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A Few Simple Metrics Will Assist You In Managing IT Resources

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Presentation Outline

- Why Measure
- Concepts and Principles
- What to Measure
- Focus on Business
- How Organizations Compare
- Sources of Industry Data

Why Measure?

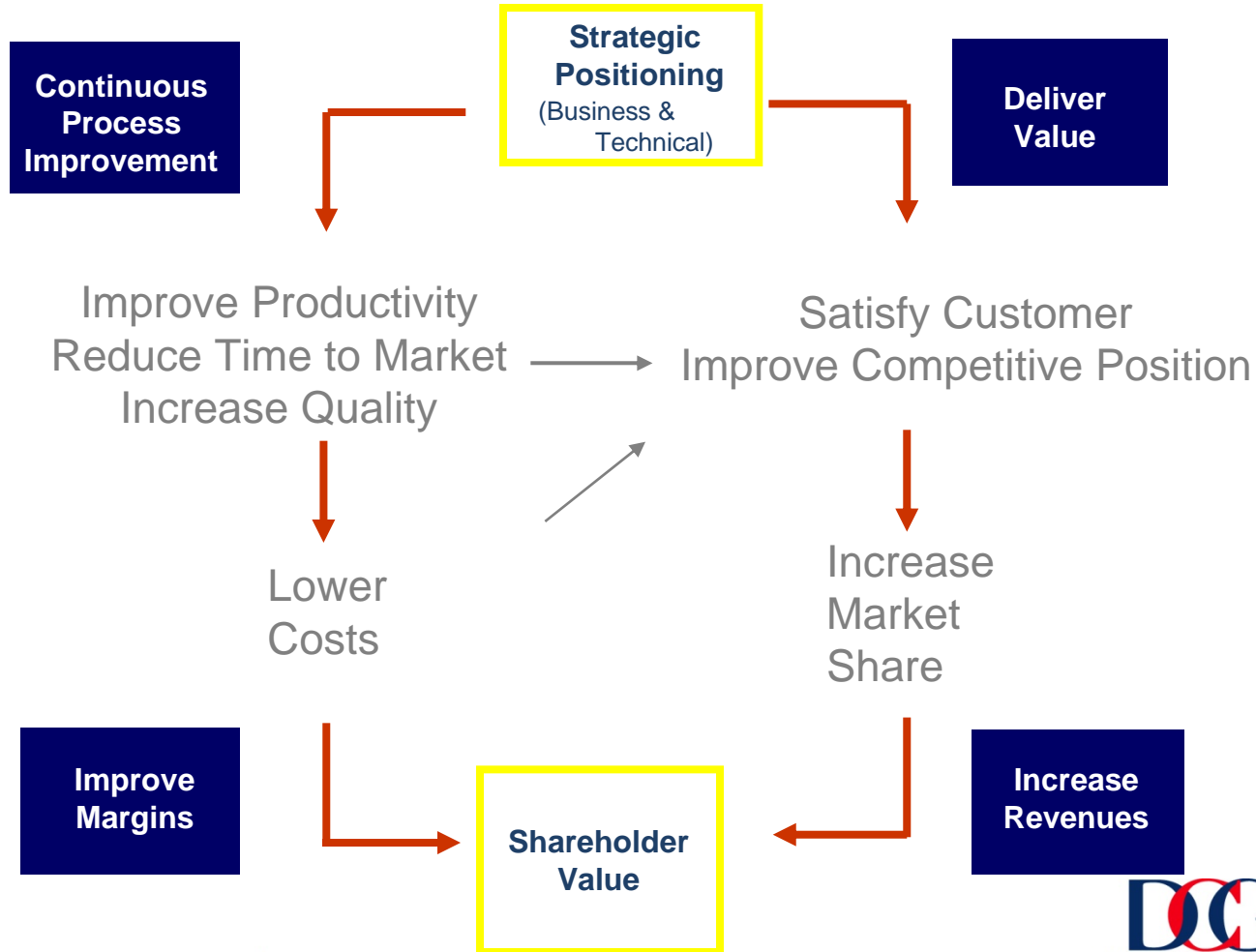
FACT: It is important for organizations to improve performance productivity and software quality

ACTION: Improvement requires change

CONTROL: Change needs to be managed

SOLUTION: Effective management requires accurate measurement

What Are Your Organization's Needs



Concepts & Principles

Use metrics to:

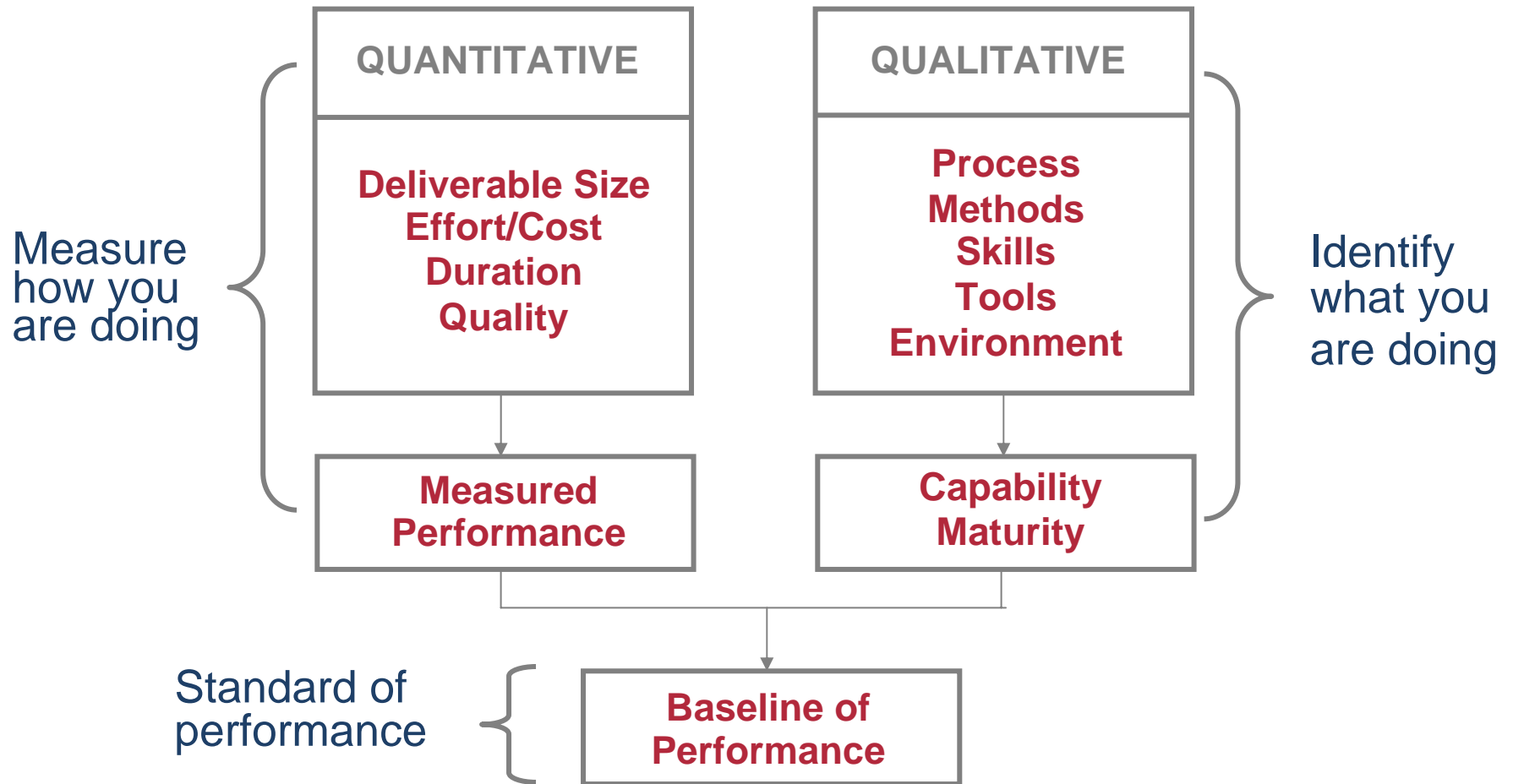
- Identify best practices
- Establish a baseline to determine trends
- Assist in estimating and planning software projects and portfolio maintenance
- Manage IT budgets more effectively
- Identify quantity and quality of delivered software
- Provide a basis for industry comparisons
- Enable better communications between all stakeholders, especially users & developers

Concepts & Principles

- How to use metrics
 - Use metrics in a positive way
 - Integrate metrics into existing processes
 - Promote metrics throughout the organization
 - Use metrics for decision making, goal setting and process improvement modeling

- When not to use metrics
 - Don't use quantitative metrics without considering qualitative aspects
 - Don't use metrics to hide project concerns

What To Measure?



Definitions

- Measure
 - Number that assigns *relative* value
 - Examples: effort hours, # of defects, function points, calendar months
- Metric
 - Combination of two or more measures
 - Standards by which a process or product can be objectively evaluated
 - Examples:
 - Productivity rate = hours/function point
 - Defect density = number of defects/size

Possible Measures

- Productivity
- Quality
- Cost
- Time (calendar and project)
- Customer satisfaction
- Estimating efficiency
- Scope creep
- Repair turnaround time
- Downtime

Common Measures

- Size*
- Defects*
- Effort*
- Duration*
- Cost
- Customer satisfaction

*referred to as the “core measures” by the Software Engineering Institute (SEI)

Metrics Must Focus on Business

- Metrics must satisfy the goals of your organization
- Use industry standard metrics to facilitate comparisons with other organizations
- Ensure metrics are clearly definable, realistic, measurable & meaningful
- Collect metrics consistently at a project level and use appropriately at a variety of summary levels
- Metrics must align with customer satisfiers and the needs of the development organization
- Select a few metrics to implement initially and allow metrics to evolve as your organization matures in measurement

Baseline Current Performance

- Establish a 'stake in the ground' from which improvement programs can be identified
- Display quantitative data regarding the effectiveness of the techniques and methods currently being used
- Permit the measurement of the impact of new tools, techniques and methods
- Give the information an organization needs to properly direct improvement initiatives and progress

Recognize and Overcome Roadblocks, Challenges and Hurdles

- Must have management and executive support
- Carefully select measurement program personnel
- Be consistent and persistent
- Schedule activities
- Educate and promote
- Publish success stories
- Most Important: Participants need to know what's in it for them!

How Organizations Compare

- You must compare similar projects
- The following attributes should be among the criteria as they have a significant impact on productivity rates:
 - Project type
 - New development, enhancement, re-engineering
 - Operational platform
 - Client/server, mainframe, web, PC
 - Project size
 - Use industry standard definitions

What Organizations Compare

Characteristics

Project Type
Platform
Data Base
Method
Language

Complexity Variables

Logical Algorithms	Code Structure
Mathematical Algorithms	Performance
Data Relationships	Memory
Functional Size	Security
Reuse	Warranty

Metrics

Size
Cost
Effort
Duration
Defects

Attributes

Management	Process
Definition	Skill Levels
Design	Quality Practices
Build	Technology
Test	
Environment	

Sources of Industry Data

Organizations that have provided benchmark data on performance levels within the software industry:

- Benchmark Exchange (www.benchnet.com)
- David Consulting Group (www.davidconsultinggroup.com)
- Gartner Group (www.gartner.com)
- Hackett Benchmarking & Research (www.answerthink.com)
- ISBSG (www.isbsg.com)
- META Group (www.metagroup.com)
- SPR (www.spr.com)

Online Resources - Organizations

- Quality Assurance Institute (QAI)
 - www.qaiworldwide.org
- International Function Point Users Group (IFPUG)
 - www.ifpug.org
- Practical Software and Systems Measurement (PSM)
 - www.psmsc.com
- Software Engineering Institute (SEI)
 - www.sei.cmu.edu

Summary

- Metrics must be matched to business user needs
- Metrics must be based upon the goals of the process being measured
- Metrics should be utilized in decision making
- Metrics should be utilized to monitor improvements & process changes
- Quantitative and qualitative assessments are both essential in managing your IT resources
- Starting small, having short-term goals, focusing on key measures and obtaining buy-in from all stakeholders are critical