



# Enterprise Test Metrics

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# Who's Jamie Campbell...

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## By Education

- BSc Civil Engineering, Queen's University
- Post Graduate IT Certificate, Sheridan College
- Certified PMP Practitioner

## By Experience

- Management Consultant – Strategy, Accenture
- Head of North American TCoE (700 resources), Accenture
- Head of Operations, Global TCoE (8,000 resources), Accenture
- Director of Strategy & Sourcing, Ontario Teachers Pension Plan
- Entrepreneur, stay tuned...

## Testing Experience

- TCOE – architected & mobilized over 45 TCoE organizations globally
- Test Strategy & Delivery
- Test Optimization – Automation, RBT, Statistical Testing
- Test Metrics, Cost Benefit Analysis & ROI



# Today's Agenda

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## Introduction

**Understanding Metrics**

**Setting the Journey**



# Metrics - What's Your Definition?

# Test Case/ Cycle

# of Critical Defects

Pass/ Fail Rates

Defect Aging

Productivity

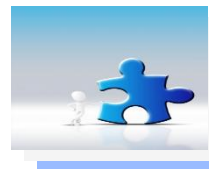
ROI

Schedule Variance

Defect Removal Effectiveness

Cost Variance

**Do you know all of these metrics?  
Are they all testing metrics?**



# The Challenge of Metrics

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**There is no one right answer...**

- Metrics can represent a point of time
- Metrics can represent change over time
- Metrics can be complicated
- Metrics can be simple
- Metrics help to make decisions today
- Metrics help to make decisions for tomorrow
- Metrics are critical to some, while meaningless to others

***The real challenge of metrics is knowing what & how you are answering a question, and for whom.***



# Scope of Presentation

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To meet these challenges and understand what is expected of you as testing professionals, we will look at the following areas;

- Understanding stakeholder requirements
- Creating a unified strategy
- Answering the right questions
- Knowing how to communicate the results
- Selecting Metrics
- Automating Metrics

*What, only two bullets on metrics? I thought he was going to talk about metrics??? This guy is shady...*



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# Step 1. Who are the Stakeholders?

Quite often, testing professionals forget and/ or don't know who their stakeholders really are – it's relevant to all career levels.

**Test Analysts**  
(# of assigned defects)

**Test Leads**  
(# of cases/ cycle)

**Test Managers**  
(Defect Aging)



**Project Managers**  
(schedule variance)

**Business Owners**  
(critical defects)

**CIO**  
(ROI, Cost of Testing)

*Metrics at this level are nothing more than an aggregation of your day-to-day test metrics*

***Do you know how to report metrics to these individuals?  
What they want? What you want? You need to find out.***



# Step 2. Analyze Stakeholder Expectations

## The Language of Testers:

- Defect Aging/ Closure
- Script Execution & Pass Rates
- Fix Backlog Trend



## The Language of Business:

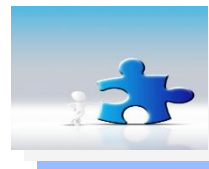
- Bottom Line Savings
- Resource Utilization
- Speed to Market
- SPI/ CPI



Where is Your Focus?



***Your focus should be on both. Testers are the 'Eyes and Ears' for more than just testing.***



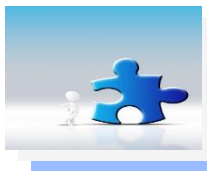
# Step 3. Determining the Questions

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**Typically, most organizations have a set of common ‘industry best practices’ they use for test metrics. Are they really the best for your organization? Consider the following:**

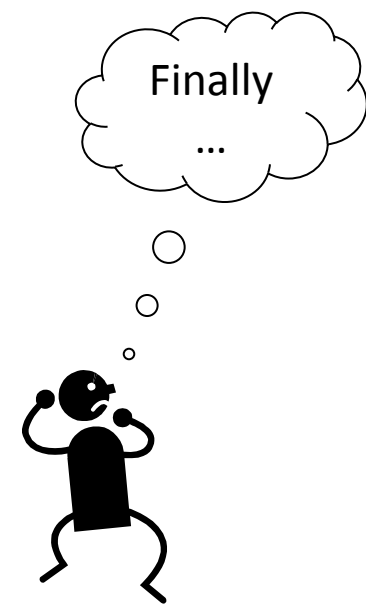
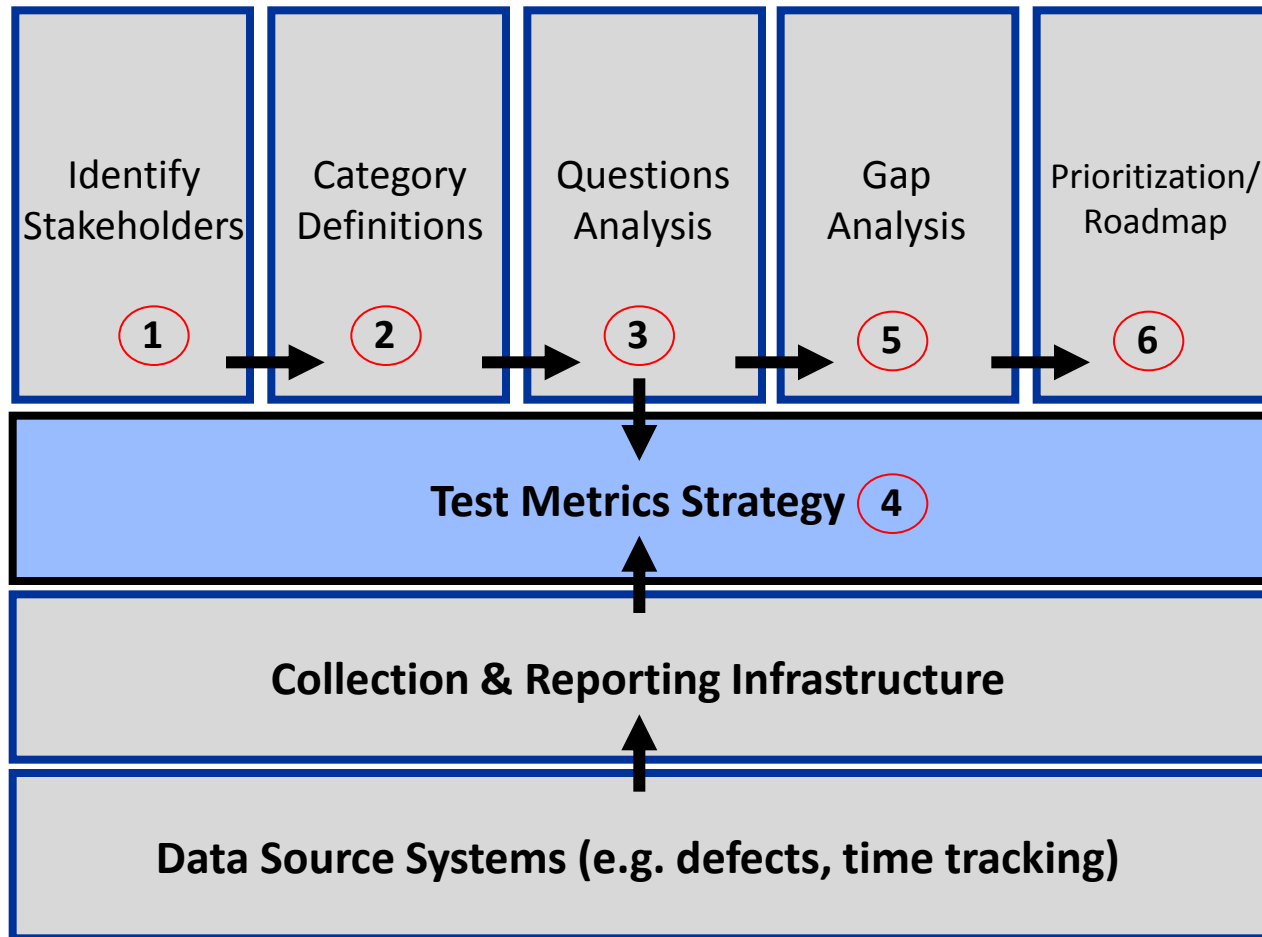
- It is estimated that over 65% of an organization’s standard test metrics are never reviewed or analyzed
- Only 12% of Fortune 500 CIOs, believe their testing organizations are providing them with relevant information
- On average, it takes 3 – 4 hours of manual effort to prepare a report that is reviewed in 5 minutes or less

***You first need to find out what your stakeholders want to know, then you can try to answer the questions***



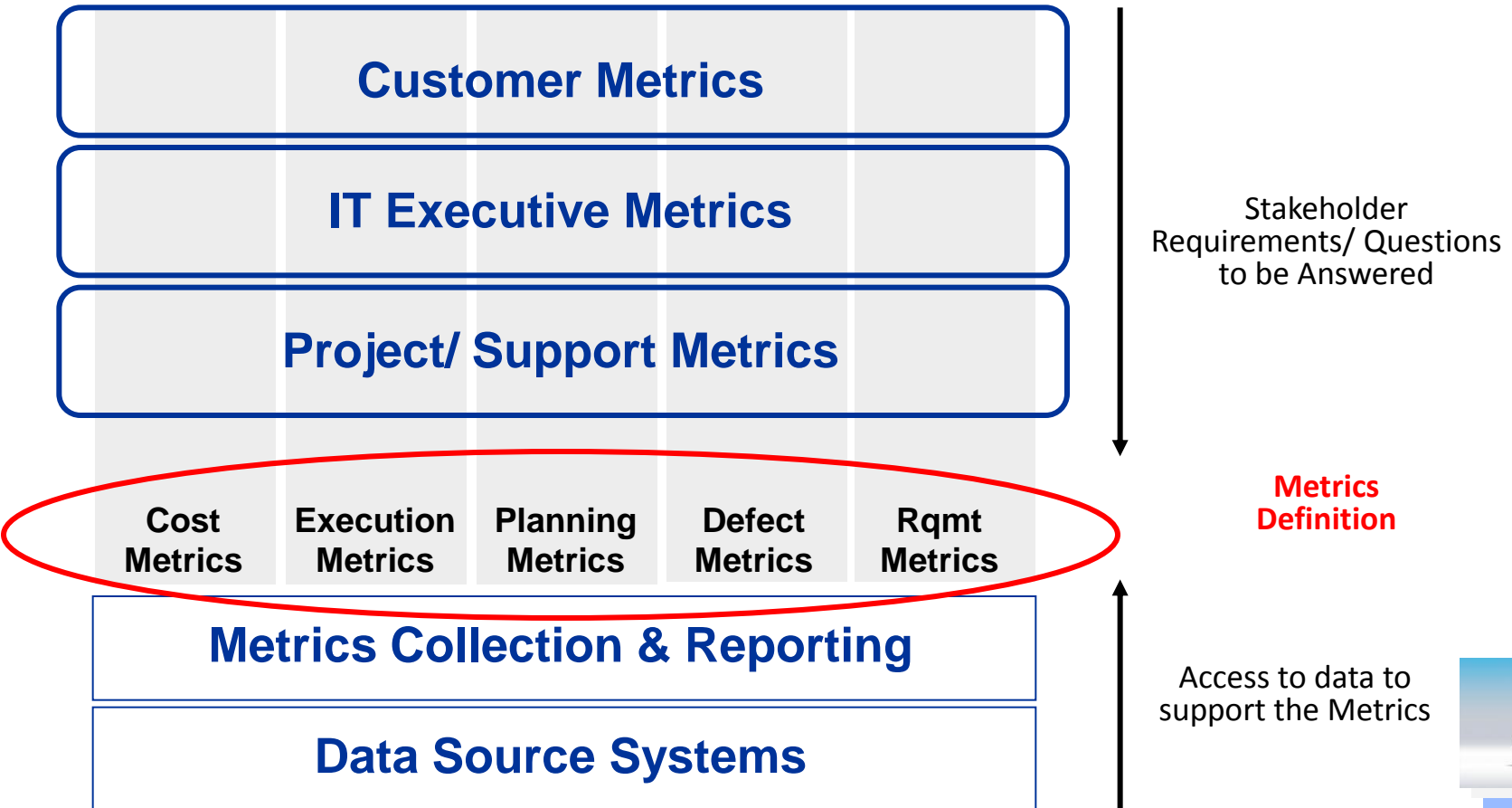
# Step 4. Test Metrics Identification

As Test Professionals it is important to implement these steps first – you are now ready to determine the metrics.



# Step 4 ½ . Identifying Test Metrics

It is important to pause on Step 4, as this is an important step. Test Professionals should select their metrics based on a Top-Down and Bottom-Up approach.



# Step 4 <sup>3</sup>/<sub>4</sub>. Test Metrics

This is a presentation after all on metrics. So here are your metrics...

## Commonly Defined Enterprise Test Metrics

### Test Executive Metrics:

- Historical Trending
- Cost
- Efficiency
- Productivity
- Status
- Defect Density
- Defect Containment
- Post Production Defects
- Test Coverage
- Requirements Traceability
- Root Cause
- Automation Penetration
- Defect Removal Effectiveness
- Release/Project Execution Progress
- Defect Aging

### Test Operational Metrics:

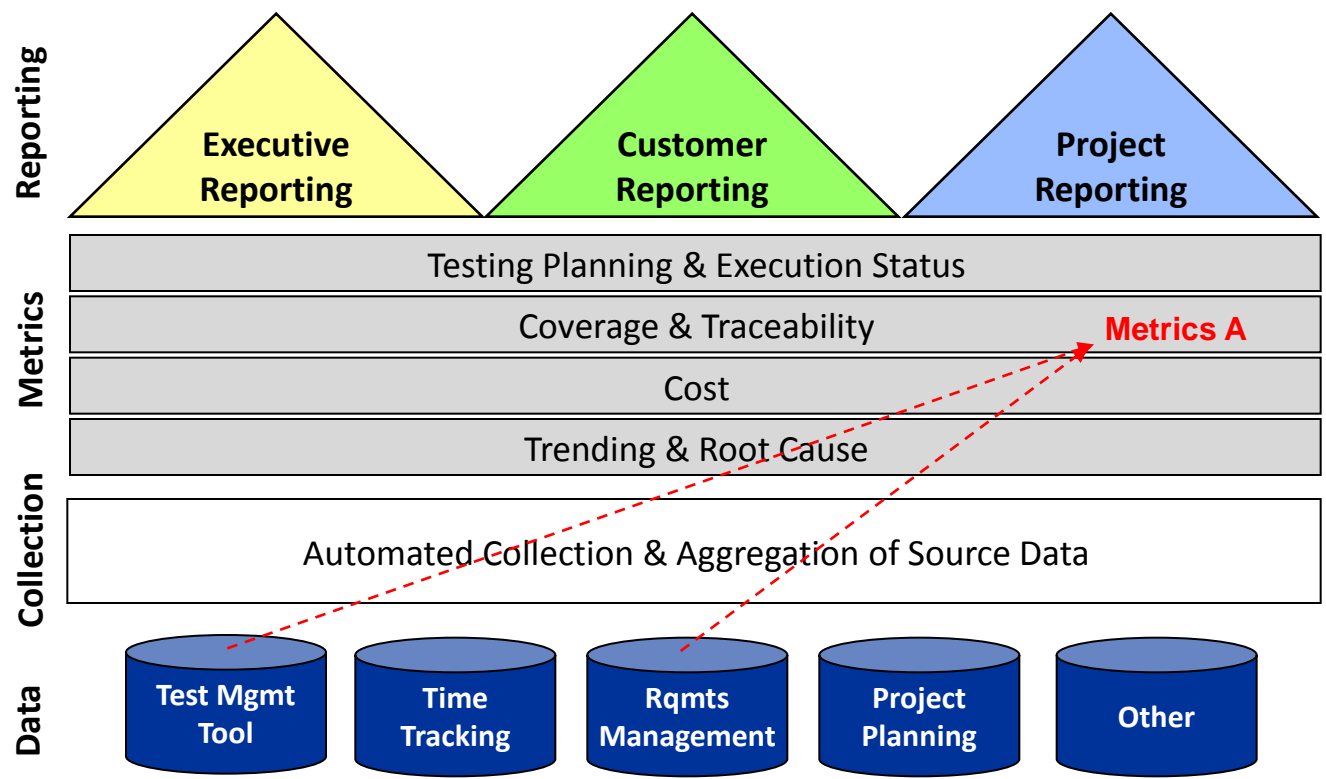
- Test Coverage
- Requirement Status
- Test Scripting Status
- Test Plan Status
- Test Script Review
- Test Execution Status
- Pass/Fail Rates
- Tests Blocked by Defects
- Rejected/Cancelled Defects
- Overall Defect Status
- Re-opened Defects
- Defect by Severity
- Post Production Defect Status
- Defect Injection/Closure Rates
- Root Cause

***You can find metrics anywhere but you cannot find the questions & stakeholder requirements so easily***



# Step 5. Gap Analysis

Gaps? I figured out the metrics so why am I not done? Reality check, finding/ collecting the data is often the largest hurdle.



For each metric, you must identify the source systems/ data required to calculate the metric

*To have a complete view of testing in the organization, you must define an enterprise-wide strategy*

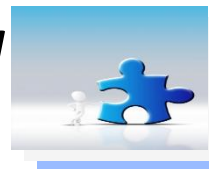


# Step 6. Roadmap & Rollout

**Now you are ready to launch. Consider the following success factors when setting up Test Metrics:**

- Understand who your stakeholders are
- Determine what questions need to be answered, and to whom
- Follow communication channels
- Continually assess and evaluate the effectiveness of the metric
- Evaluate the Cost-Benefit of metrics (e.g. 8hrs for a 1min report)
- COMMUNICATE, COMMUNICATE, COMMUNICATE

***This overall approach looks big, but in reality it can be applied to a project, program or enterprise test metrics agenda***



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# Define a Test Metrics Approach

An enterprise-wide Test Metrics Approach is often the best strategy for an organization as it will bring consistency across all projects & programs.

**Reporting**

- Customer
- Executives
- Test Leadership
- Projects
- Test Team

Reporting Metrics

**Metric Categories (sample)**

- Test Planning & Execution Metrics
- Schedule
- Cost
- Quality

Categorizing Metrics

**Test Metrics Collection & Aggregation Tool**

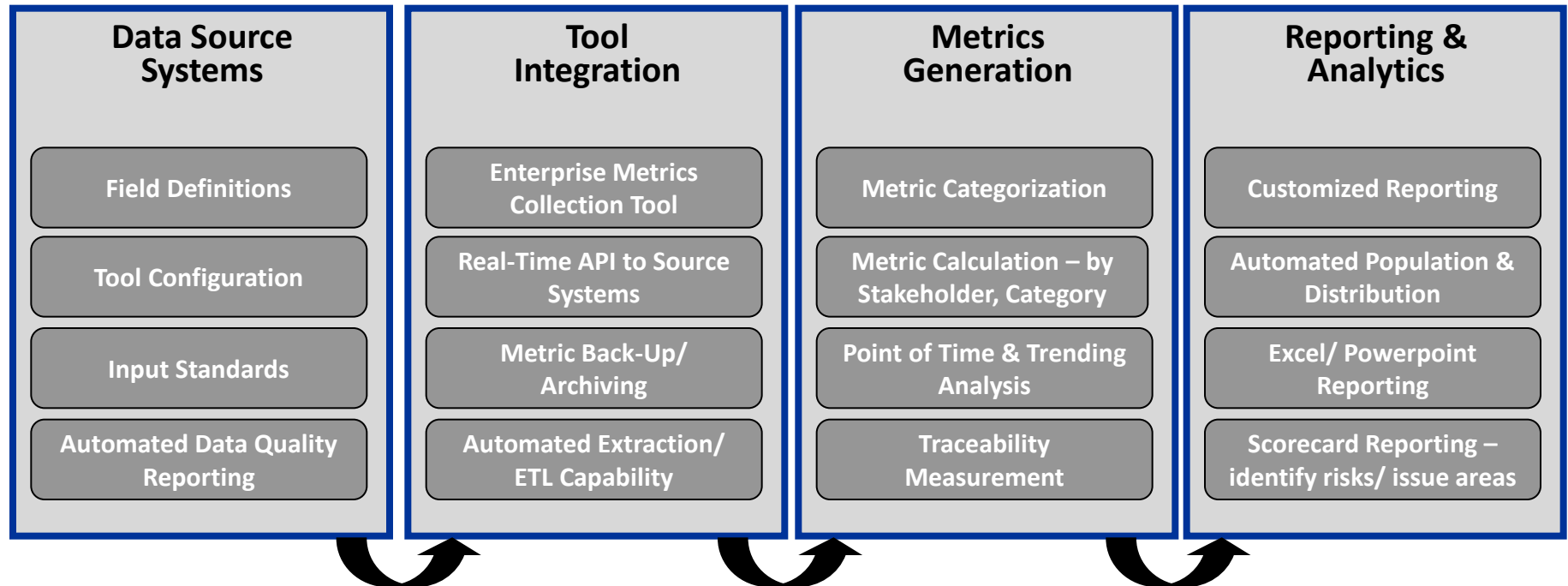
- Automated Collection
- API to Sources
- Archive for Trending
- Metrics Calculation
- Report Generation

Automating Metrics



# Automate Collection and Aggregation

Special attention should be given to the collection & generation of metrics & reports – if you're not careful, it can be very time intensive.



***Remember, you are only as good as the data being entered – “Garbage In, Garbage Out”....***

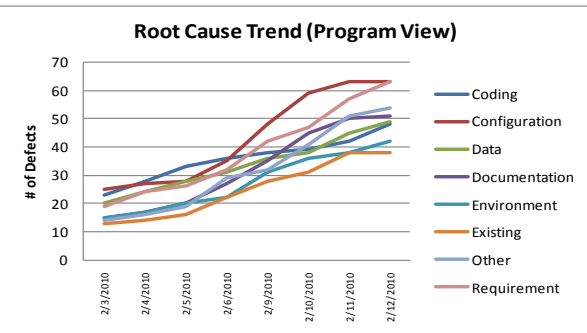


# Standardized Reporting

Defining enterprise-wide Test Reporting will standardize test teams and provide consistency to customers.

## Executive/ Customer View

Sum of Count Root Cause	Root Cause	Configuration	Data	Documentation	Environment	Existing	Other	Requirement
2/3/2010	Coding	16	9	12	11	6	10	8
2/4/2010	Coding	20	11	13	12	6	11	9
2/5/2010	Coding	24	12	17	13	8	12	11
2/6/2010	Coding	24	13	18	14	10	14	15
2/9/2010	Coding	26	21	21	19	13	16	15
2/10/2010	Coding	26	30	23	23	18	19	22
2/11/2010	Coding	28	30	28	23	20	23	27
2/12/2010	Coding	34	30	32	23	24	23	29



## Test Metrics Dashboard

Select All Clear All Export to PPT

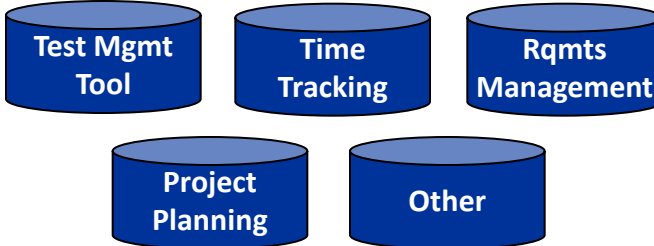
View Selection Settings

Date: 2/10/2010 8:24 PM

Update Status

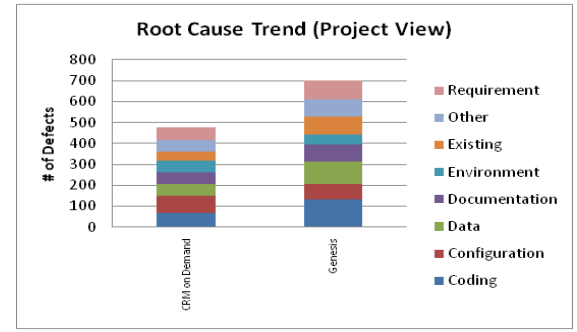
To view the report:  
 - Select the options you desire from menus below  
 - Click on the "View Selection" Button

- Requirement Analysis
  - Requirement Coverage
  - Requirement Traceability
  - Requirement Status
  - Requirement Volatility
  - Requirement Review
- Test Plan Analysis
  - Test Case by Cycle
  - Test Data Timeliness
  - Test Types Overview
  - Resource Productivity (Test)
- Test Execution Analysis
  - Test Execution EV
  - Test Execution by Priority
  - Test Down Time
  - Resource Productivity (Exec)
  - Test Execution Time
- Defect Analysis I
  - Overall Defect Summary
  - Defects by Sev and Priority
  - Open Defects by Cycle
  - Defect Trend
  - Application Defects by Severity
  - Root Cause Trend
  - Reopened Defects
  - Defect Removal Effectiveness
  - LOB by Severity
  - Region by Severity
- Defect Analysis II
  - Defect Status vs Execution
  - Defects by Assignee
  - Defect Status - View this Week
  - Defects Ready for Release
  - Defect Aging
- Cost Analysis
  - Manual vs Automated ROI
  - Onshore - Offshore ROI
  - Onshore - Offshore Ratio
  - Time Spent on Reviews
  - Defects Found Post Production
  - Defects by Sev-Post Production



## Project/ Operational View

Sum of Count Root Cause	Root Cause	Configuration	Data	Documentation	Environment	Existing	Other	Requirement
CRM on Demand	Coding	67	82	56	55	57	45	54
Genesis	Coding	131	74	108	83	48	83	82



# Communication Plan

**A Test Metrics Communication Plan is critically important. It should include:**

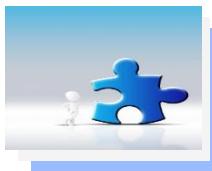
- Stakeholder Identification & Reporting Requirements
- Metric Collection Schedule
- Metric Generation Schedule
- Communication Channels
- Roles & Responsibilities
- Training Manuals & Job Aids



# You are Ready to Go!

**We will leave you with some final thoughts that will hopefully get you thinking more about testing metrics:**

- Do you know what your stakeholders want regarding metrics?
- What time are you spending on metrics? too much/ too little?
- Do you consistently report test metrics across all groups?





**Thank You!**