
Developing and Sustaining the Organizational Focus on Quality

Tom Huizenga

ASQ SW Florida

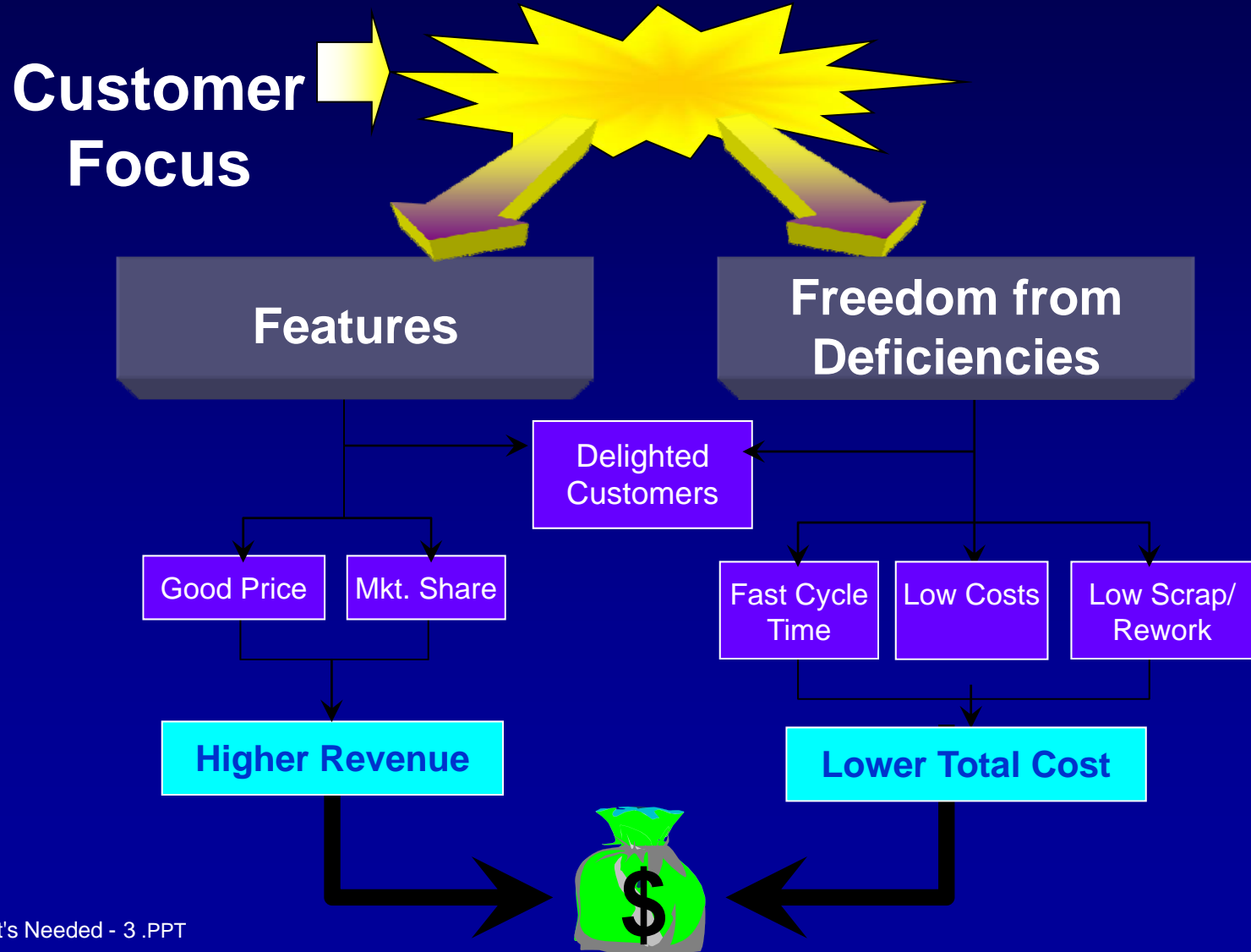
Nov.14, 2009

Juran's Lessons Learned

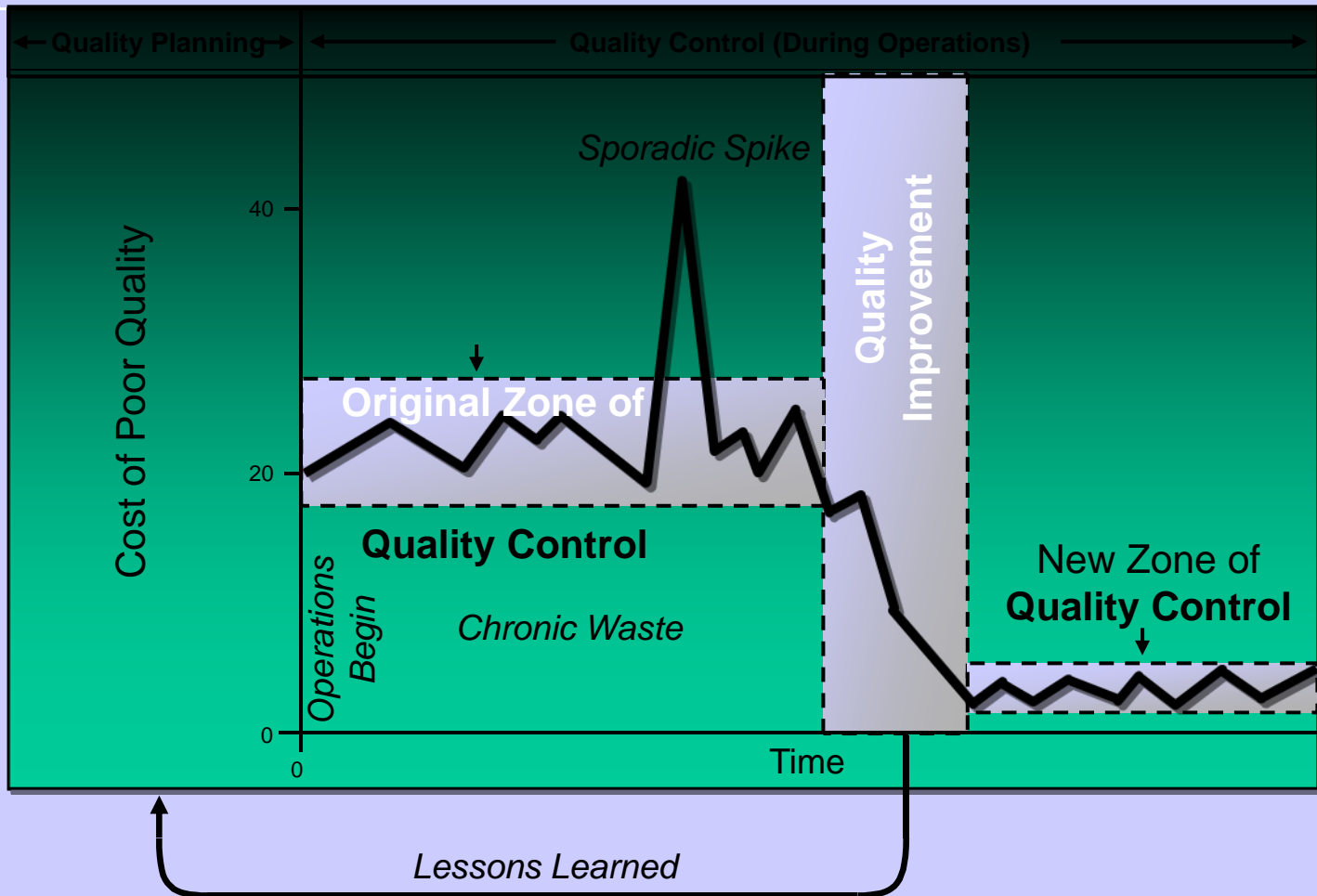
- How do you Get Started?
 - How do you Build for Success?
 - What are the Key Elements for Sustaining Success?
-



WHAT ARE YOU CHANGING TO?



The Juran Trilogy®



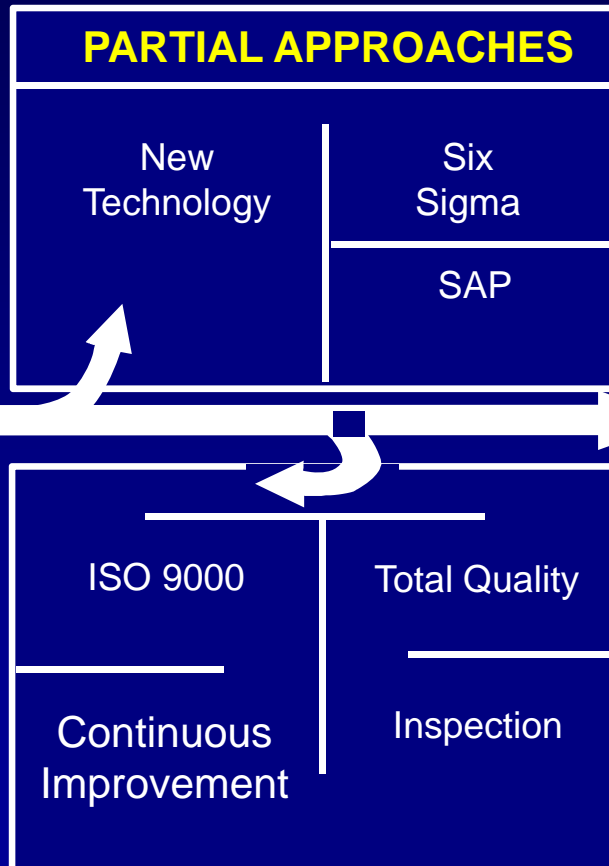
Quality Improvement Projects

*"All improvement takes place
project by project and in
no other way."*

Dr. Joseph M. Juran

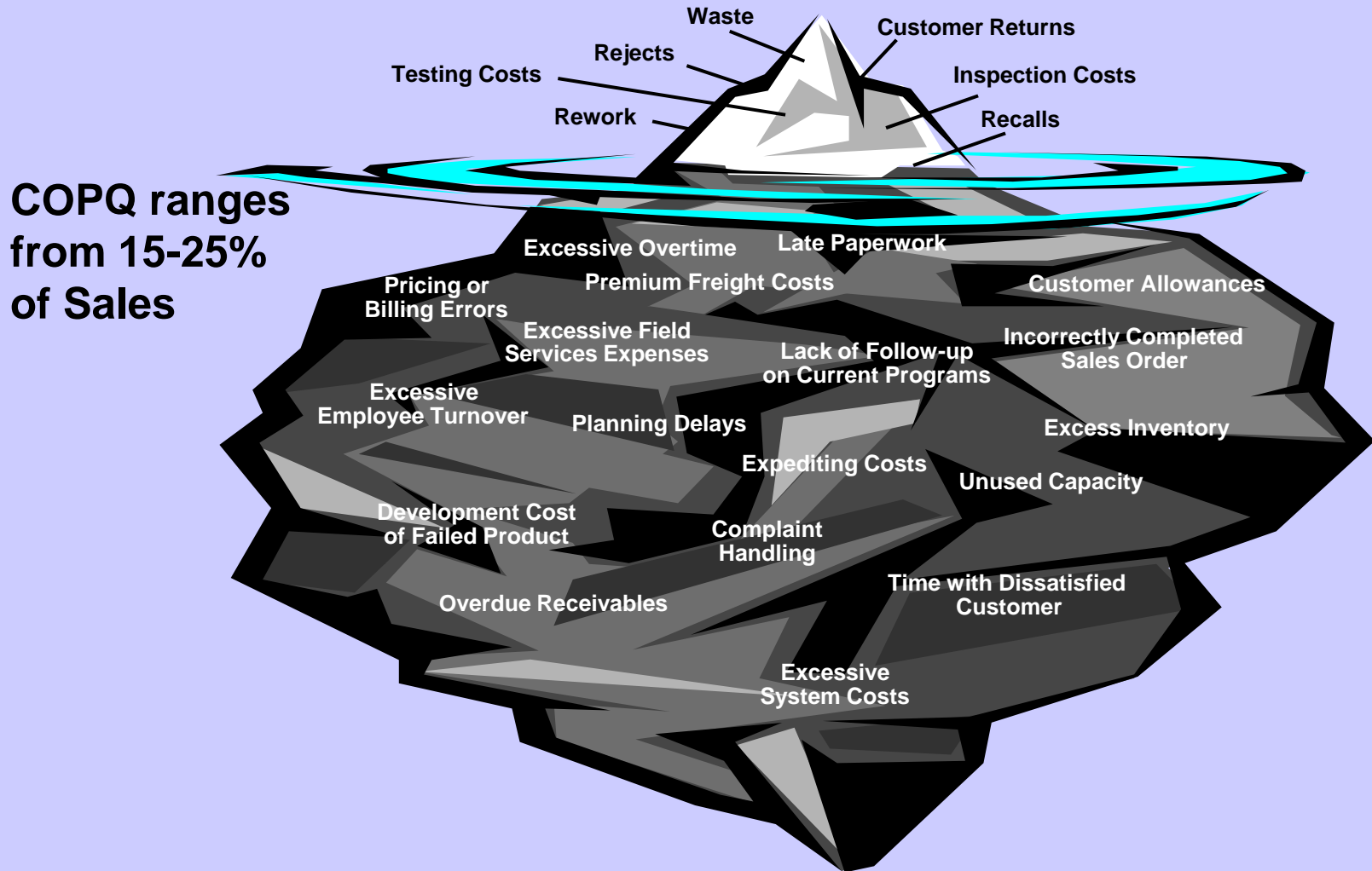
A PERFORMANCE ROADMAP

- A roadmap provides structure for systematically incorporating a change process with long-term business goals
 - Achieving breakthrough results in quality and organizational performance
 - Sustain long-term
 - Juran's Five Phase Roadmap



Decide on how to integrate Quality as a Strategic Choice

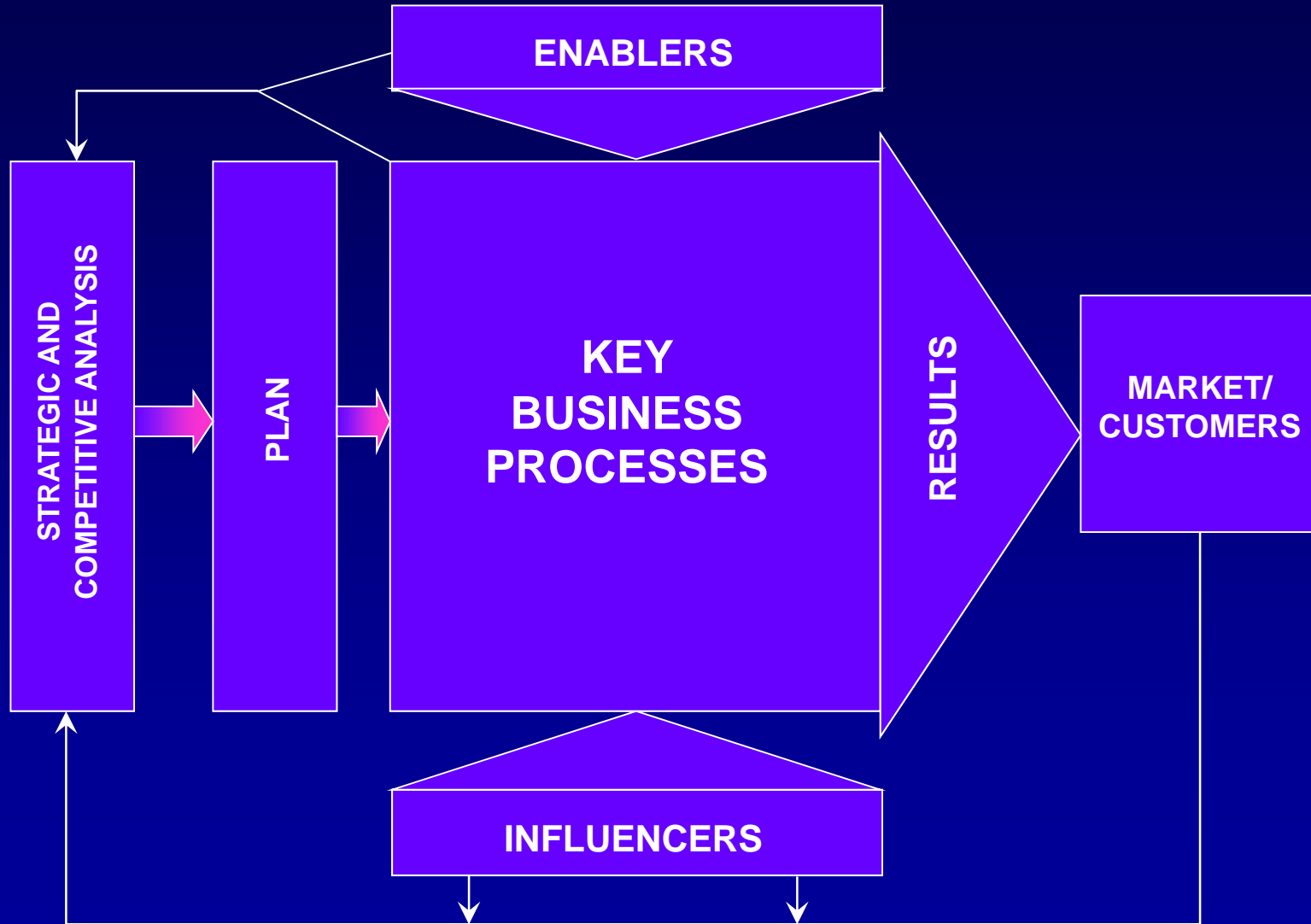
As a company gains a broader definition of poor quality, the hidden portion of the iceberg becomes apparent:



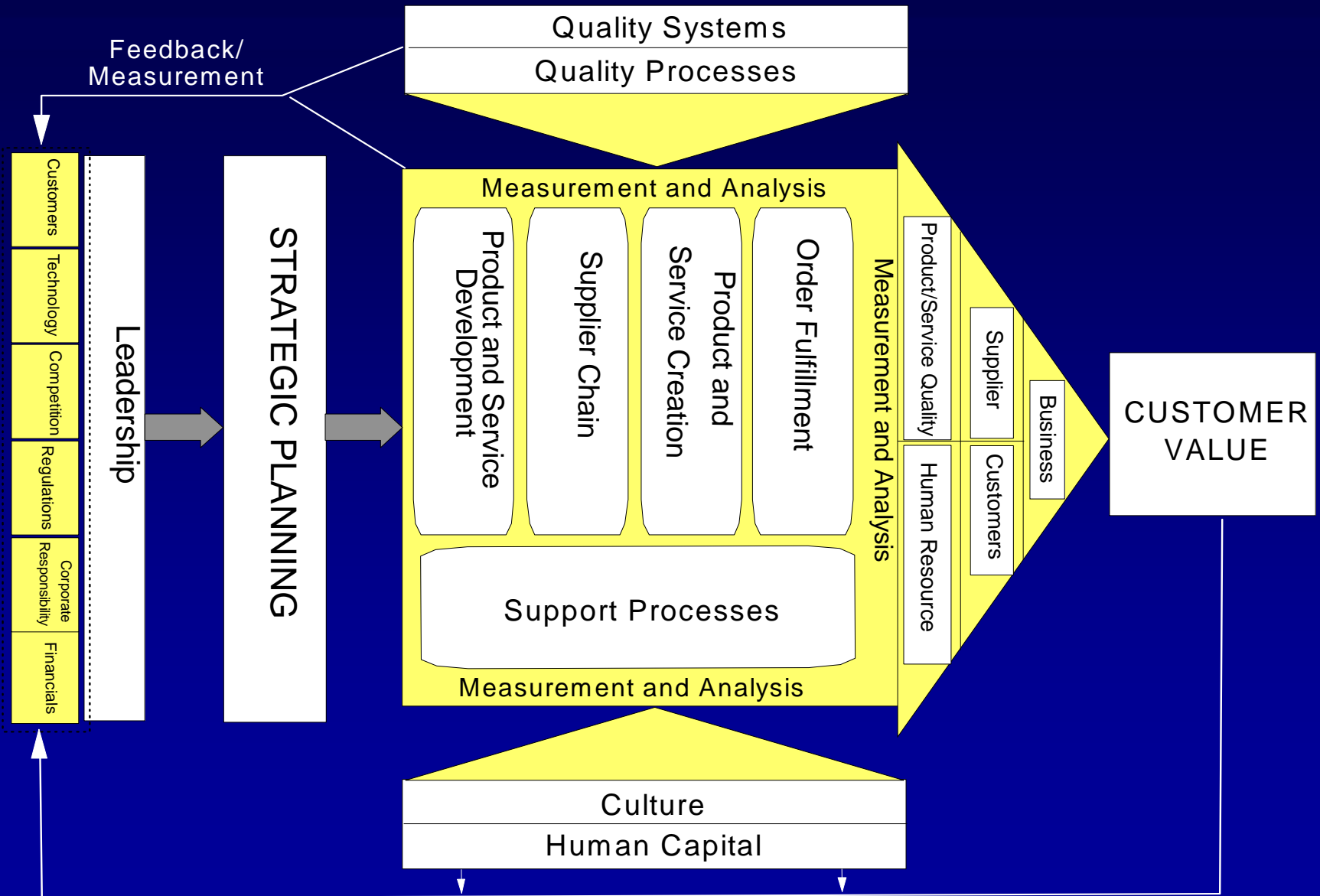
Cost Of Poor Quality

▪ Prevention	Cost of Attaining Quality
▪ Appraisal: Prediction Audit	
▪ Appraisal: Detection	Cost Of Poor Quality
▪ Failure: Internal External	

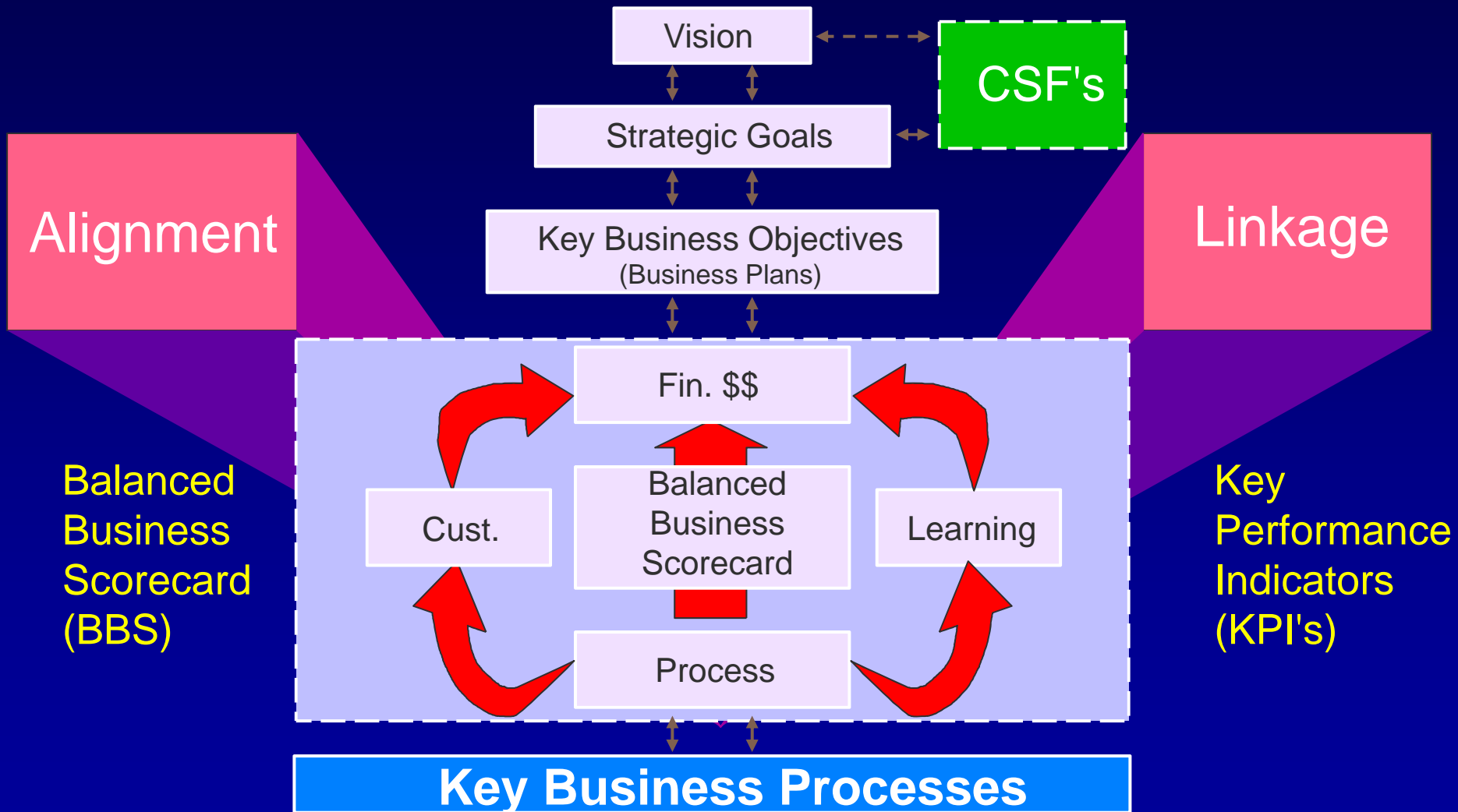
ORGANIZATIONAL PROFILE



ORGANIZATIONAL PROFILE



DEFINE BUSINESS DIRECTION





Tasks for Upper Management

•Set Goals

Identify the best opportunities to improve business performance and set strategic and annual goals for the organization.

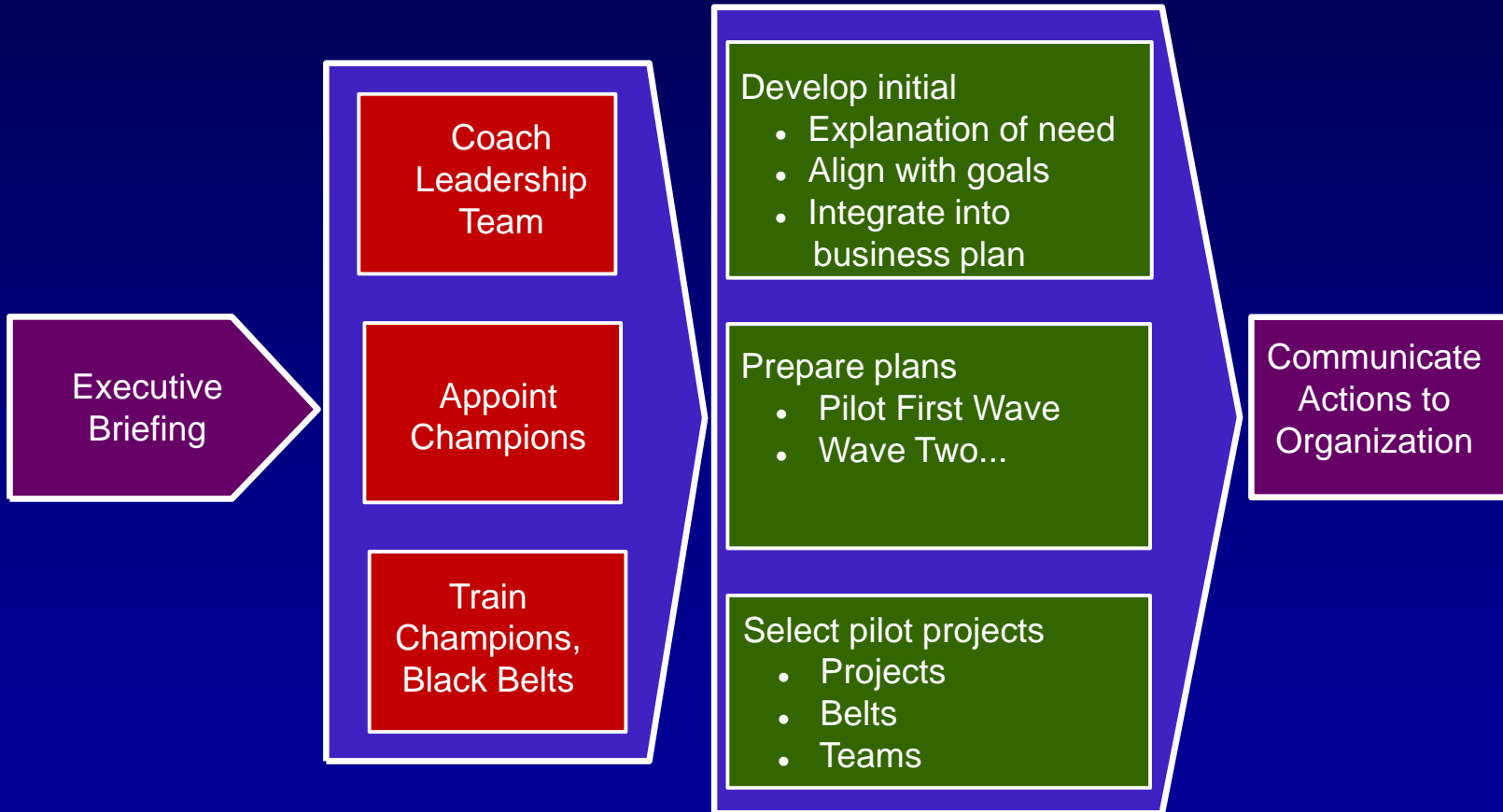
Establish accountability for meeting goals.

Discuss the following questions

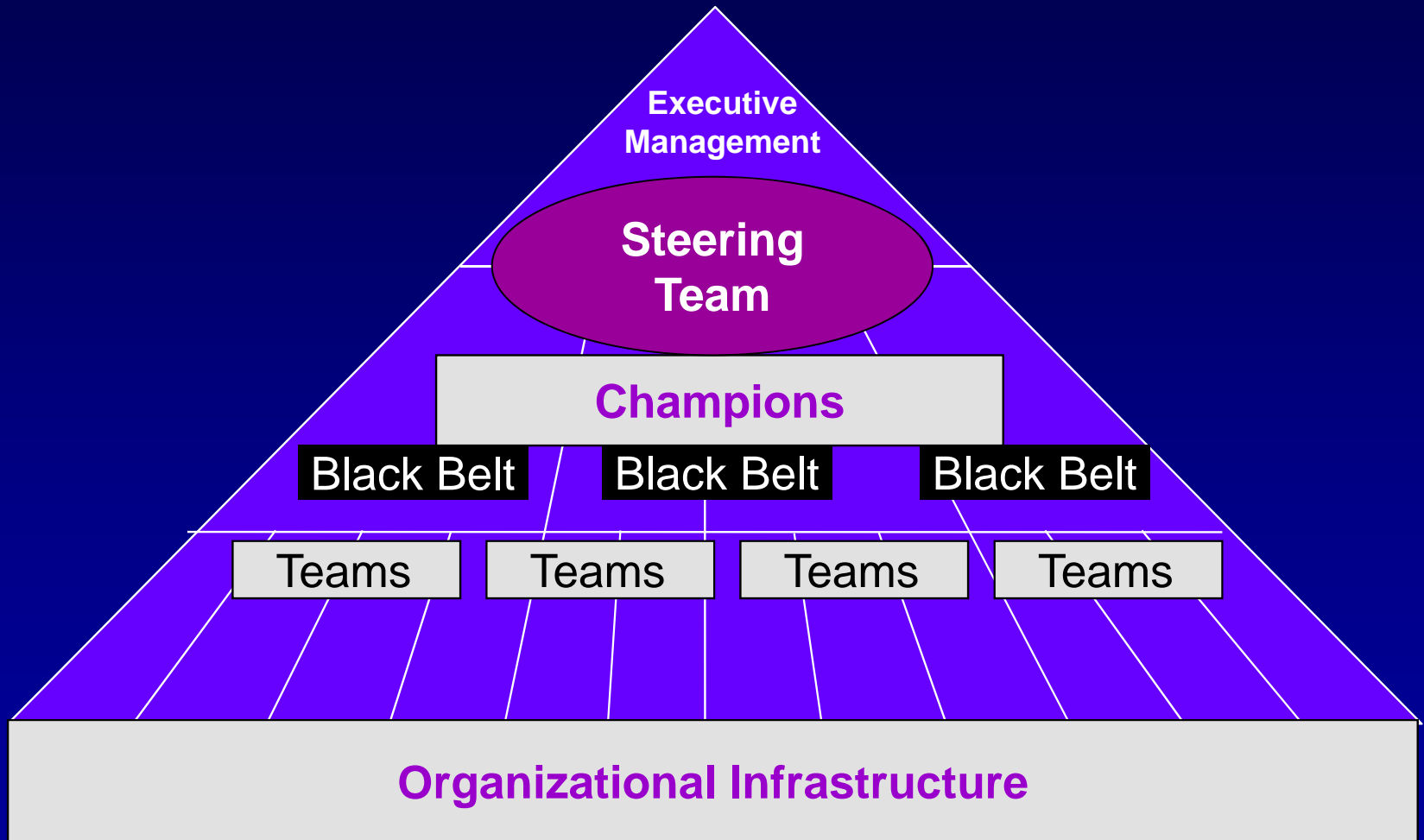
1. Why are you interested in pursuing Quality as a strategic initiative?
2. Do you plan to “do” Six Sigma projects or “be” a Six Sigma company?
3. What are the barriers that could impede a successful implementation?
4. What changes are needed in your organization to address and implement Quality company-wide?
5. What are some of the opportunities for Quality Improvement (specific) within your company and the expected results?

PREPARE PHASE



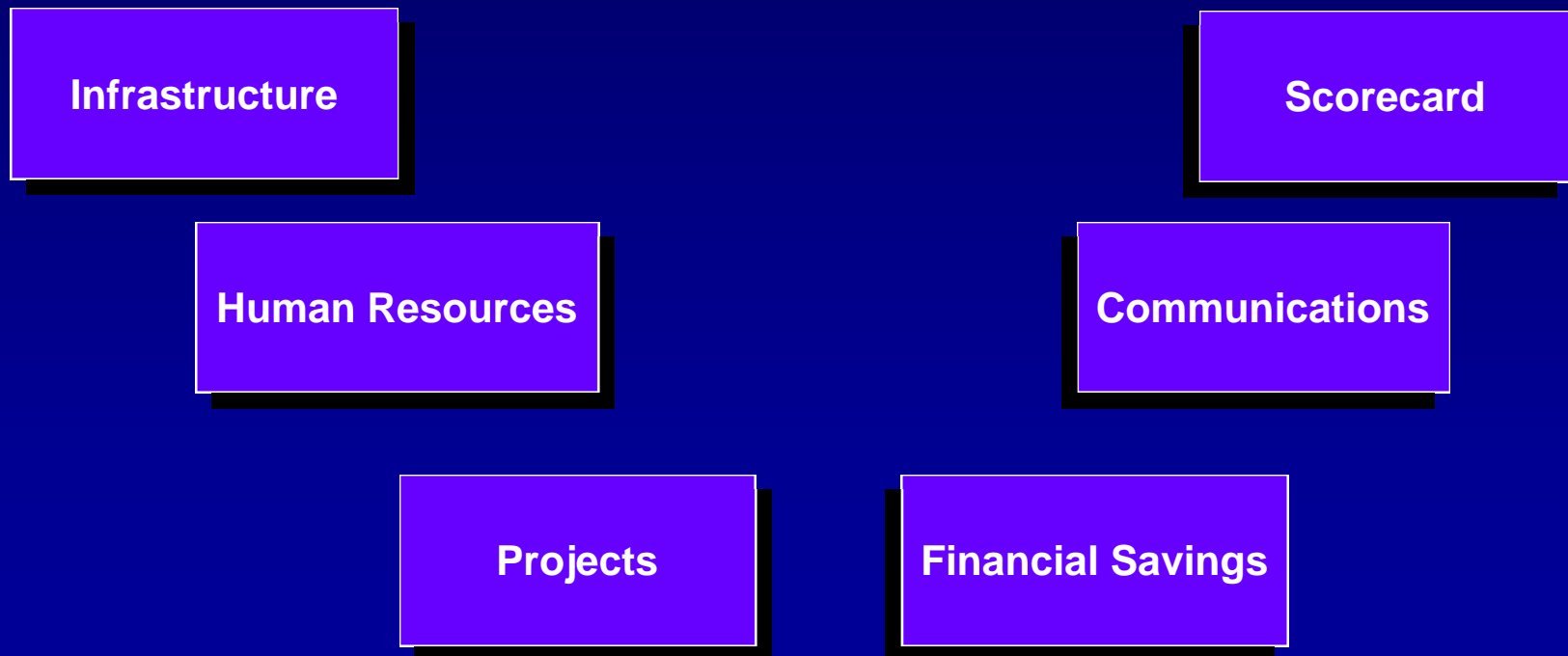


SIX SIGMA ORGANIZATION



SIX SIGMA IMPLEMENTATION

- Framework for Steering Committee to manage against:



KEY ROLES

- Senior Management Executive Leadership Team
- Champion / Project Sponsor
- Team Leaders / Black Belt / Green Belt
- Project Team Members—Yellow Belts, White Belts
- Facilitator / Master Black Belt

KEY ROLES OF EXECUTIVE MANAGEMENT

- **Set goals.** Identify the best opportunities to improve business performance and set strategic and annual goals for the organization. Establish accountability for meeting goals.
- **Establish infrastructure.** Establish/revise management systems for projects, organizational reporting and accountability, performance appraisal, reward and recognition.
- **Select projects and teams.** Select six sigma projects (and project missions) critical to meeting goals. Select the right project leader(s) and team members.
- **Support projects and monitor progress.** Enable teams to carry out their project mission(s). Provide the necessary training, resources, budget, time, and most importantly, management support. Monitor and keep projects on track.
- **Asking the right questions throughout D-M-A-I-C phases.**

ROLES OF SENIOR MANAGEMENT

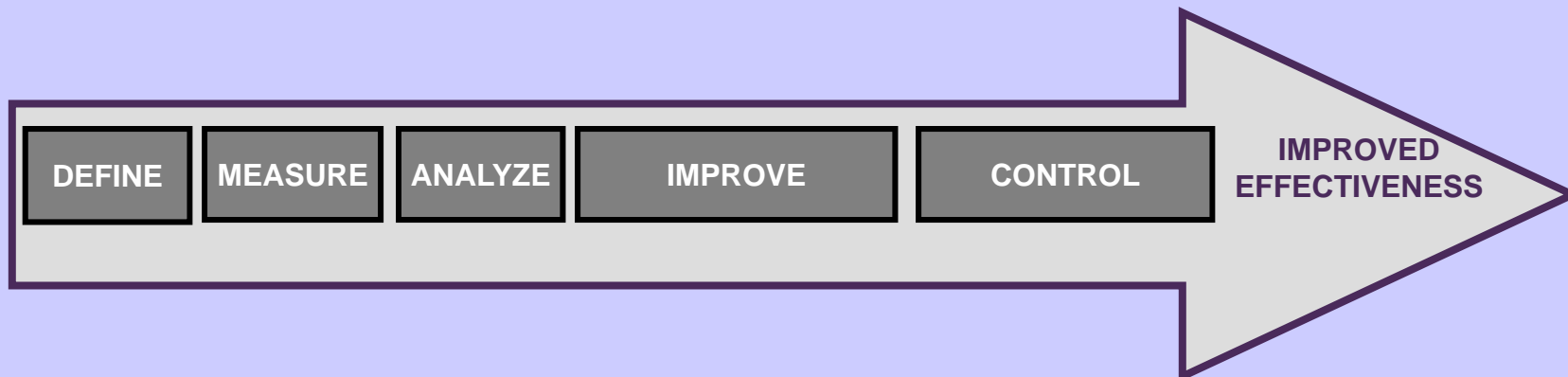
- Establish infrastructure to:
 - Nominate, screen, and select projects
 - Assign teams to projects
 - Encourage use of DMAIC
- Provide Resources
 - Time, training Champions and Black Belts
 - Progress review process
 - Revision of performance rating / review system
- Participates in Projects
 - Sets an example
 - Understands the realities
 - Tackles critical projects

Lean and Six Sigma

Lean = Dramatically improving process speed and elimination of the eight deadly wastes.



Six Sigma = Focused on eliminating chronic problems and reducing variation in processes.



LEAN TOOLS

▪ 5 S

- Value Stream Attribute Mapping
- Takt Time
- Cycle Time
- Demand Planning
- Level Loading
- Quick Changeovers
- Kaizen - Rapid Improvement Teams
- Kanban Pull System
- Continuous Process Flow
- Cell Design

SPECIFY VALUE

DETERMINE DEMAND

FLOW

LEVEL

PERFECTION

IMPROVED EFFICIENCY

COMMON TOOLS

- Project Selection
- Project Chartering
- Business Case
- QFD/VOC
- Team Skills

- Process Maps
- Data Collection
- Metrics, Graphs, RTY
- Brainstorming
- Pareto
- Cause-Effect Diagram & 5 Why's
- FMEA

- Mistake Proof
- Visual Controls
- Effective Equipment Maintenance

- SPC
- Standardized Work Procedures



DEFINE

MEASURE

ANALYZE

IMPROVE

CONTROL

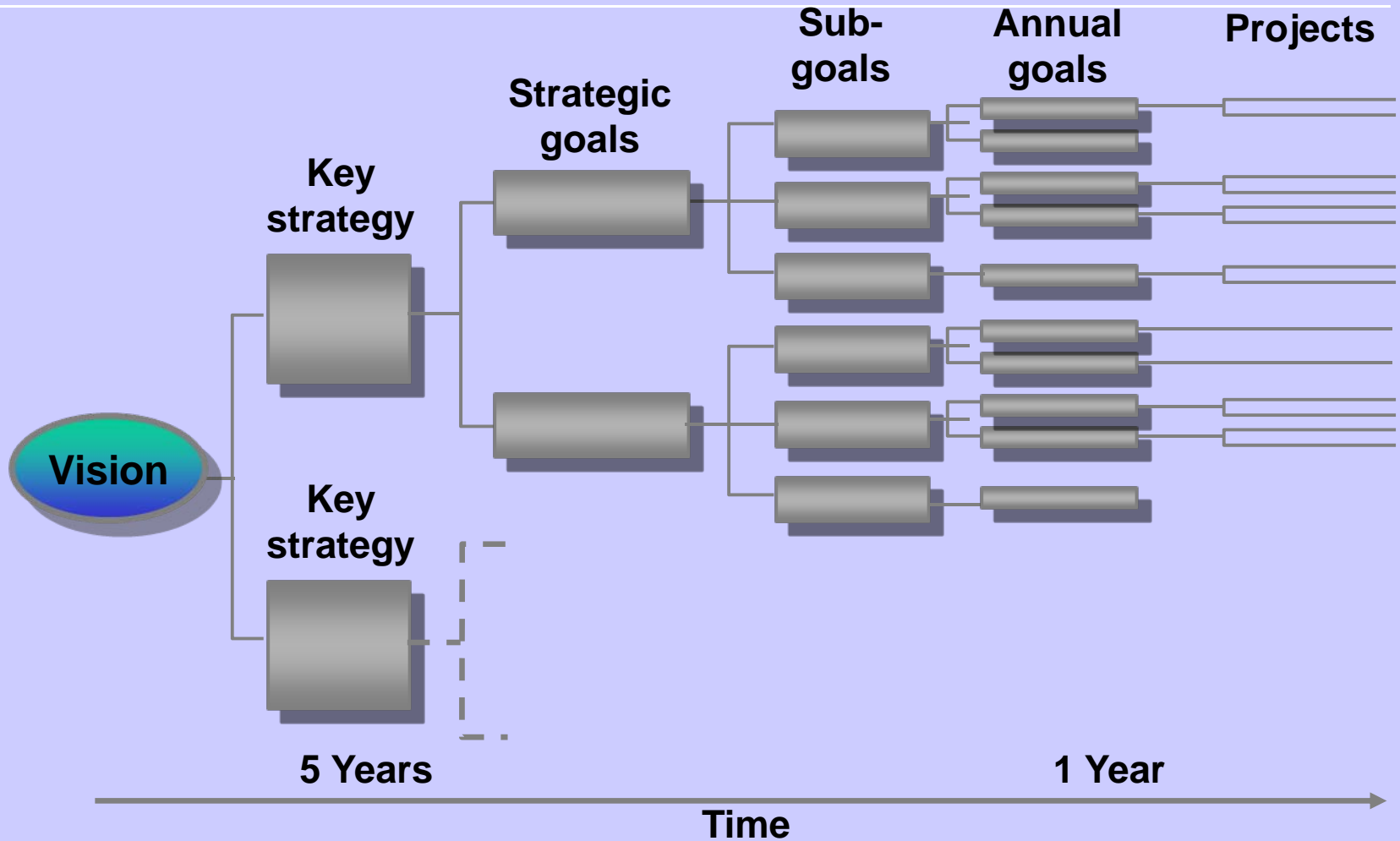
IMPROVED EFFECTIVENESS

SIX SIGMA TOOLS

▪ COPQ

- Basic Statistics
- Histograms
- Equipment R & R/MSA
- Scatter Plots
- Sigma Levels & DPMO
- Process Capability
- Yield Calculation
- Sampling Techniques
- Confidence Intervals
- Multi-Vari Correlation/Regression
- ANOVA
- Stratification
- Box Plots
- Hypothesis Testing
- DOE
- Simulation
- Remedy Selection Matrix
- Pre-Control
- Self-control
- PDSA

Strategic Deployment



HUMAN RESOURCE ISSUES

- Develop Profile for Key Roles
- Develop a Nomination, Evaluate and selection Process for People
 - Selection of Black Belts and Green Belts
 - ↗ Selection criteria
 - ↗ Determine active time for people working on projects
 - Succession Planning and Integration back into the organization
 - Backfilling Positions
- Compensation or Grade Levels Issues
 - Reward and Recognition
- Develop a Training Schedule

REWARD and RECOGNITION

MANAGEMENT

- Bonus directly tied to support of Six Sigma program and goals
- Assessed on ability to expand & sustain the Six Sigma program in their business unit
- Best practice sharing part of annual budgeting and planning process

BLACK BELTS

- Stock options and enhanced bonuses
- Visible status: e.g., private office
- Black Belt promotions to leadership positions

ESTIMATED FINANCIAL BENEFIT

- Why estimate benefits now?
 - Prioritize this opportunity among many
 - Focus and motivate team
- What are the criteria for benefits?
 - Directly linked to a project or group of projects (e.g., vs. market conditions)
 - Incremental
 - Auditable



Tasks for Upper Management

■ **Establish infrastructure.**

- Establish/revise management systems for projects, organizational reporting and accountability, performance appraisal, reward and recognition.

■ **Select projects and resources.**

- Select six sigma projects, write project mission statements critical to meeting goals.
- Select the right Black Belts and team members.

■ **Support projects and monitor progress.**

- Enable Black Belts to carry out their project mission(s).
- Provide the necessary training, resources, budget, time, and most importantly, management support.
- Monitor and keep projects on track.

EXERCISE: Prepare Phase

Exercise: Prepare Phase

Prepare a response for each question. Random selection will be used to discuss these questions with the total group for one hour.

- 1 When Six Sigma implementation begins in your organization, what specific projects will you select?
- 2 What will be the rationale for selecting these as projects rather than other opportunities?
- 3 What are the potential or actual benefits (financially and improvements) that can be expected when projects are completed?

LAUNCH PHASE





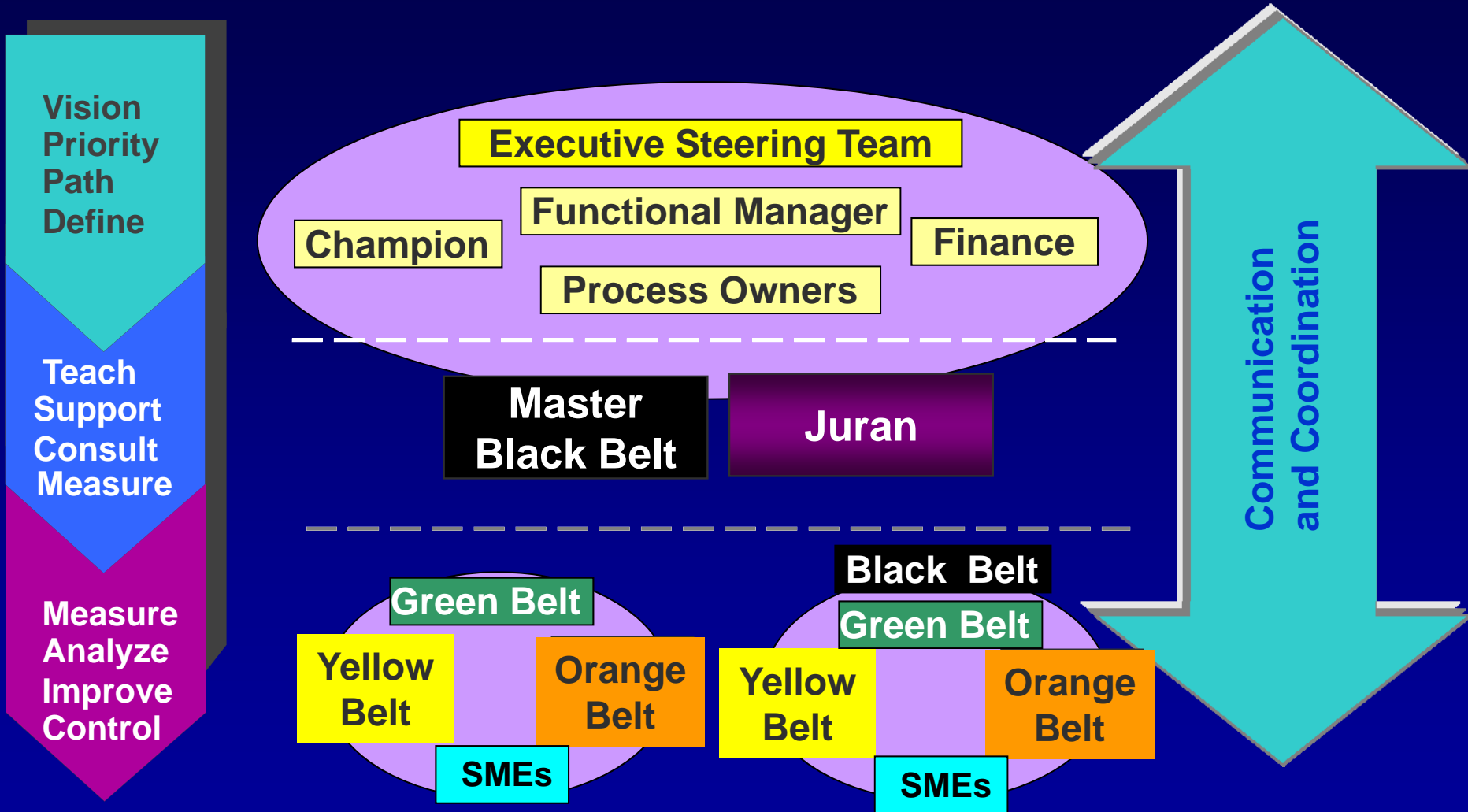
Conduct Wave 1 projects
Train Process Owners, Green Belts, and Black Belts

Build basic infrastructure

Communication Plan

- Successes
- Lessons learned
- Updated plans
- New techniques

IMPROVEMENT INFRASTRUCTURE



TEAMS AND BELTS

CHAMPION ROLE

- The role of a Champion is to:
 - Identify competent Black Belts
 - Identify improvement or design projects to meet strategic goals
 - Mentor and advise their peers on prioritizing, planning, and launching Six Sigma projects
 - Mentor and coach Black Belts
 - Remove organizational obstacles that may impede the work of the Black Belt and their teams
 - Provide approval and support to implement remedies to business processes
 - Provide recognition and reward to the Black Belts upon successful completion of their projects
 - Communicate with executive management and peers the progress and results associated with the Six Sigma efforts

BLACK BELT ROLE

Black Belts are managers or technical specialists assigned full responsibility to implement Six Sigma through a business unit/function/process. Black Belts will become viewed as “initiators” of Quality activity. Black Belts are on-site Six Sigma implementation experts with the ability to:

- Develop, coach, and lead cross-functional improvement teams;
- Mentor and advise management on prioritizing, planning, and launching Six Sigma projects; and
- Use, teach, and disseminate Six Sigma tools and methods to Green Belts and team members.

GREEN BELT ROLE

Green Belt

Green Belts are managers and professionals with sufficient knowledge to support Six Sigma implementation and to participate in Six Sigma projects as a team leader or a team member. They may be recruited to work on a project team.

Note that not all Six Sigma project team members need to be Green Belts, although some organizations work to train enough staff to ensure that “Green Belt” is a minimum requirement to work on a project team.

ROLES OF THE PROJECT TEAM MEMBER

- Attends all meetings
- Completes assignments between meetings
- Actively participates and contributes expertise
- Listens to other's ideas
- Uses Six Sigma Breakthrough DMAIC process to solve problems

ROLES OF THE MASTER BLACK BELT

- Trainer of Six Sigma tools and techniques
- Provides technical support and mentoring to Black Belts
- Facilitates multiple projects led by Black Belts
- Provides consulting assistance to Champions and Executive Management
- Acts as an internal consultant, trainer, and expert

What Is Your Role In Breakthrough Improvement ?

PURPOSE OF PROJECT REVIEW

Six Sigma Project Review Questions

PURPOSE OF MONTHLY REVIEWS

SAMPLE AGENDA FOR REVIEWS

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DEFINE REVIEW

Purpose

- Define Customers and their CTQs. Map the high level business process. Develop and refine project charter

Questions

- Who is the customer? Are there relevant customer segments? What data has been collected to understand the customer requirements?
- What is the business reasons for completing this project?
- What is the problem being addressed? Where, when, and to what extent does the problem occur? What are the boundaries of this project? What is the goal for the project? What are the key milestones?
- How was the high-level process map developed and validated? Is the process actually followed? Are multiple versions necessary to account for different types of input?
- Has someone else tried to solve this or a similar problem? What can we learn from them?

MEASURE REVIEW

Purpose

- To establish baseline performance for the current process
- Develop measures to enable the performance of the process to be improved

Questions

- What input, process, and output measures are critical to understanding the performance of this process?
- What are the definitions of defect, unit, and opportunity that you will use to calculate process sigma levels?
- What is your data collection plan? How much data did you collect? How did you sample?
- What have you done to assure the reliability and validity of the measurement process?
- How have you graphically displayed the collected data?
- What are the current process sigma and the sigma goal for this project?

ANALYZE REVIEW

Purpose

To examine the data and process to determine root causes and opportunities for improvement.

Questions

- How were potential causes identified?
- How were the key factors identified? How were they verified?
- What are the root causes of the problem? How did you draw that conclusion?
- What did you learn from analyzing your detailed process map? What are the critical moments of truth? How much time does it take to complete each step? Which steps are nonvalue adds?
- What was your approach to analyzing your data? Why?
- How has the data been analyzed to identify the root causes of process variation? How was the data stratified? Did you use the cause-effect? Did you consider running experiments?
- What is the financial opportunity represented by addressing the problem? What is the impact on customer satisfaction, loyalty, and retention?
- What are the revisions to the charter?

IMPROVE REVIEW

Purpose

To generate, select, design, test, and implement improvements

Questions

- How did you generate alternative solutions?
- What criteria did you use to evaluate the potential solutions?
- What is your “should be” process map?
- How does the solution address the root cause of the problem?
- Was the solution tested on a small scale? What was learned in the test?
- How will you manage the cultural aspects needed for successful change?
Has support been mobilized?
- What is the implementation plan? How will I know if the plan has been followed?
- What are the potential problems? Do you have a backup plan when things go wrong?
- Can you explain your cost-benefit analysis including the assumptions made?

CONTROL REVIEW

Purpose

To maintain the improvement.

Questions

- What changes need to be made to rewards, training, structure, measurements, and communication, to successfully implement and maintain the desired change?
- What is the new sigma value for the improved process?
- What is in place to ensure that the problem doesn't return?
- What is being measured? What evidence is there that the process is in control? Are control charts in use?
- Has the process been standardized? Does everyone know the standard process? Is training needed? Has training been delivered?
- What is the response plan for "out of control" indications?
- Are there other areas of the business that can benefit or replicate this project or parts of this project?
- What is the next problem to be addressed in this process?



Tasks for Upper Management

■ Support Wave

- Training: Black Belts
- Support: Management
- Time: 50% - 100%
- Resources: Process Owners
- Steering Committee Reviews

■ Initiate infrastructure for Six Sigma

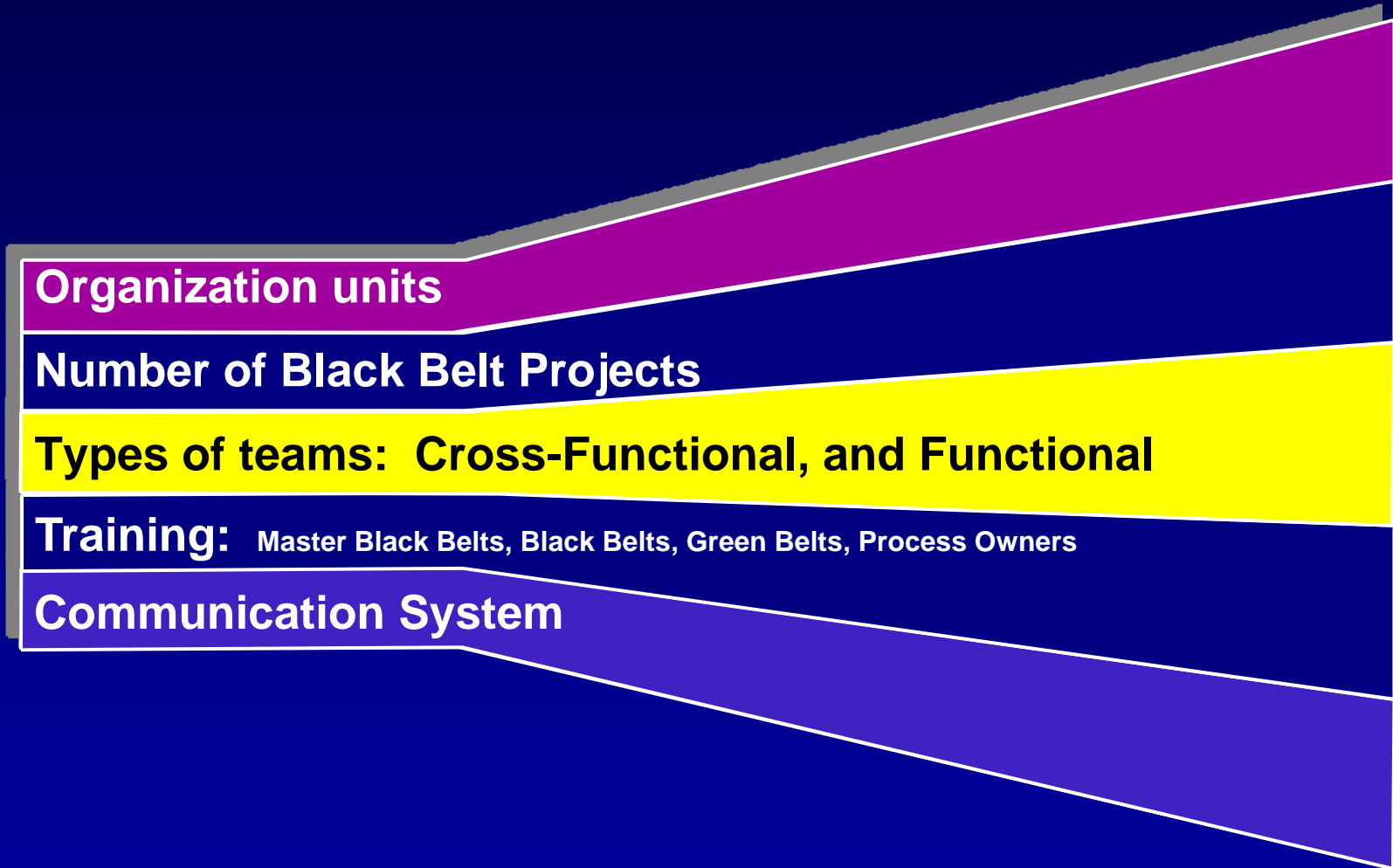
- Project process
- Reward/recognition
- Select Master Black Belt(s)
- Training for Process Owners/Champions, Green Belts
- Resources: Champions
- Publicity & communication

■ Establish Measurement Systems

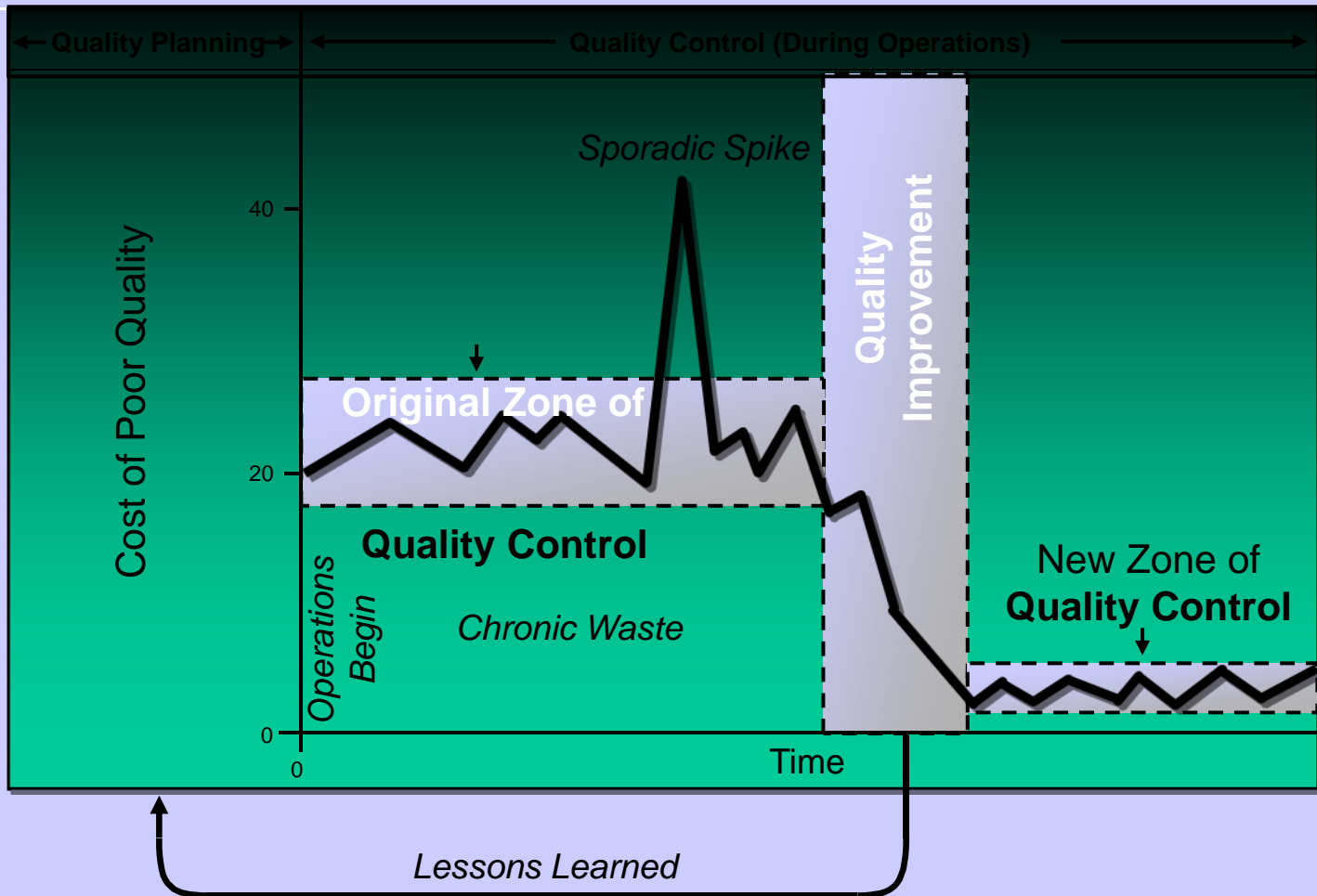
- Sigma Metrics
 - Sigma Level
 - C_p and C_{pk}
- Cost of poor quality
- Market standing
- Organizational culture
- Quality systems

EXPAND PHASE

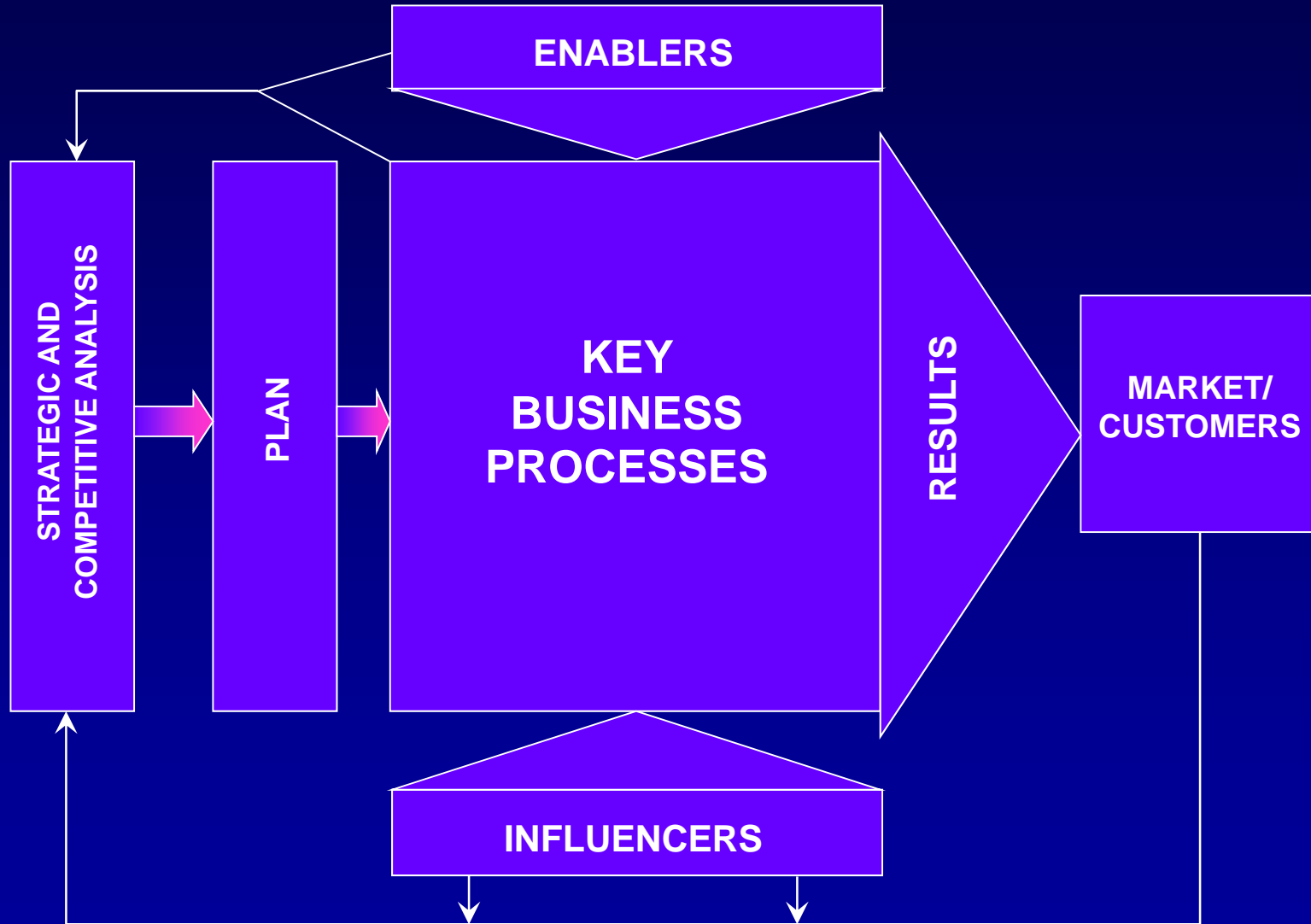




The Juran Trilogy®



ORGANIZATIONAL PROFILE

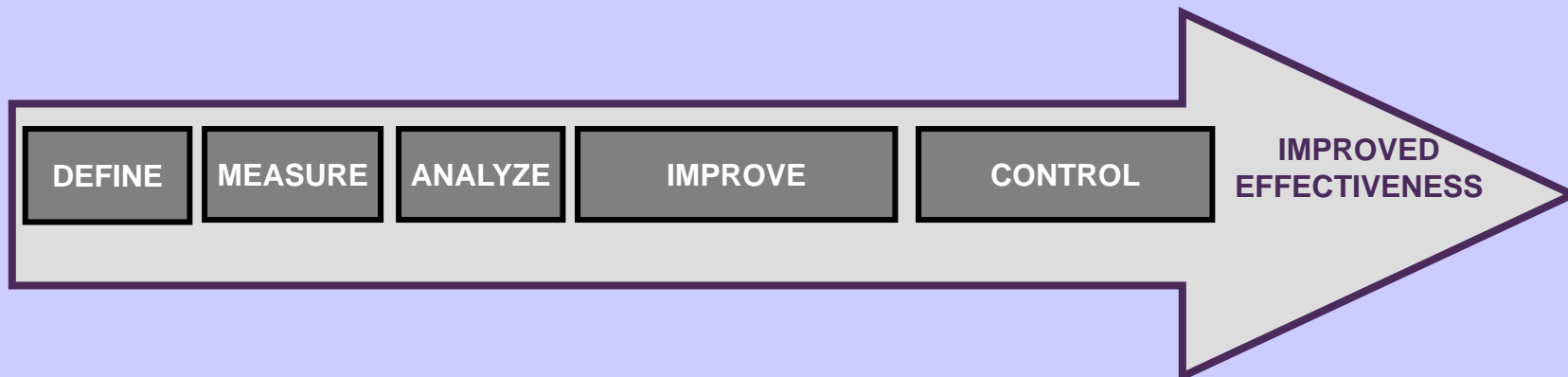


Lean and Six Sigma

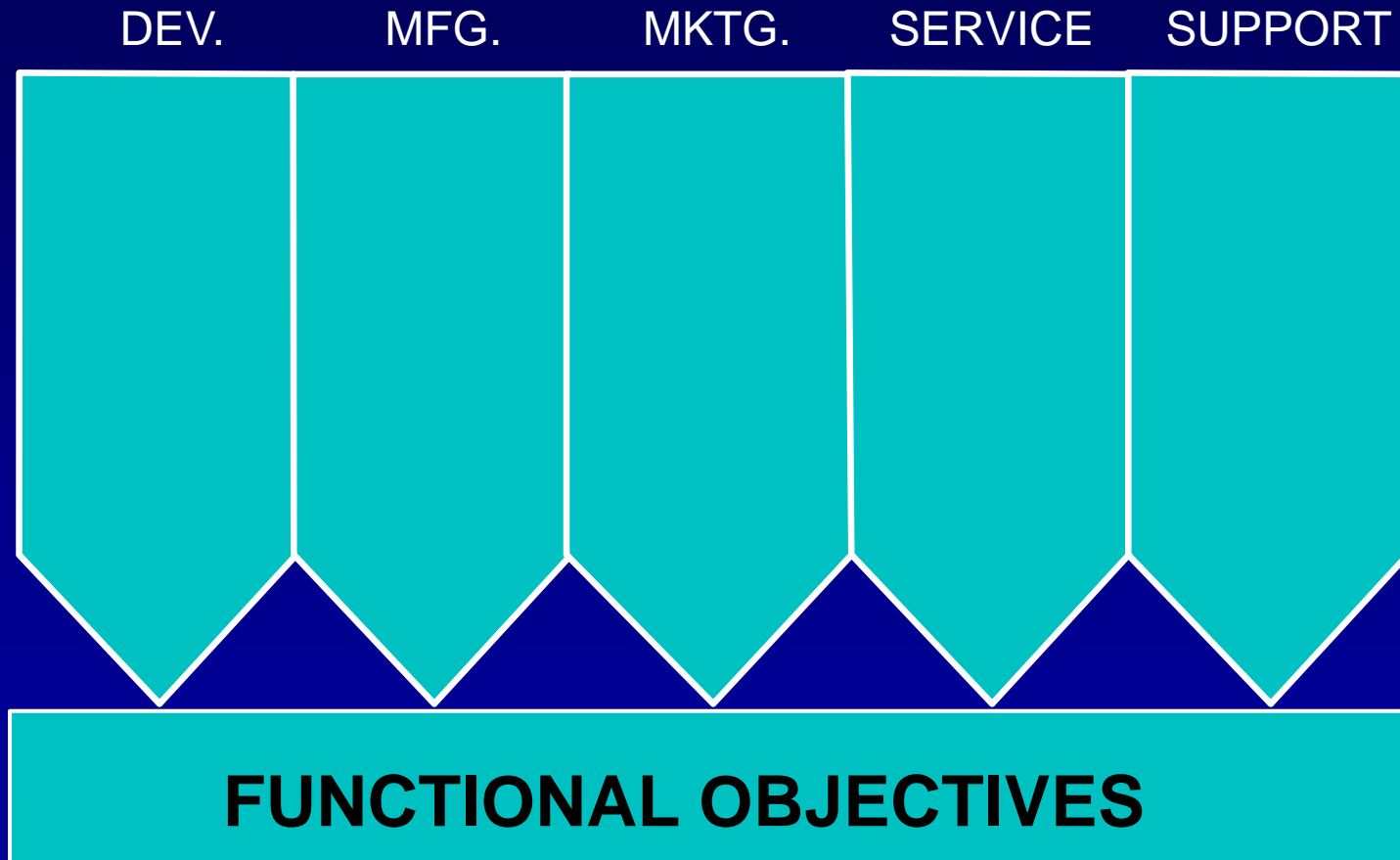
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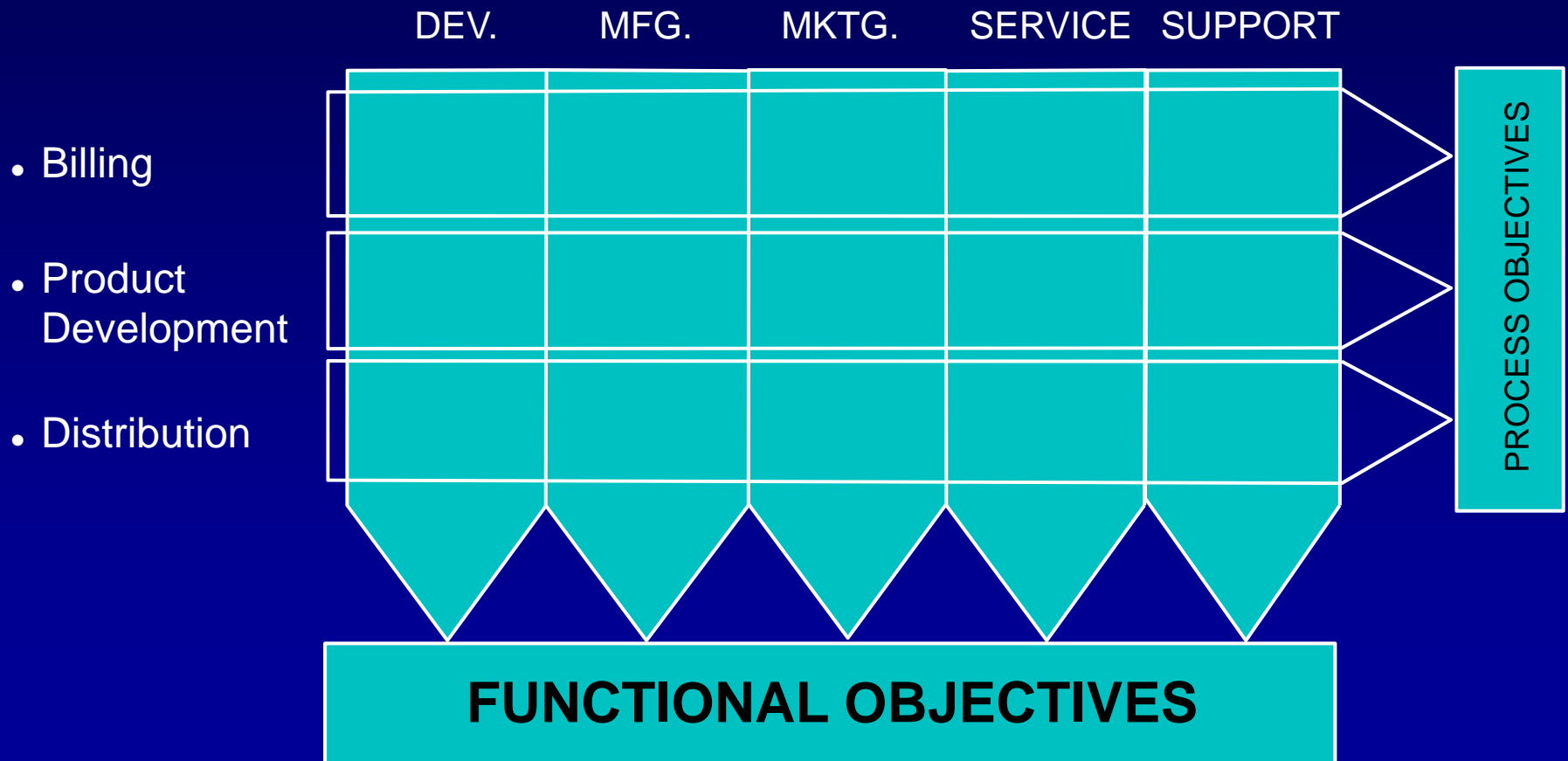
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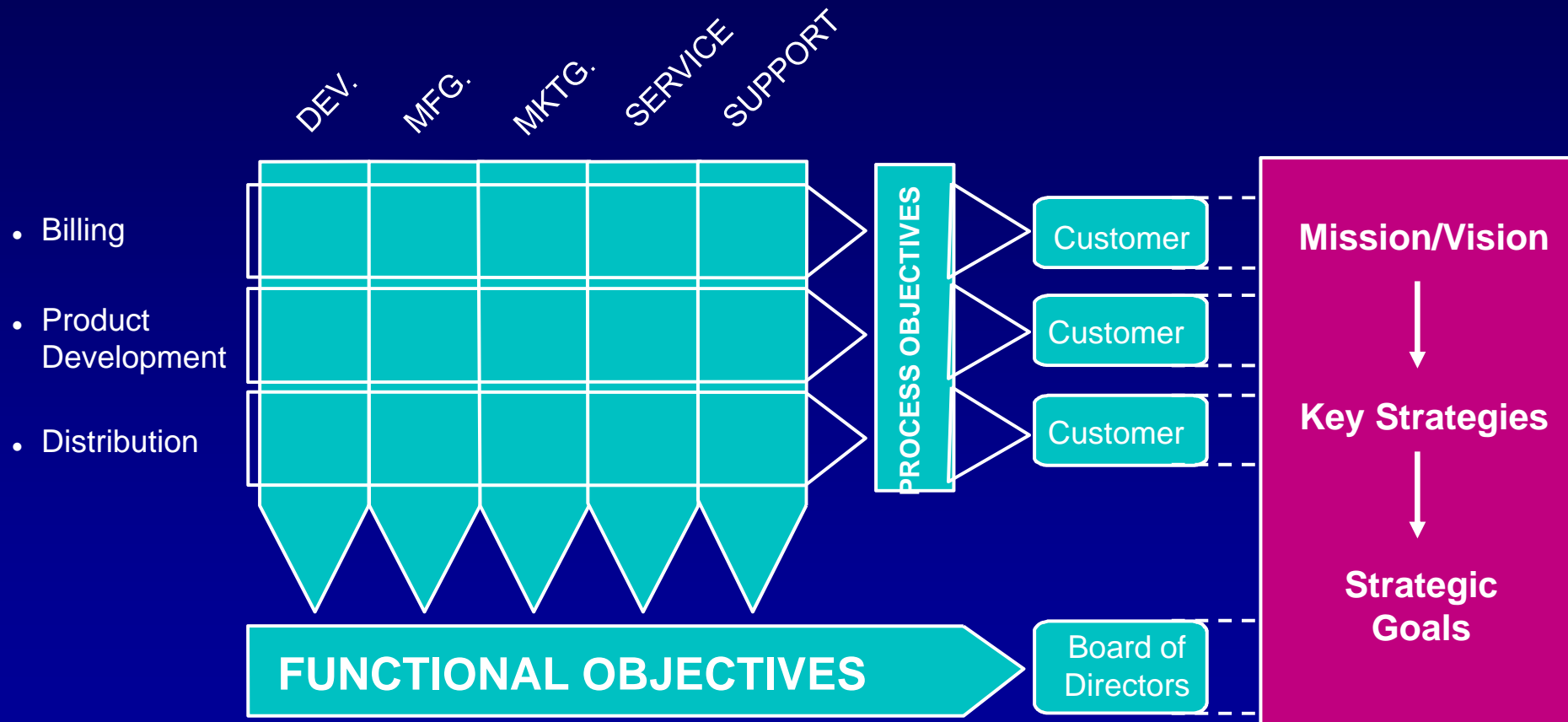
FUNCTIONAL MANAGEMENT SYSTEM



FUNCTIONAL VS. PROCESS MANAGEMENT SYSTEM



FUNCTIONAL VS. PROCESS MANAGEMENT SYSTEM



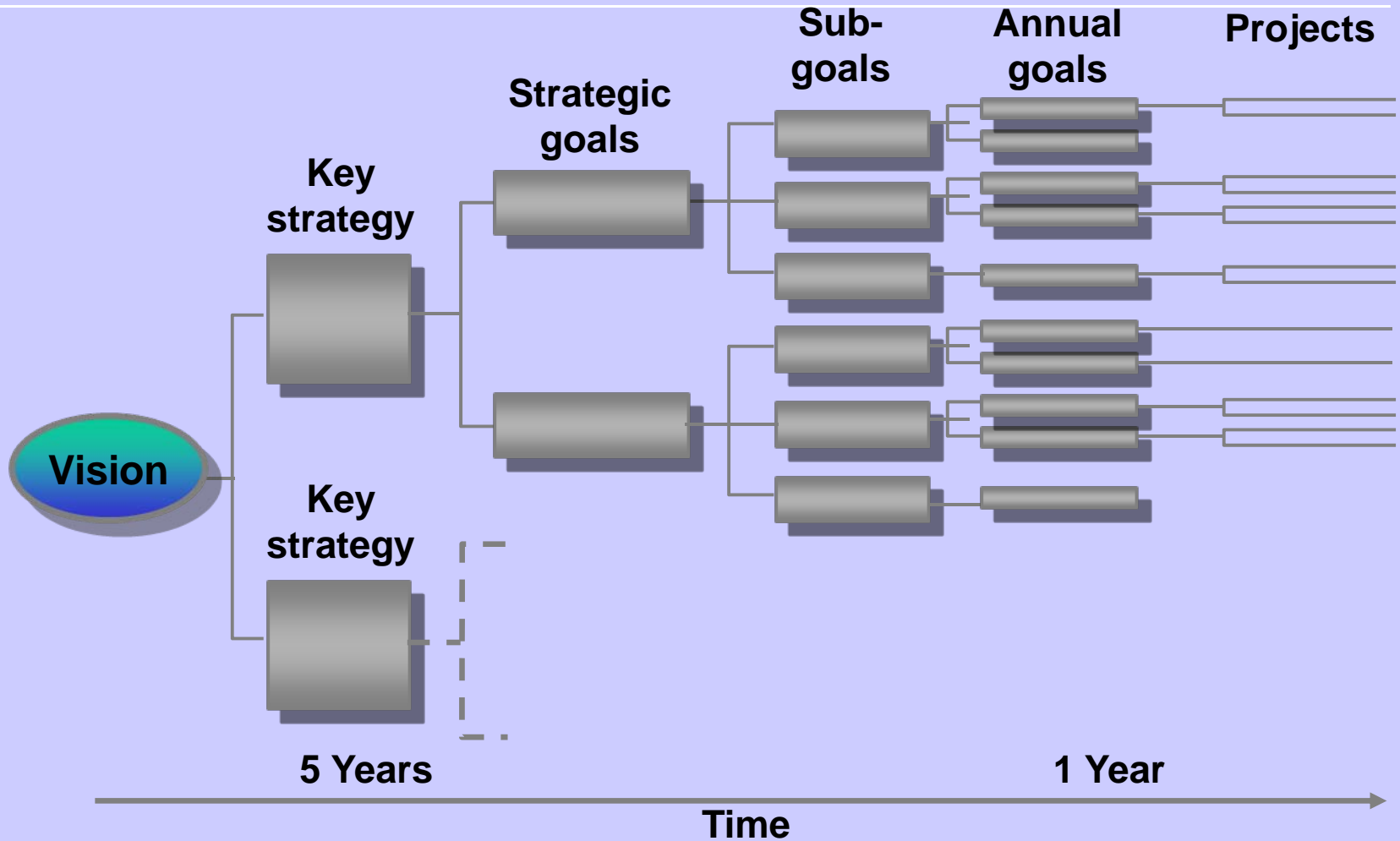


Tasks for Upper Management

- Support infrastructure
- Expand to Wave 2, Wave 3, Wave etc.
- Expansion of type of projects
- Participate in training and Six Sigma projects
- Create a “Data-Driven” Culture
- Identify benchmarking opportunities
- Create Reward and Recognition System

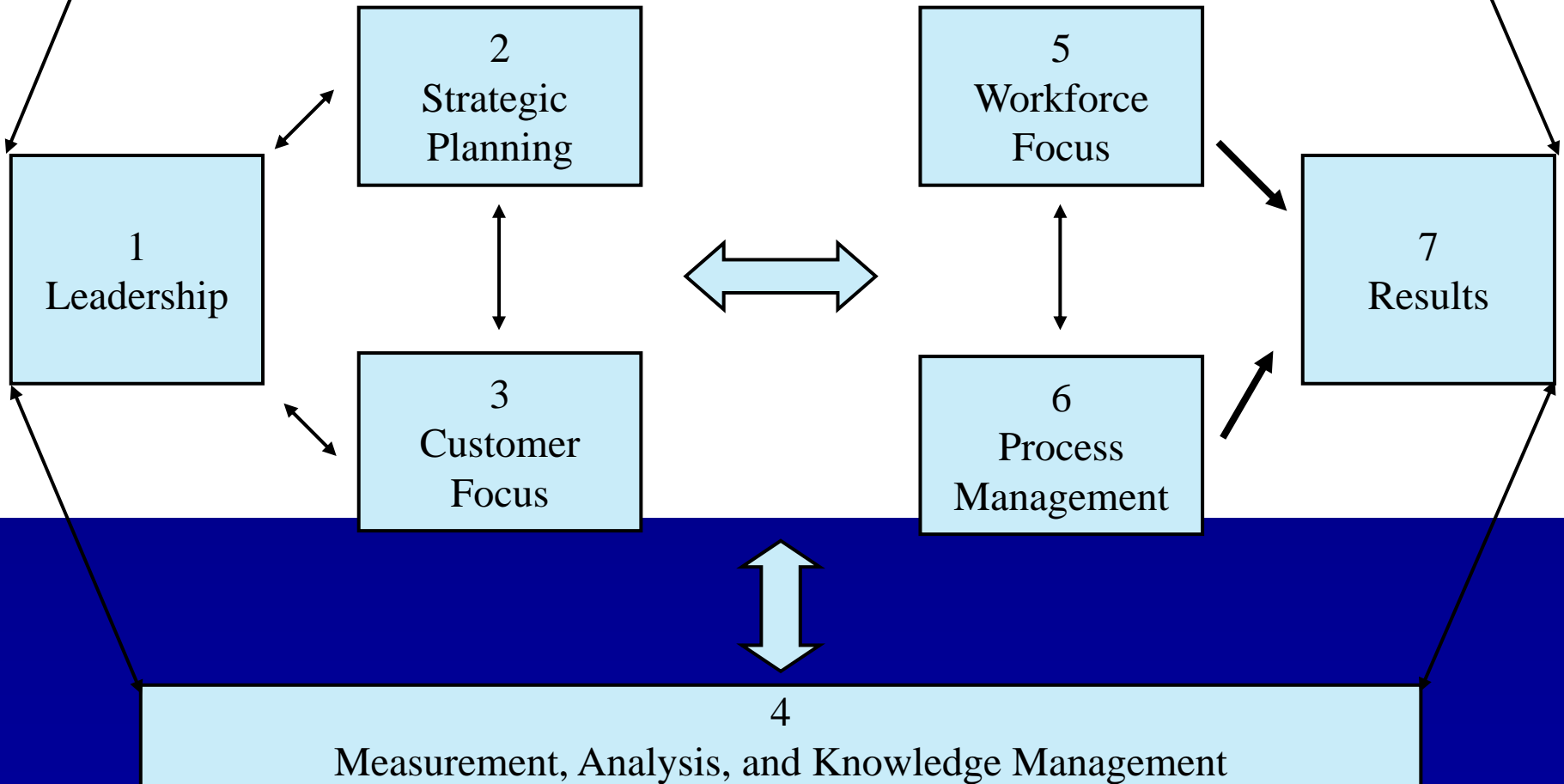


Strategic Deployment



Baldrige Framework

Organization Profile:
Environment, Relationships, and Challenges





Tasks for Upper Management

- Integrate Quality goals into the Strategic plan, business plan, bonus plans and annual employee performance plans
- Personally conduct critical audits and reviews
- Track Financial Results as Part of the Balanced Scorecard
- Deploy the Quality Management System to all Functions and Business Units