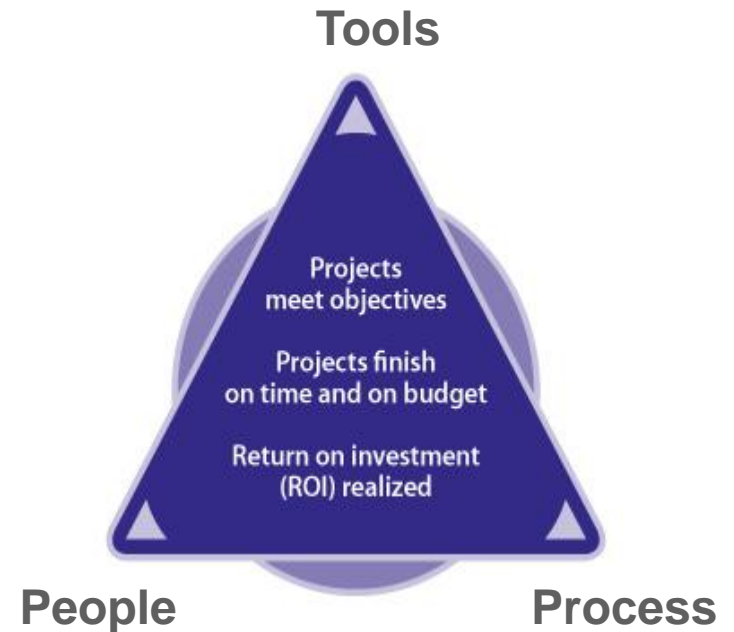
- **Tailoring enables organizations to reduce risk associated with compliance by:**
 - Pre-populating schedules with compliance-related processes, templates and policies based on knowledge of the compliance/standards teams, not relying solely on the project lead
 - Enabling the project team to conduct pre-audit run-throughs where gaps in compliance can be highlighted and addressed prior to critical and visible audits or checkpoint/Authorization-to-Proceed (ATP) meetings
 - Providing a Compliance Checklist that enables the team to clearly gauge progress towards compliance using a Red/Yellow/Green model

Enable Risk-Based Testing

- **Tailoring enables implementation of effective Risk-Based Testing strategies.**
- **Based on the initial assessment of the testing coverage, constraints, and risks, tailoring solutions facilitate delivery of high quality applications within compressed time frames at lower costs.**
- **Risk-Based Testing can mitigate testing risks in the following ways:**
 - Validate that requirements align with business objectives
 - Assigns risk to each requirement based on the probability of major defects and the business impact if defect is detected
 - Defines the testing scope and strategy to concentrate on high-risk and high priority requirements

Project Tailoring: Best Practice Approach

1. Assess Cultural Readiness
2. Asset Amnesty and Discovery Process
3. Process and Methodology Selection
4. Asset Mapping
5. Establish common language for governance, compliance and audit
6. Execution (Pilot, Train, Deploy)
7. Assessment



Assess Cultural Readiness

- **Gain understanding of organizations readiness to change**
- **Critical questions:**
 - Is the initiative supported by management?
 - Does your organization have the critical skills needed to implement the change?
 - How important is it for your organization to achieve and demonstrate compliance with industry standards and regulations?
 - What is the cost of doing nothing?

Asset Amnesty and Discovery

- **Project Tailoring** requires your organization to have an understanding of projects, their relative risk and complexity, and the current library of processes, policies, templates, and checklists commonly referred to as “assets”
- **Process assets** exist everywhere in the organization, you will need to discover and evaluate the all these assets with the goal of creating a comprehensive Asset library
- This is not an easy task and requires detailed knowledge of all corporate (or departmental) processes and critical regulations
- **Duplication of assets** should be avoided but there may be “derivative assets”
 - Detailed Test Plan for large projects
 - Shorter more concise Test Plan for small lower risk projects

Establishing a Baseline

- **Assess the ratio of large project to small project intensity**
- **This ratio is a good indicator of how well you are implementing tailoring**

$$\text{Ratio} = \frac{\text{Sum of all assets required for most complex projects}}{\text{Sum of all assets required for most basic project}}$$

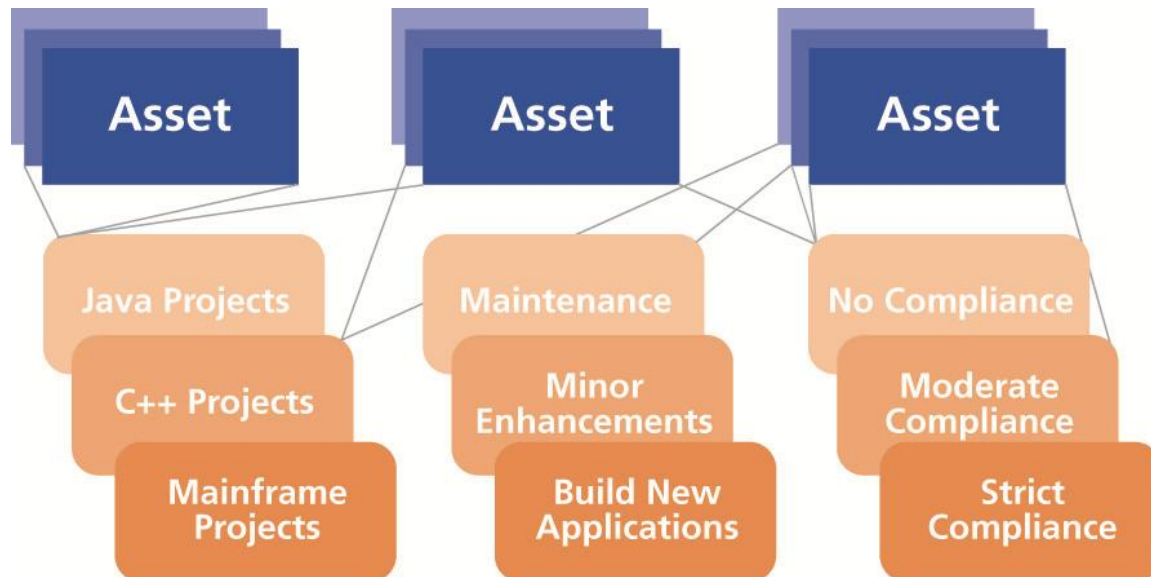
- **If project levels are indistinguishable, the ratio will be below 4.0**

Process and Methodology Selection

- **Process and methodology selection often occurs in parallel with discovery**
- **Questions to consider:**
 - Are you going to follow a specific methodology?
 - Are there specific corporate, industry or regulatory requirements?
 - What specific testing strategies will be used?
 - White box
 - Black box
 - Unit testing
 - Integration testing
 - Usability testing
 - Performance testing

Asset Mapping

- **Purpose is to map assets to various project types and methodologies**
 - Example: which project planning template will be used for a Agile project vs a Waterfall project?
 - Example: which testing plan will be used for a .Net project
 - This exercise will generally result in a many-to-many relationship



Common Language for Governance and Audit

- **Key questions to consider:**
 - What are the 6, 10, 15 or more questions to be used to determine project complexity?
 - How will each response be weighted?
 - How will audits/checkpoints be conducted?
 - What are the key audit questions to be asked in each phase (planning, feasibility, design, etc)?
 - What are the criteria for successfully passing a audit checkpoint?
 - How should the intensity of the audit (number of questions) vary with the project complexity?
- **Audit questions mapped to project complexity and phase**

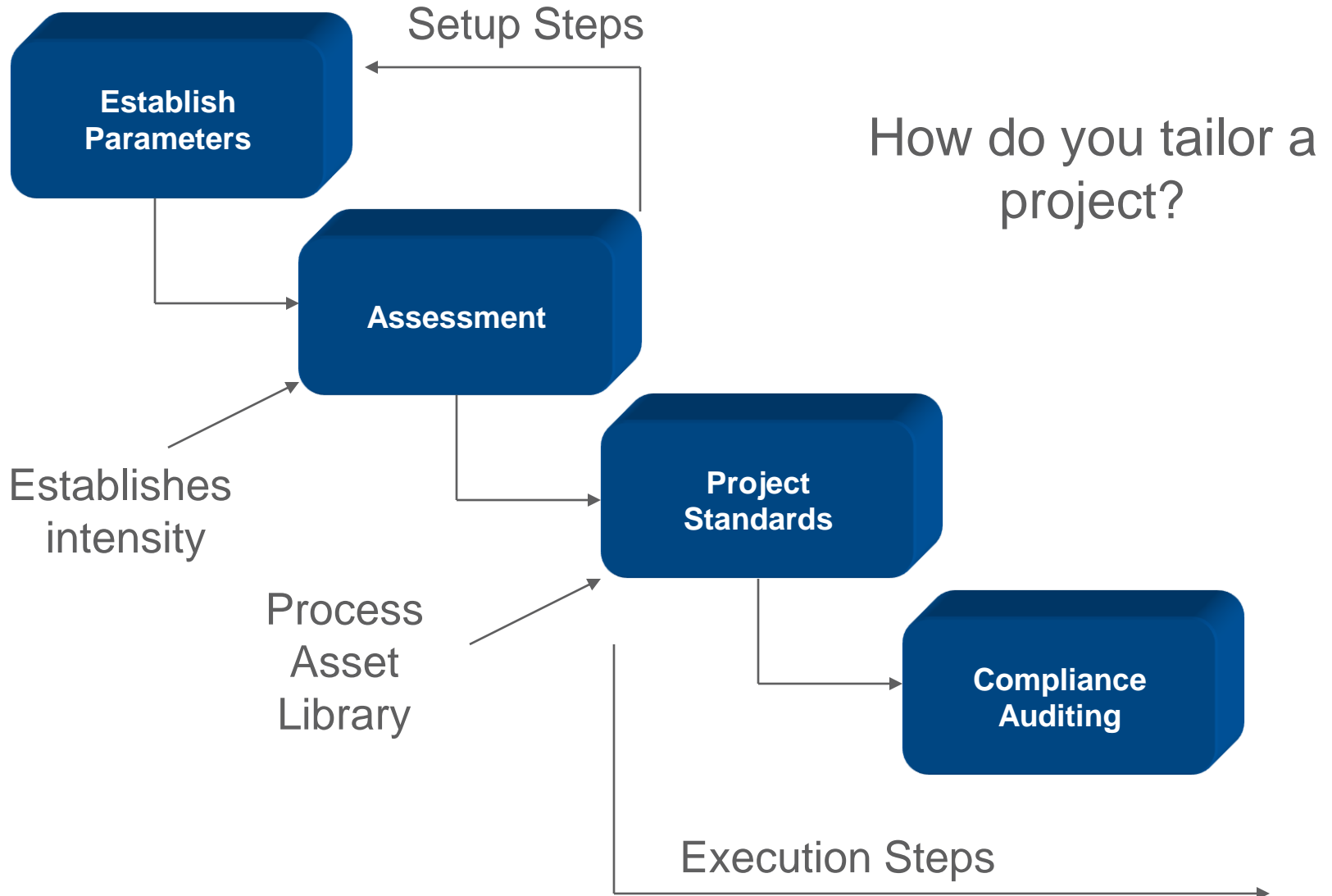
Execution

- **Putting Project Tailoring into action**
 - First step is to perform a relatively small, tightly scoped pilot
 - Assess Project Complexity
 - Determined assets and governance/audit criteria required
 - Results in an accurate “tailored” view of the project
 - Impact to risk management
- **Over time many organizations will encapsulate these steps into an easy-to-use application to ensure repeatability**

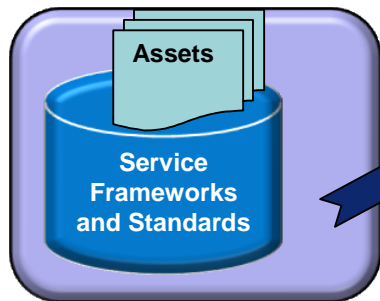
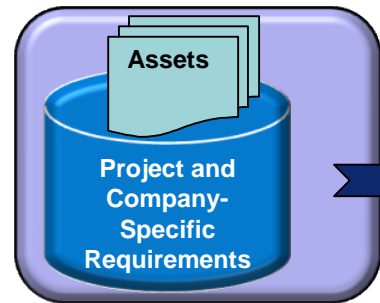
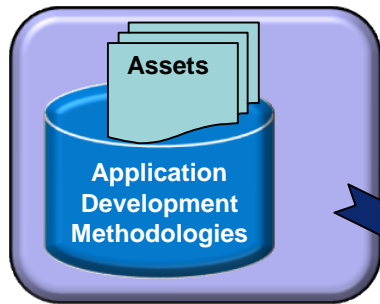
Assessment

- **Perform an assessment of the tailoring process to determine how the organization is executing**
- **After 6 – 12 months recalculate the intensity ratio**
 - Should be considerably higher
 - Ideally 5.0 or higher indicating a differentiation in effort between simplest and more complex projects
- **Based on the analysis the organizations should:**
 - Identify new assets to be created
 - Modify existing assets to better meet needs
 - Improve training for all involved in the process
 - Explore automation to reduce manual effort

Tailoring Steps



Assessment



Project Management Profile Management Table Maintenance Roll up Report System Administration

0 1 2 3 4 5

Project name: ERP Application - Update Mfg

Complexity Survey Assessment

The complexity assessment determines the specific project level, answer all questions of the survey. You may apply the adjustment for specific circumstances to increase the project level (at the end of survey).

	Survey Question	Survey Response	Weight
1	Total Project or Program Budget?	\$100K - \$1M	0
2	Total customer budget for this project, which is not part of the PMO project budget?	\$3M - \$5M	1
3	Current PMO FTE assigned to the project?	Greater Than 50	5
4	Current customer FTE assigned to the project?	Greater Than 50	3
5	What is the FTE cost percentage of the project's total cost?	Greater Than 75%	2
6	What is the customer's priority and business sponsorship of this project?	9 - 10 High	5

Add points for special circumstances(Max 5): 0 Total possible score: 65

Calculated score: 54 Level: 5 Save

Assets = process, policy, form, checklist, template

Automating Tailoring

Key Outputs

Schedule

**Project Asset
Library**

**Standard
Notebook**

**Process
Standards
Variance**



Key Benefits

§ Reduced project management costs

§ Reduced documentation efforts

§ Ensure compliance from start-to-finish

§ Satisfy standards requirements

§ Improved teamwork



Bottom Line*

§ 20% reduction in effort for project management

§ 5% reduced effort by development staff

§ 20% reduction in audit and compliance review by the quality staff

Project Schedule Generation

- Tools can be used to build the schedule including all tasks deliverables and milestones required by the project to be standards compliant
- The project schedule then can be loaded into MS Project for tracking
- The same deliverables and tasks are monitored for completion by the Process Compliance Reports and audits

BENEFITS

1. Simplifies documentation effort for Project Manager
2. Improves accuracy of schedule and credibility
3. Ensures compliance from beginning-to-end

Standards Notebook

- **Can build a Project Standards Notebook for each project based on a risk assessment questionnaire which assigns a project size**
- **For each relevant methodology assets are pulled from the Process Asset Library (PAL) Process Assets including:**
 - Policies
 - Processes & Procedures
 - Guidelines & Templates
 - Project Execution Checklists
 - Compliance Audit Checklists
 - Tools such as estimation, requirement traceability mapping, test logs

BENEFITS

1. Minimizes excess documentation for smaller projects
2. Ensures compliance, risk management for larger projects
3. Reduces risk of missing critical element late in the project

Process Compliance Checklist

- Tracks compliance to all applicable standards in the PAL
- Provides a weighted percentage of compliance based on task importance
- Provides a Compliance (Red – Yellow – Green) indicator for quick compliance review
- Allows Process Compliance Reporting
- Tracks non-compliance and provides deviation reports that support process improvement

BENEFITS

1. Improves team alignment around compliance issues
2. Eliminates “subjectivity” associates with compliance
3. Reduces administrative effort associates with compliance reporting

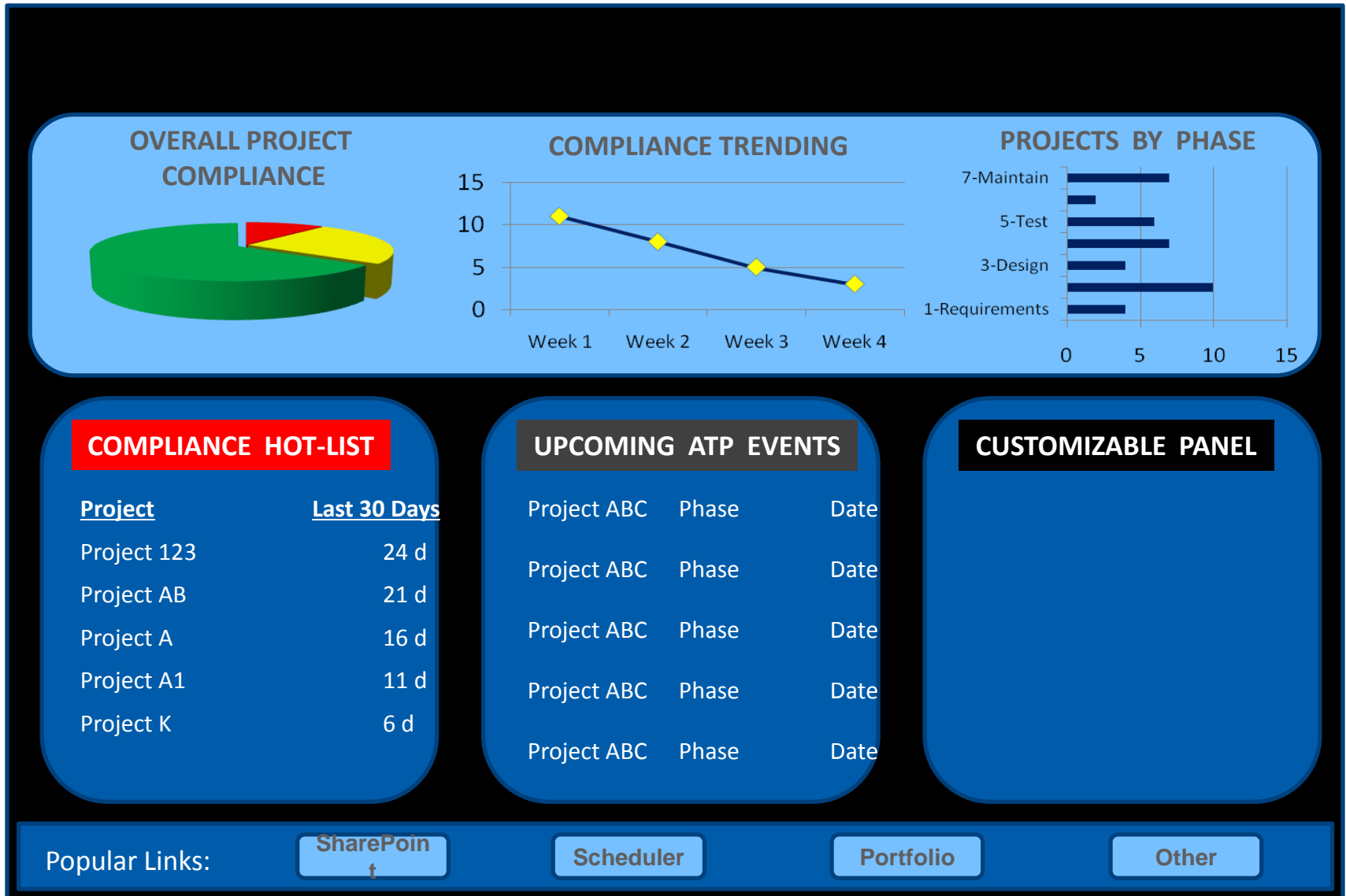
Process Standards Variance Reporting

- Tracking and reporting on all process variance requests by project
- Process Variances are reported to the account quality manager for review and approval
- Process Variances are reported for approval and review for possible process improvement opportunities

BENEFITS

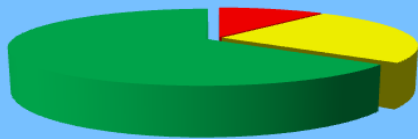
1. Mitigates risk associated with process variation
2. Speeds resolution of process variance
3. Improves teamwork and focus on important issues

Sample Dashboard

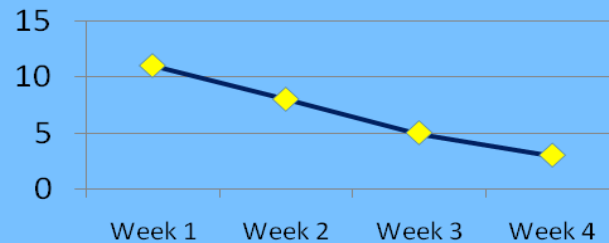


Sample Dashboard

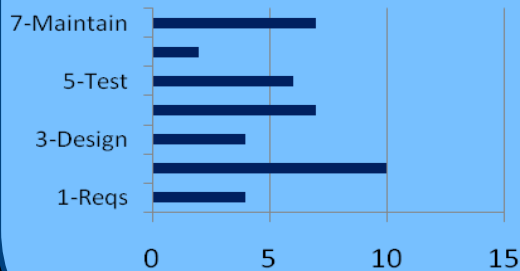
OVERALL PROJECT COMPLIANCE



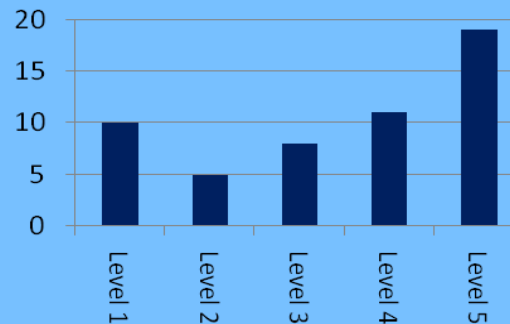
COMPLIANCE TRENDING



PROJECTS BY PHASE



PROJECTS BY RISK LEVEL



COMPLIANCE HOT-LIST

Project	Last 30 Days
Project 123	24 d
Project AB	21 d
Project A	16 d
Project A1	11 d
Project K	6 d

UPCOMING ATP EVENTS

Project ABC	Phase	Date
Project ABC	Phase	Date
Project ABC	Phase	Date
Project ABC	Phase	Date

Popular Links:

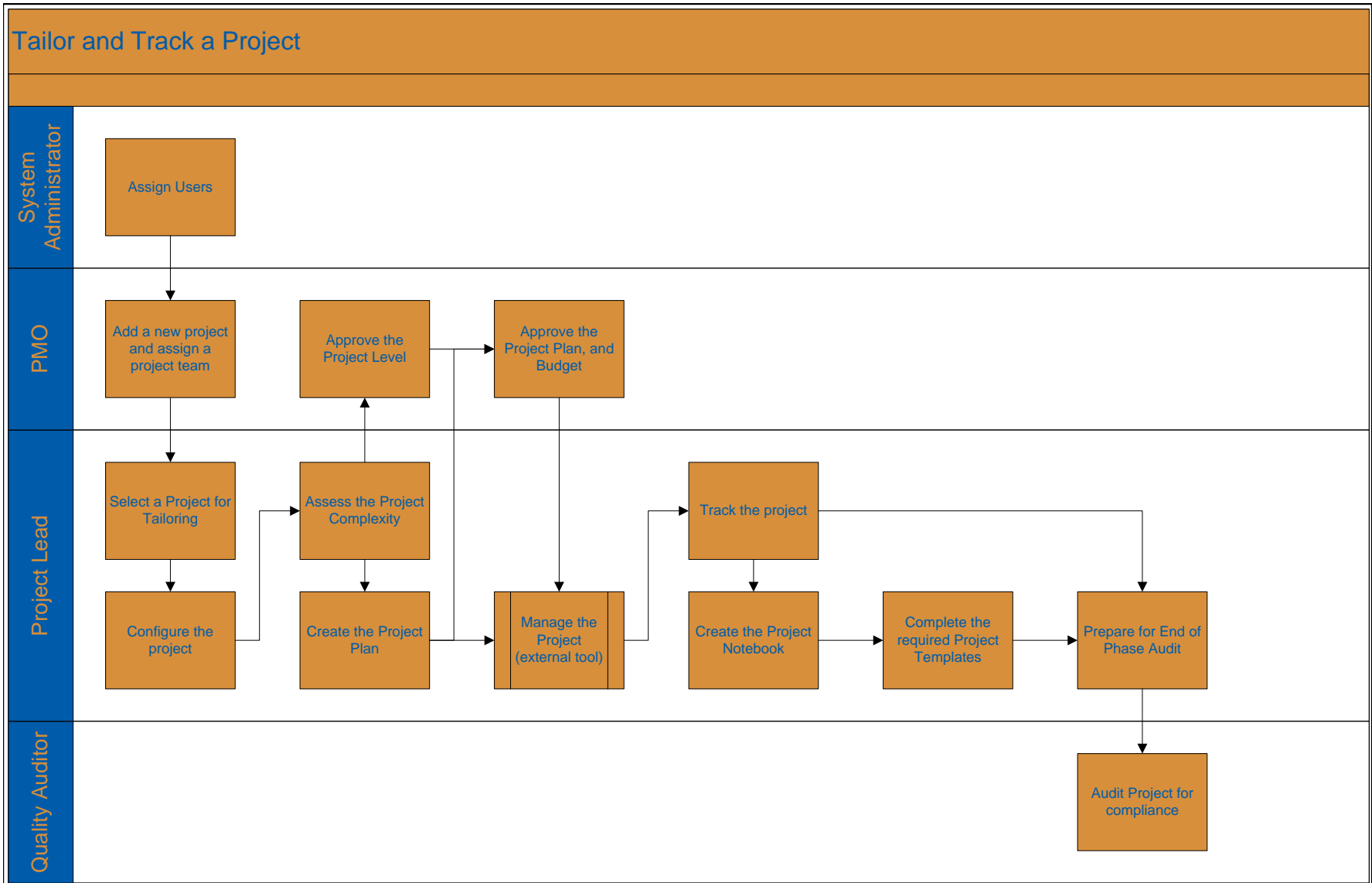
[SharePoint](#)

[Scheduler](#)

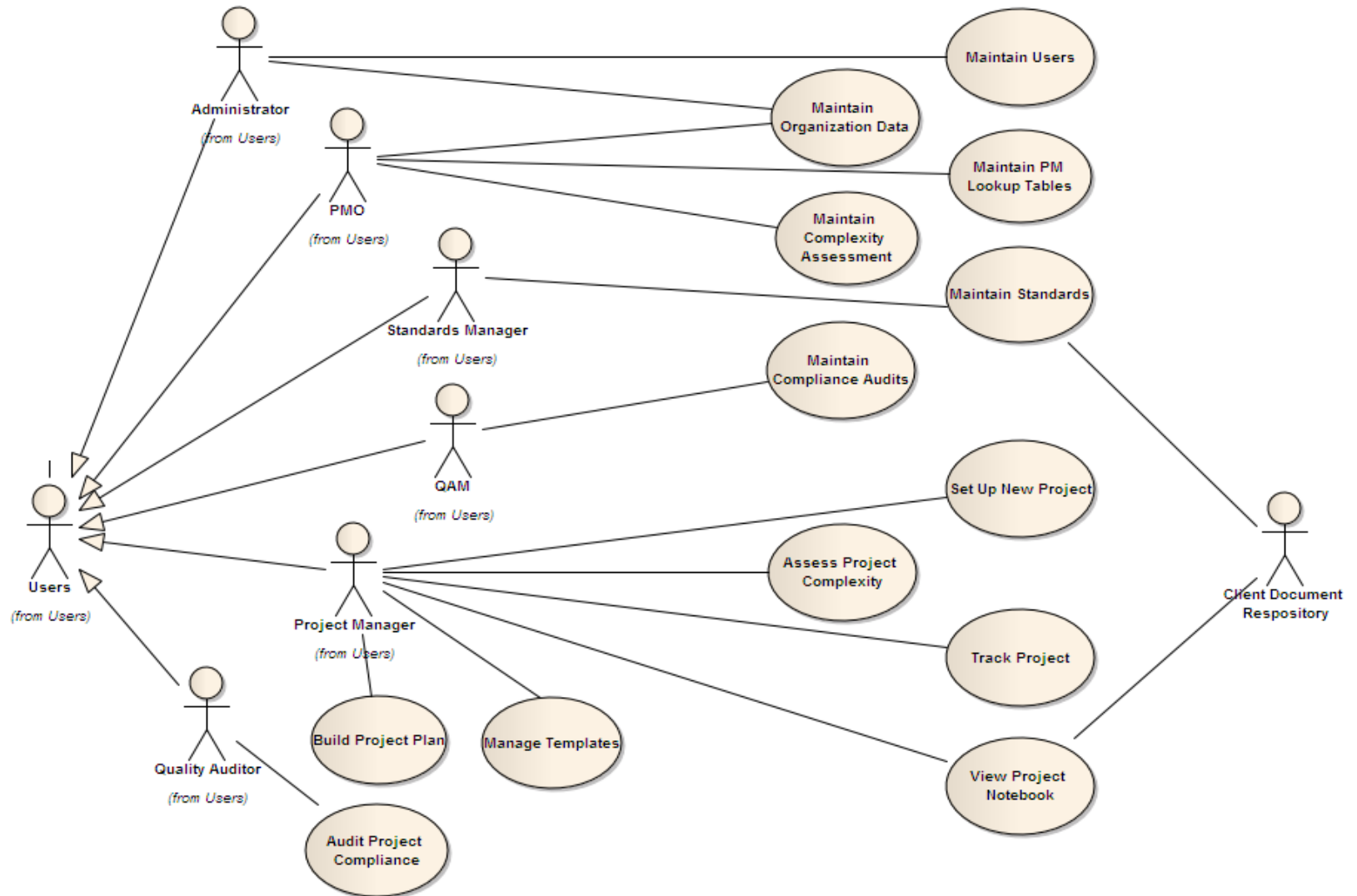
[Portfolio](#)

[Other](#)

How Tailoring Impacts The Organization



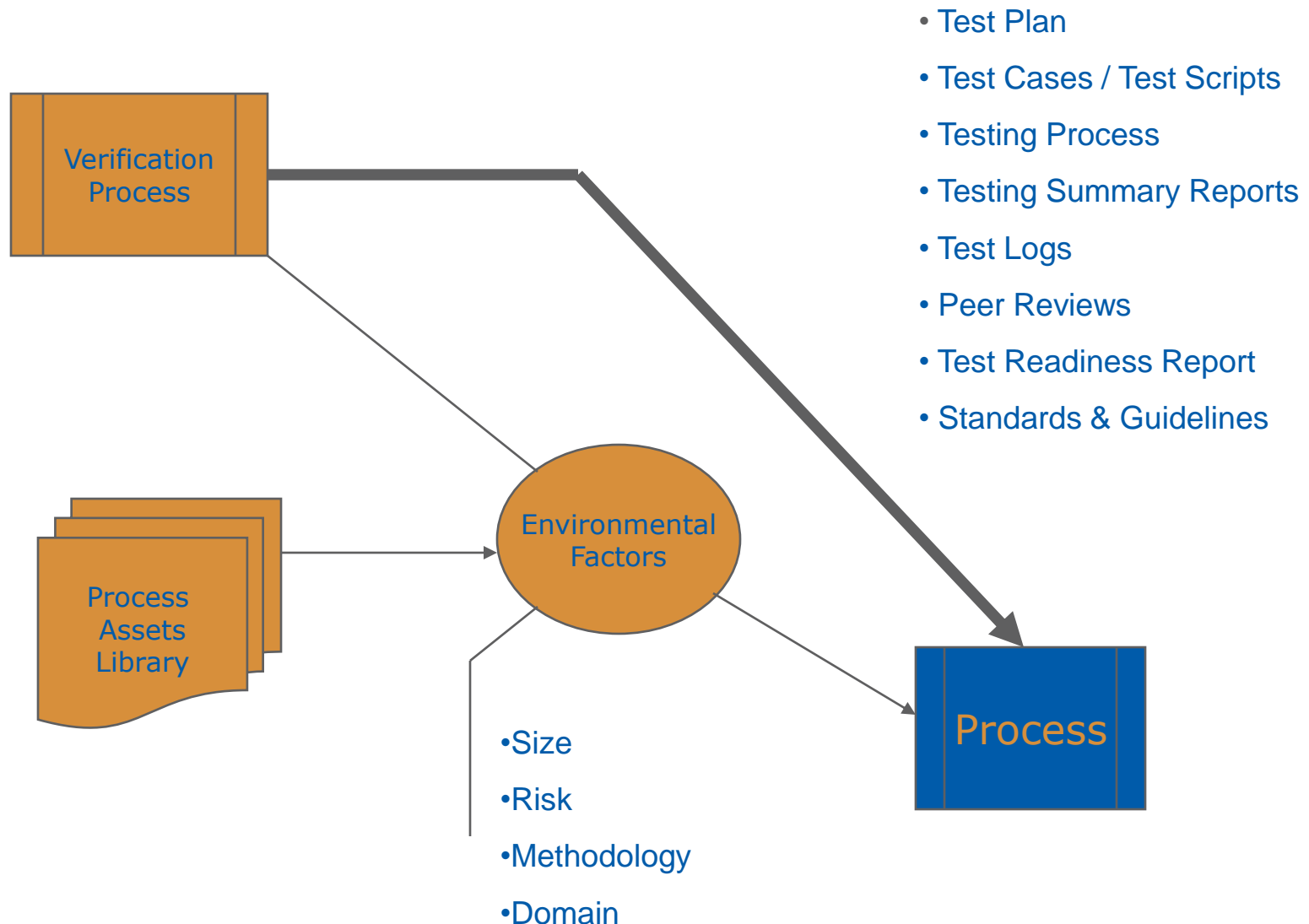
Process Interactions



Applying Tailoring To Testing

- What factors influence your approach?
- What testing strategies does your organization use?
- What platforms do you test on?
- How does the platform that impact testing approach?
- What development methodologies are used?
- Do you test custom applications, COTS, both?
- Do you use automation tools?
- Do you have standard test cases and test scenarios?
- What testing processes exist in your organization?
- How do you assess the scope of a testing project?
- How do you establish testing environments?
- What defect logging is required based on project type?
- What standards exist in your organization?
- How do you trace compliance within your projects?

Example: Application Testing Project



Wrap-Up

- **Tailoring is powerful**

- Ensures complex and risky projects have the strong rigor and governance
- Ensures smaller projects are not over-burdened

- **Tailoring is compelling**

- Can reduce project management and compliance-related efforts by 20%
- Often pays for itself in the first 12 months

- **Tailoring is collaborative**

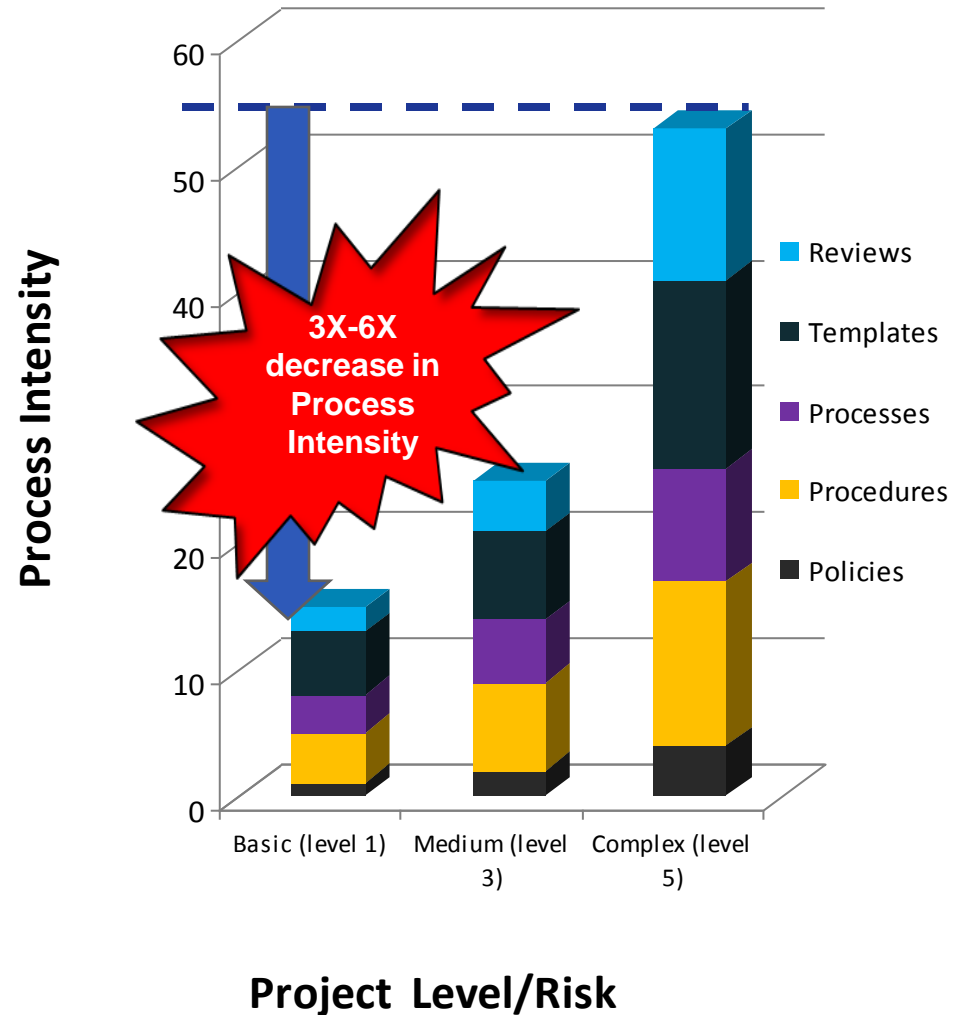
- Eliminates the “interrogation-by-project schedule” feeling
- Provides a collaborative, supportive environment for QA, Development, PM, etc

- **Tailoring is Unique**

- It's not scheduling. It's not reporting. It is about driving efficiency

Project Tailoring Optimizes Project Intensity

- Fast-track smaller projects
- Eliminate gridlock
- Mitigate risk of larger projects
- Reduce resource time
- “Appropriate” Controls and Scrutiny





Thank You