Use of Measurements and Metrics for the Project Management Office (PMO)

Presented by:

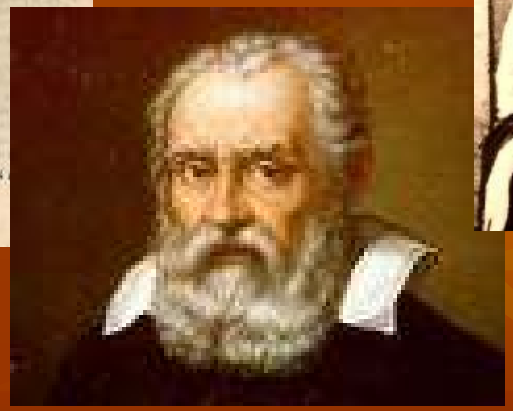
Joseph Raynus

Founder & Principal Consultant

ShareDynamics, Inc.

The Paradigm

Paradigm: A set of assumptions, concepts, values, and practices that constitutes a way of viewing reality for the community that shares them, especially in an intellectual discipline.



The Balancing Act

People who want to establish a Project Management Office should realize that they are likely to encounter substantial skepticism and resistance to their efforts

"The Project Office" by Thomas R. Block (1998):

The PMO Wish List

1. Project Delivery Mentoring
2. Project Management Training
3. Project Management Info
4. Portfolio Management
5. Resource Management
6. Change Control Management
7. Methodology
8. Help Desk
9. Governance Reporting
10. Templates, Best Practices
11. Etc., etc., etc.

Performance Management

Performance management provides framework to:

- Establish performance goals
- Allocate and prioritize resources
- Inform management about needed change
- Share results of performance in pursuing those goals

Project Performance Measures to:

- Monitor and control project performance
- Achieve alignment of organizational goals and objectives with project objectives
- Drive process improvements
- Maximize the effectiveness of project effort
- Improve cross-functional collaboration

Measurement Philosophy

- What is sufficient?
- Who owns the measure?
- What are the risks?
- What is strategic value?
- Which Executive?
- Which Sponsor?

Goals and Measures

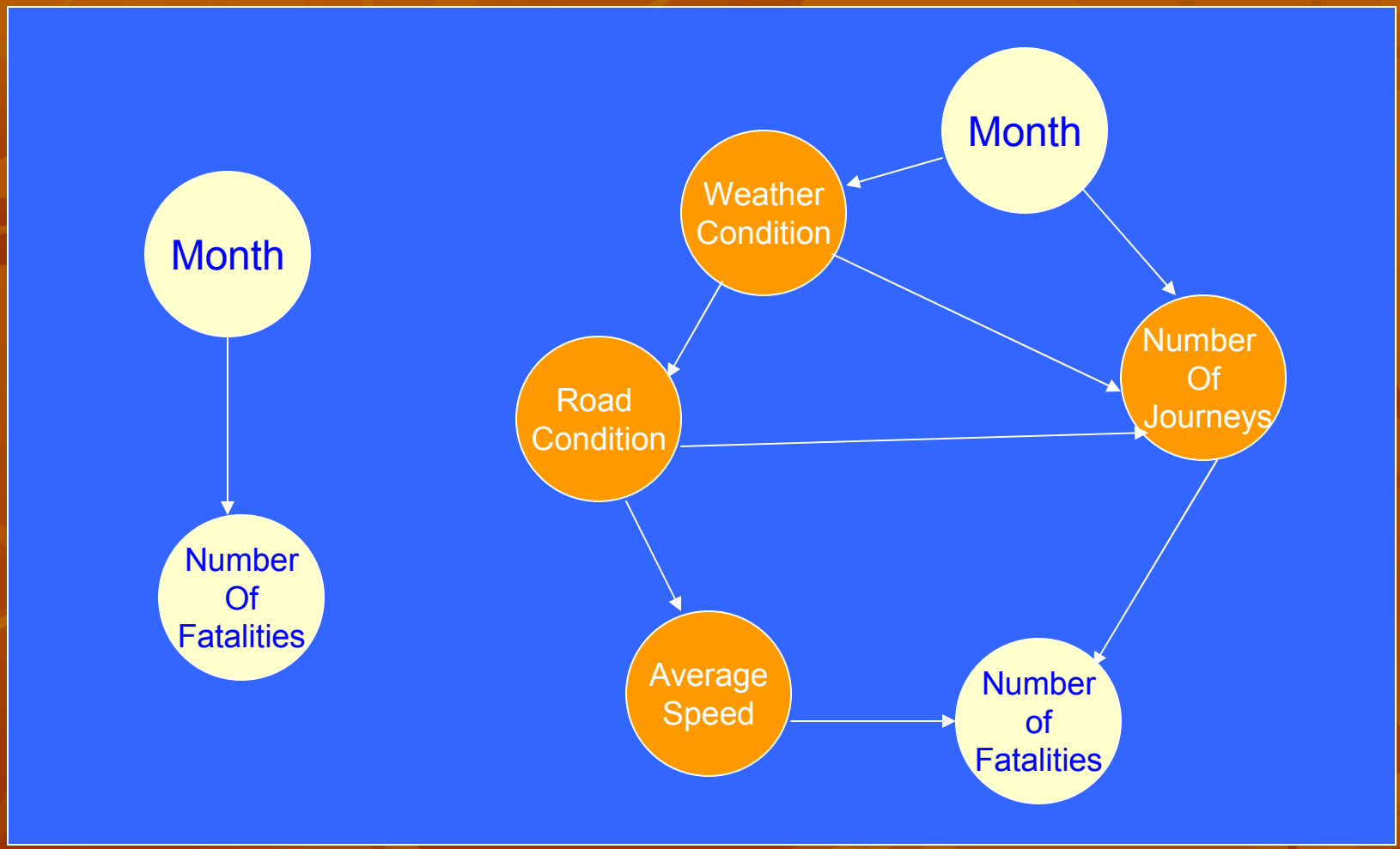
Measurements should be developed from each of four perspectives to achieve balance in setting objectives:

- Customer
- Financial
- Internal
- Innovation

Which Framework is the Best?

- The Flow Framework – traces project activities to impacts and related measures
- The Matrix – good for showing the rationale for prioritizing and selecting among groups of projects
- Causal Loop diagrams – show the cause and effect structure through relationship between the parts
- Balanced Scorecard – aligns measures with strategies to track progress, reinforce accountability, and define improvement opportunities/priorities

Measurement Dependencies



Fenton & Neil

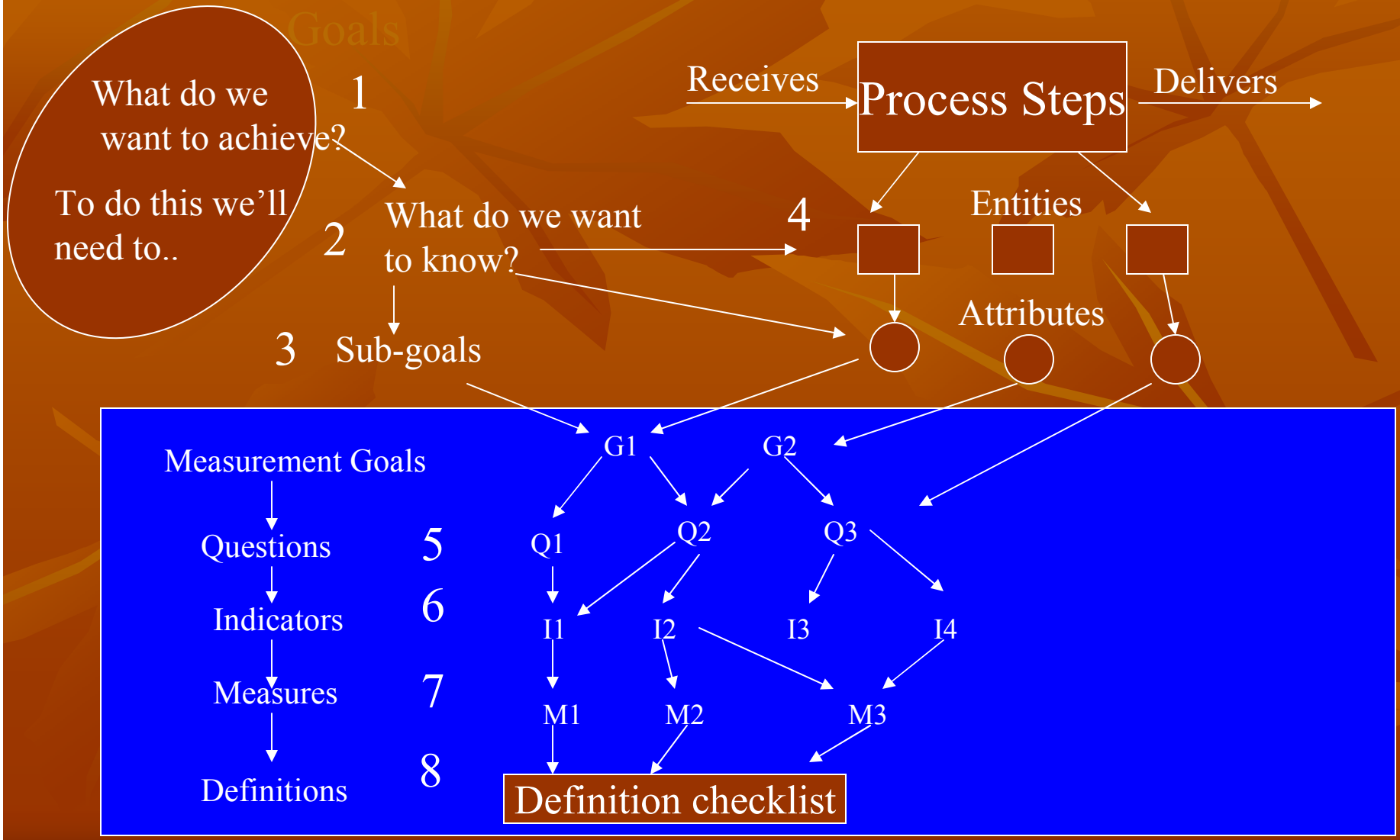
Who, Why, What, When, How?

Who Develops Performance Measures?	Program Managers	Functional Managers	Project Managers	
Why Implement Performance Measurements?	Improve Program Performance	Support Budget	Improve Process	Report on Investments
What is Performance Measurement?	Process of Assessing Progress toward Achieving Goal			
	Effectiveness (Right Thing)	Efficiency (Best Use of Resources)		
When Measures Applied?	Capital and Program Planning	Deciding Strategic Objectives	Tracking targets, Reporting, Proactive actions	
How to Establish Performance Measures?	Balanced Scorecard Perspective			
	Stakeholders Customers	Internal Processes	Financial Learning and growth	

The Goal Question Metric Methodology (GQM)

- GQM is a goal oriented approach that helps to define why and what to measure
- Developed by Vic Basilli at the University of Maryland
- Adapted by Software Engineering Institute at Carnegie Mellon for management of software development projects

Measurement Definition Process



The Goal Question Metric Methodology (GQM)

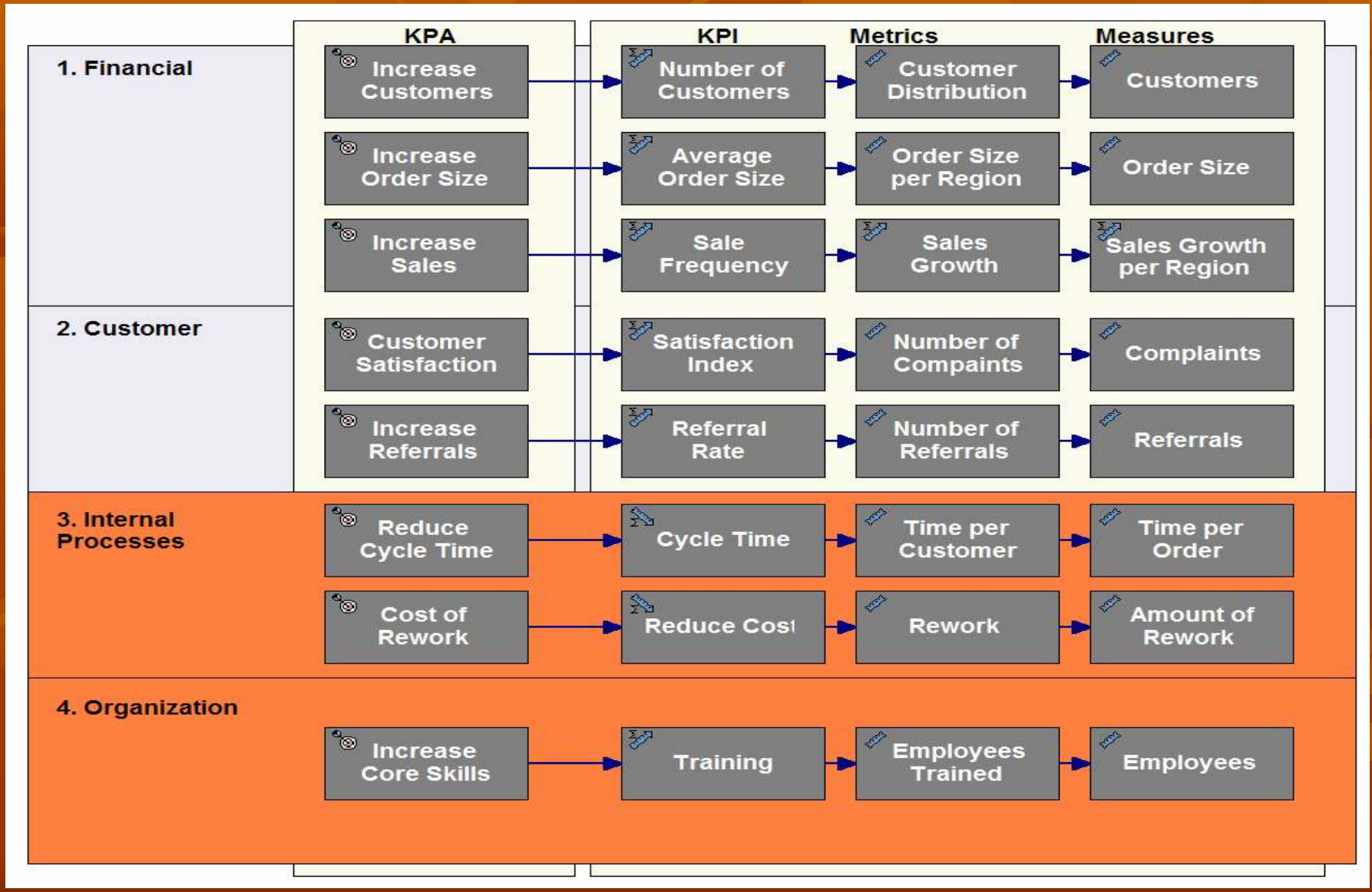
GQM specifies five dimensions:

- **Purpose** – the reason for the measurements
- **Object of study** – the entity or entities that should be studied
- **Quality focus** – the attribute or attributes that should be studied
- **Viewpoint** – the viewpoint from which the measures are taken
- **Environment** – the specific project or environment where the measurement take place

GQM Goal Definition Example

Analyze	Change request processing
For the purpose of	Improvement
With respect to	CR processing cycle time
From the viewpoint of	Customer loyalty
In the context of	The current product quality

Goal-Question-Metric Example



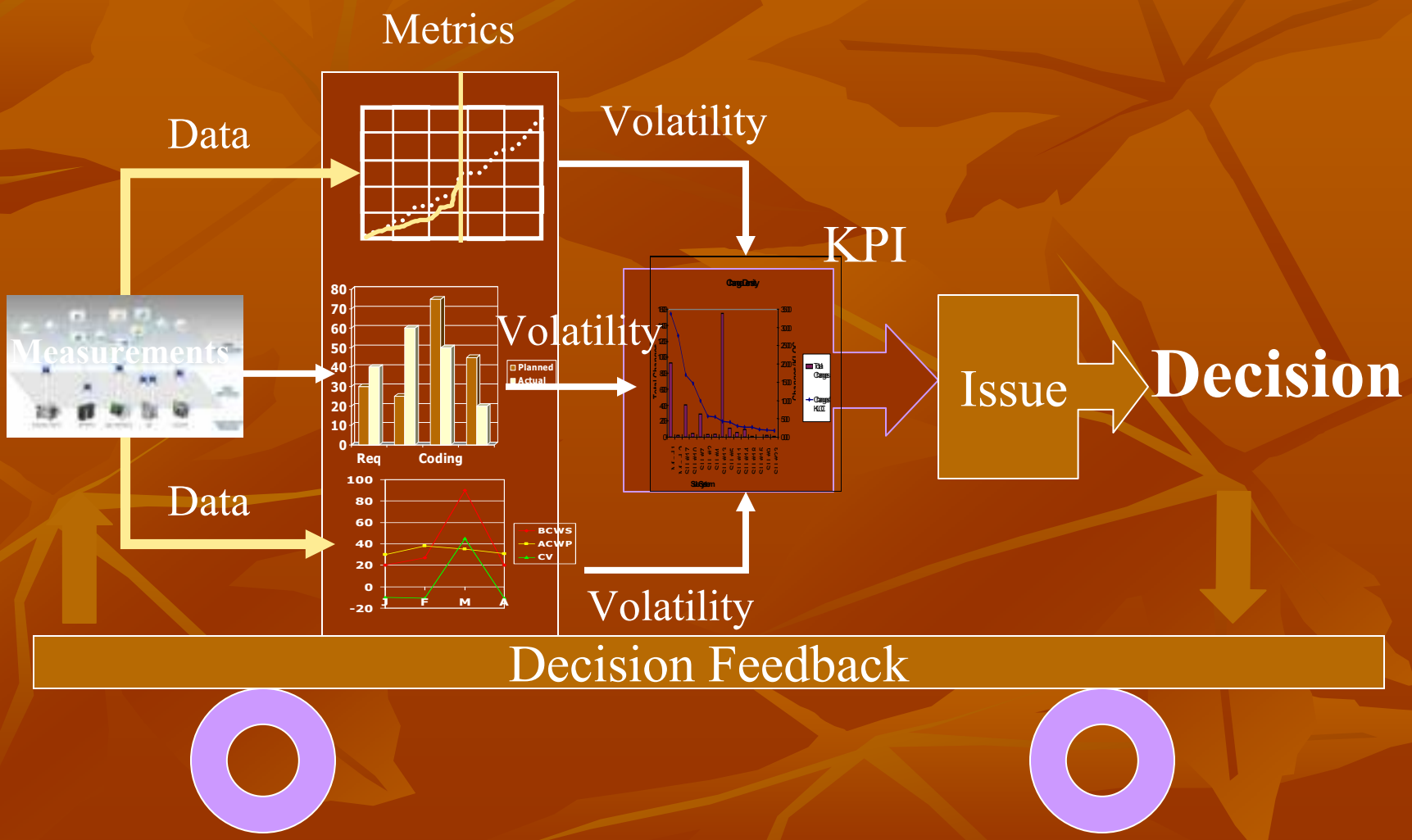
Effective KPI's

Meaningful KPI should be:

- Goal oriented
- Applied to projects, processes, and resources
- Interpreted based on understanding of the organizational context, environment, and goals
- Monitor and control changes

Rule of Thumb: *Develop your own KPI to answer your own management questions*

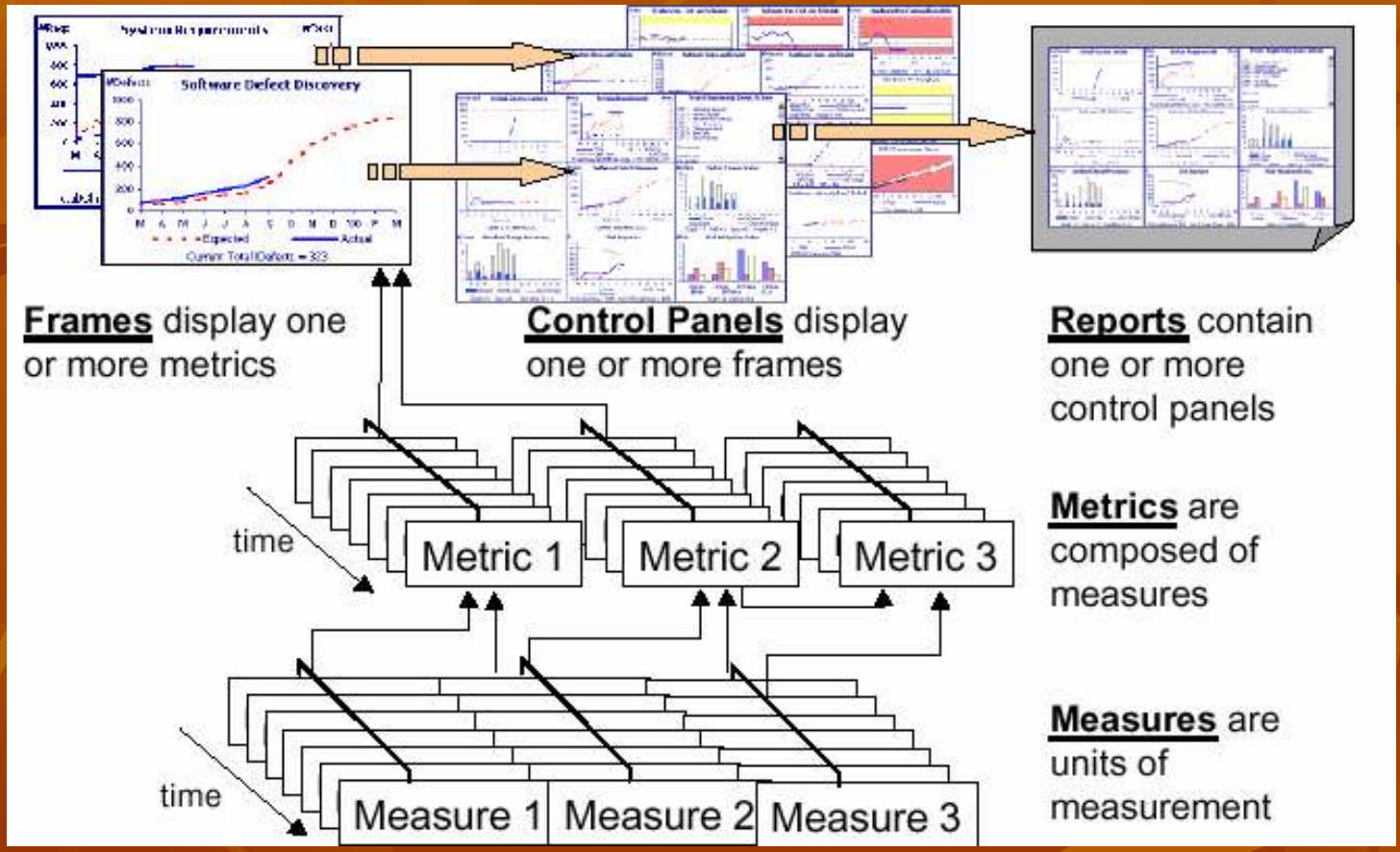
KPI as a Decision Tool



Measures

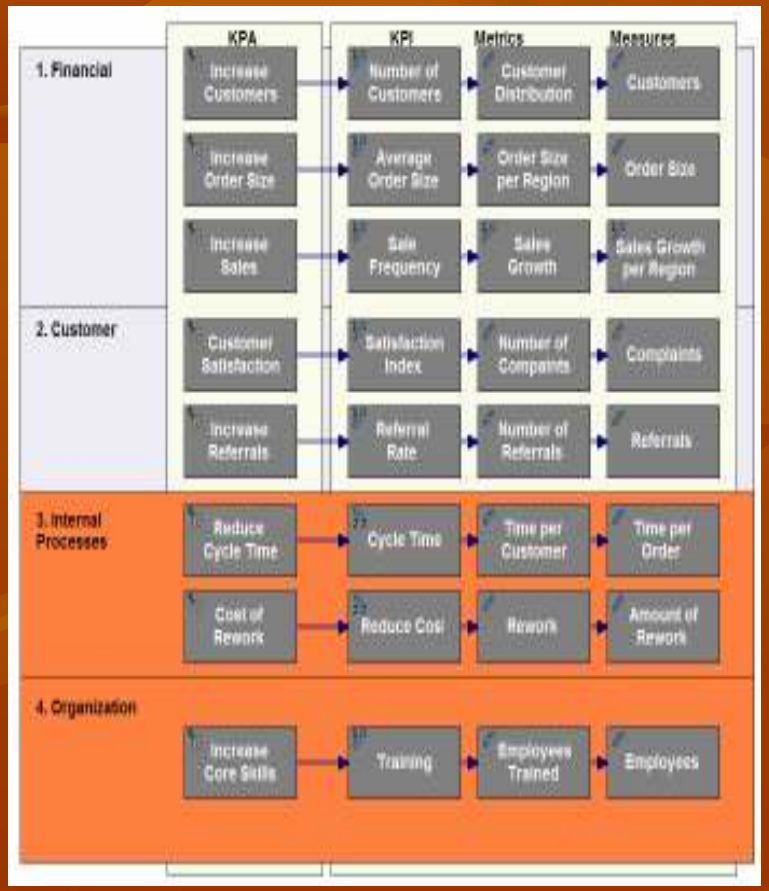
Issue	Category	Measure
Resources and Cost	Personnel	Effort
		Staff Experience
		Staff Turnover
	Financial Performance	Earned Value
		Cost
	Environment	Resource Availability Dates
		Resource Utilization

The Dashboard Concept

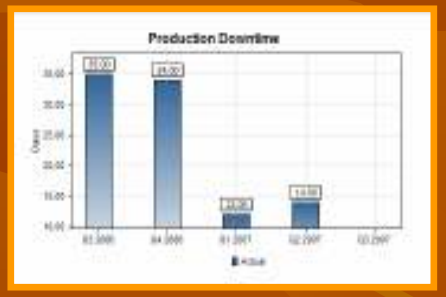


Dashboard Types

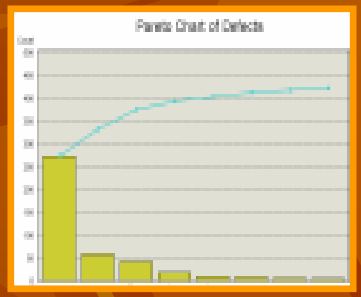
Strategic

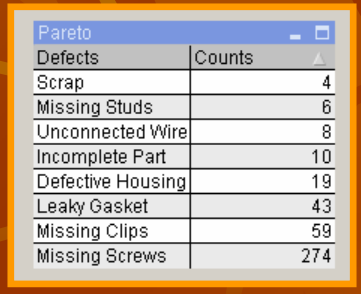


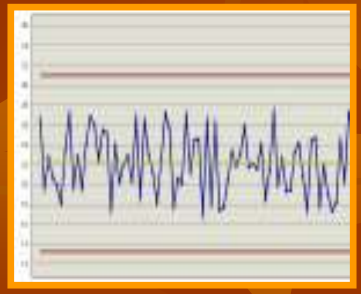
Tactical



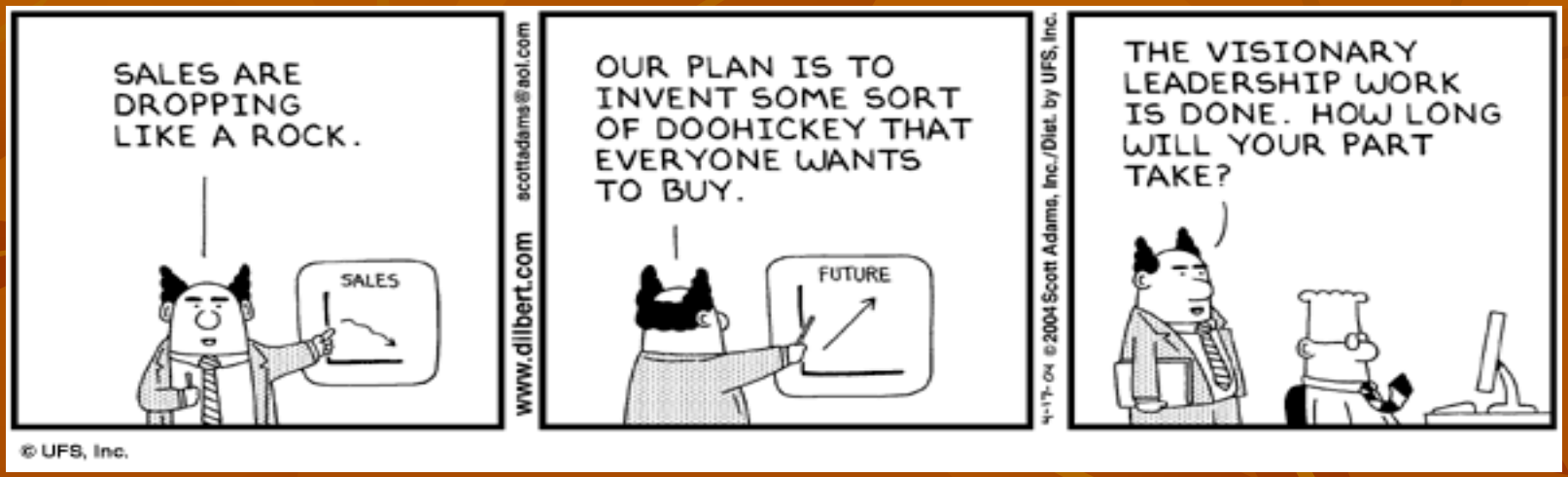
Operational







Strategic (Balanced Scorecard)



- ✓Measurements based on strategy to evaluate performance
- ✓ Executive scorecards linked to detailed scorecards based on strategy
- ✓ Results are measured, monitored and shared with all parties
- ✓Links strategy and customer needs to the improvement efforts

Example of Scorecard Structure

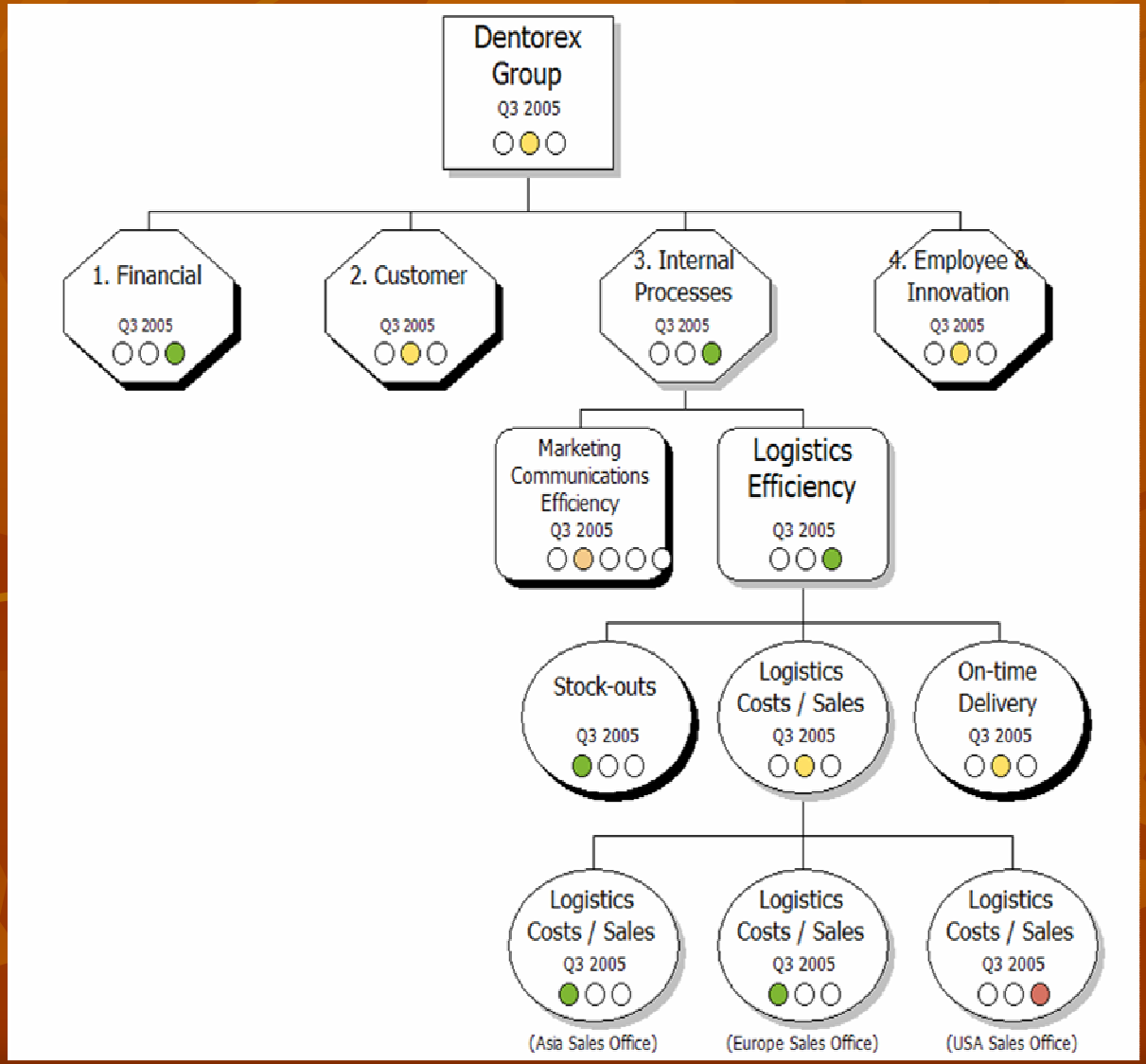
Scorecard top element

Perspective

Critical success factors/ Strategic objectives

Measures

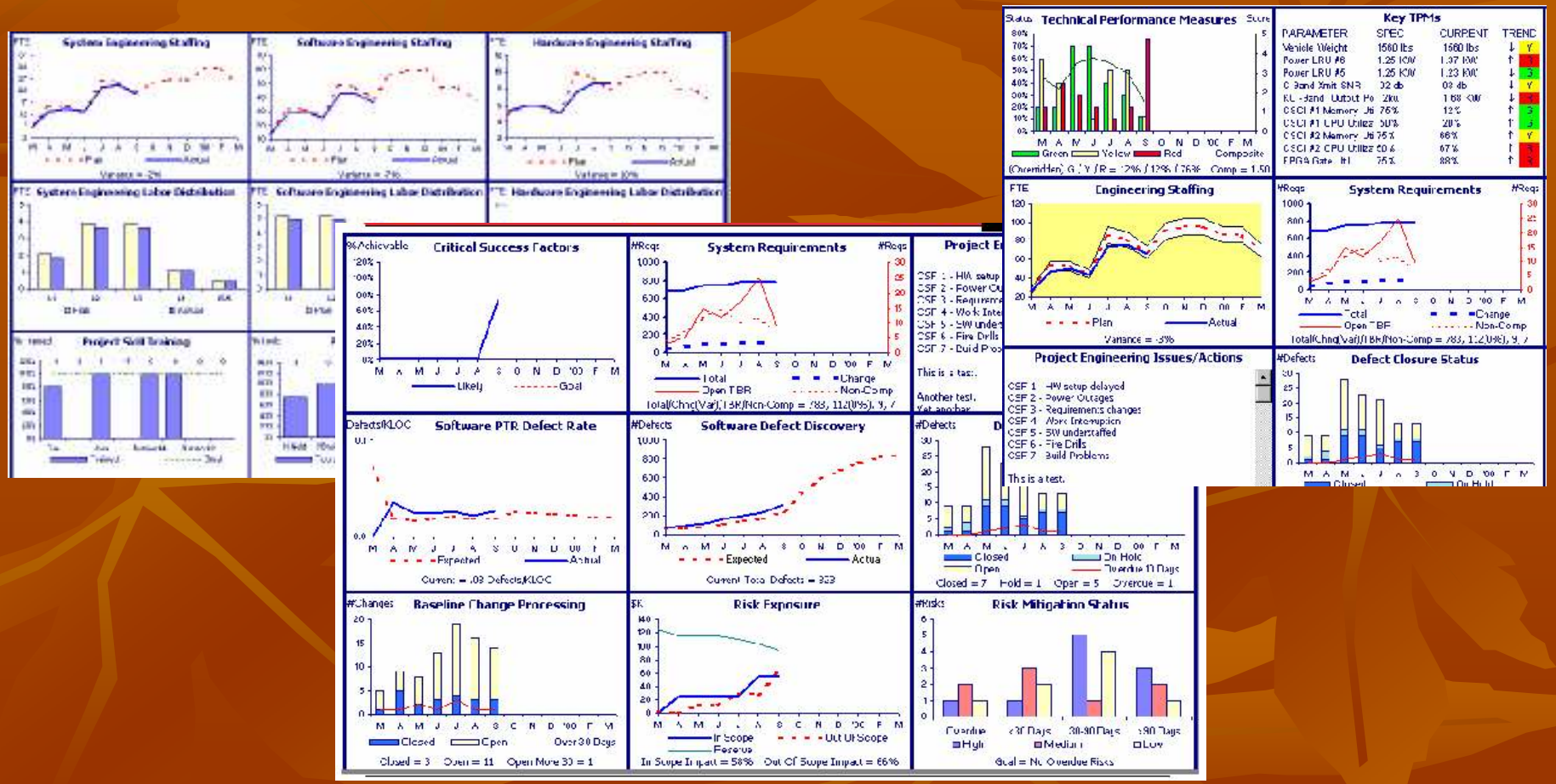
Unit measures



Tactical & Operational Dashboards

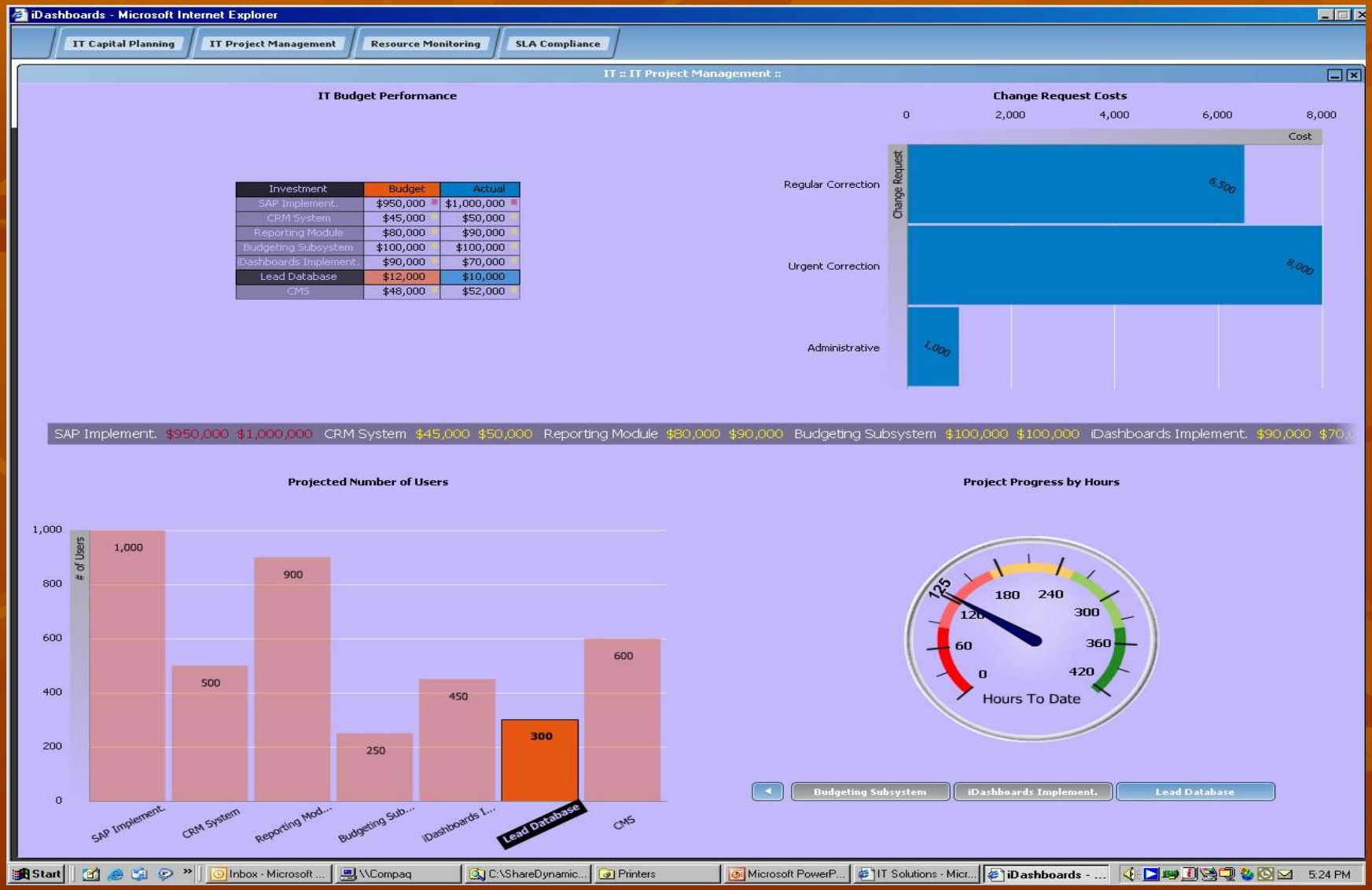
Project Resources

Management Board



Engineering Performance

PMO Dashboard Example



Quantitative Management

- Establish clear strategy, goals and targets
- Establish relationship between internal goals and environmental inputs
  - Influence of outside environment
- Set quantitative measurement goals to compare with actual results
- Construct KPI's to achieve and maintain stability in dynamic internal and external environment

Common Measurement Mistakes

"Never mistake activity for achievement"

- Piles of numbers – use Dashboard to identify the vital few
- Inaccurate, late or unreliable data
- Trying to meet a target versus understand the process
- Measurements that are too broad or too specific
- Punishing people instead of fixing the process

Successful Metrics Implementation

- Requires paradigm shift
- Delivers important information for the business decision making
- Gives managers control over business direction
- Increases process awareness
- Enables collaboration and process transparency
- Provides managers with tools to assess and analyze project performance and identify process improvement opportunities

Questions?

Contact Information

ShareDynamics, Inc.
15 Pelham Rd.
Lexington, MA 02421
781-863-9634
joer@sharedynamics.com

Selecting Measures

Schedule and Progress

- *Milestone completion*
- *Critical path performance*
- *Work unit progress*
- *Incremental Capability*

Prospective Measures

- *Requirements traced*
- *Requirements tested*
- *Requirements status*
- *Problem reports opened*
- *Problem reports closed*
- *Reviews completed*
- *SPR opened*
- *SPR resolved*
- *Units designed*
- *Units coded*
- *Units integrated*
- *Test cases attempted*
- *Test cases passed*
- *Action item opened*
- *Action item completed*
- *Components integrated*
- *Functionality integrated*

The Question is not:

What metrics should I use?

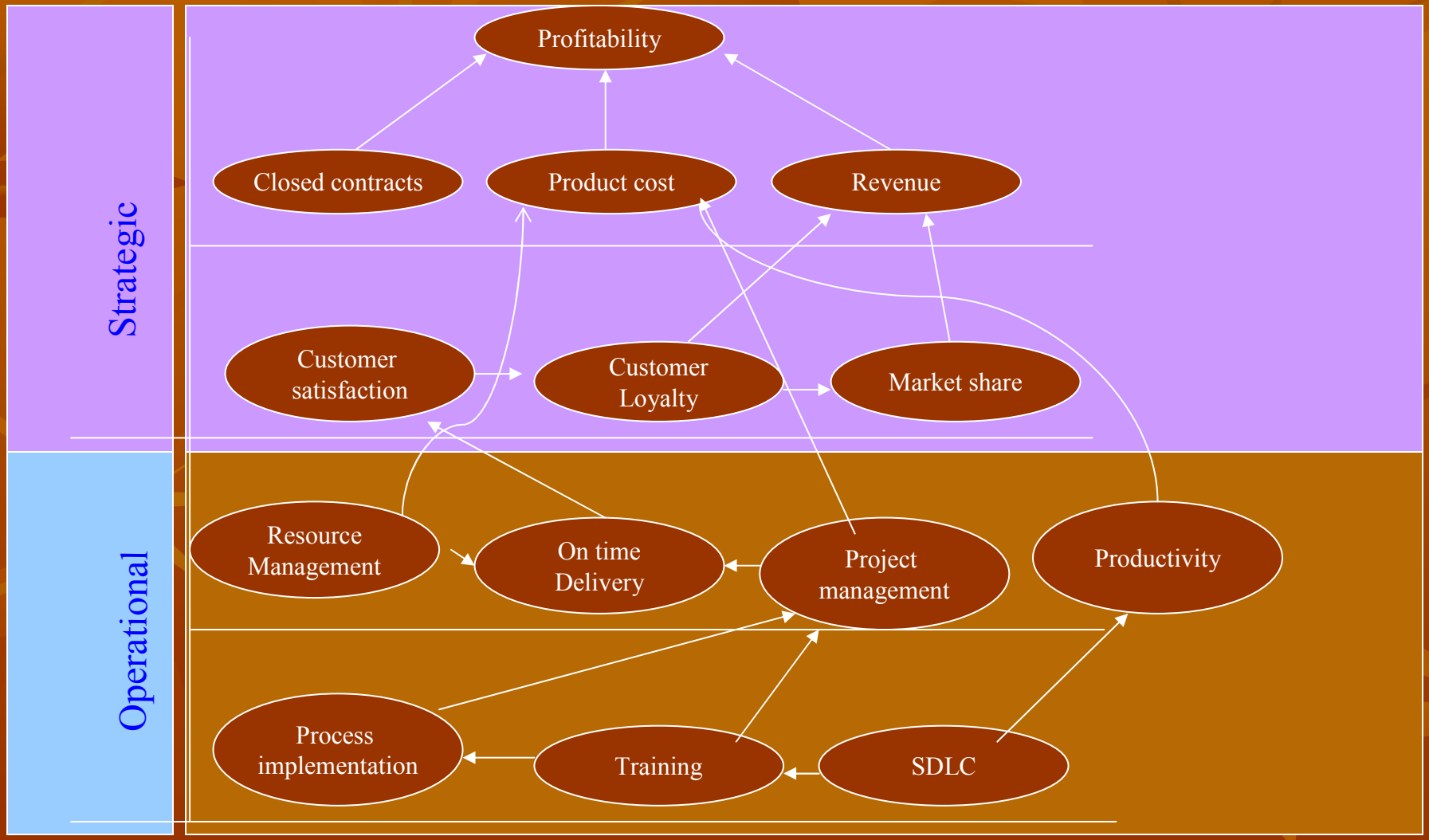
Rather:

What do I want to know?

Why are we collecting the data?

How do we use the data?

Strategic Operational Alignment



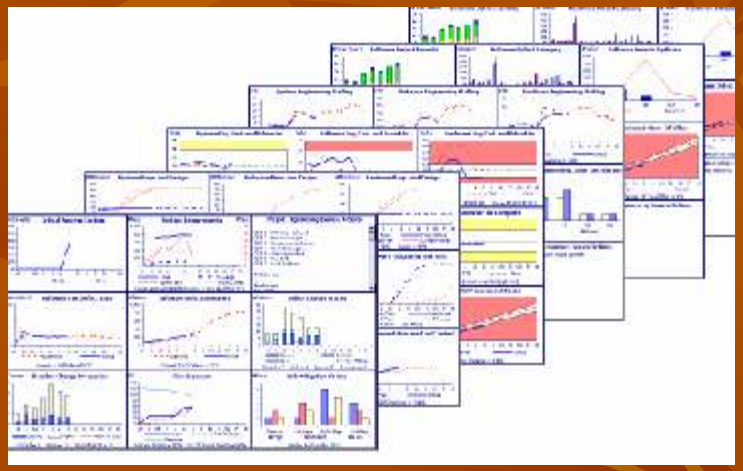
Process Parameters

Process metrics define the effectiveness of a process and used for comparison between existing and changed processes

Examples

- Cycle time
- Productivity
- Utilization of staff
- Cost of a finished product
- Throughput
- Time required to perform the task
- Task triggers
- Rework

Control Panels



Project

- Performance
- Progress
- Cost and Schedule
- Resources
- Software performance

- Requirements Stability, Quality
- Schedule milestones
- Cost, Schedule variance
- Staffing, Training, Tools
- Software Quality and Reliability

Balanced Scorecard Measurements

- The purpose of measurements is to guide, forewarn, and inform
  - "in flight" course corrections
  - Advance warning of potential problems (e.g. trends, process variances)
  - Process progress (e.g. process transparency for cross-functional teams)
- Measures are the key elements to achieve maximum business performance if they are:
  - Driven by business requirements and organizational

Management Panel