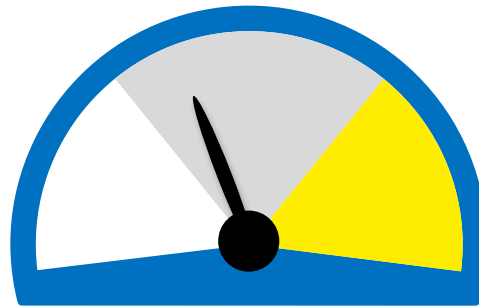
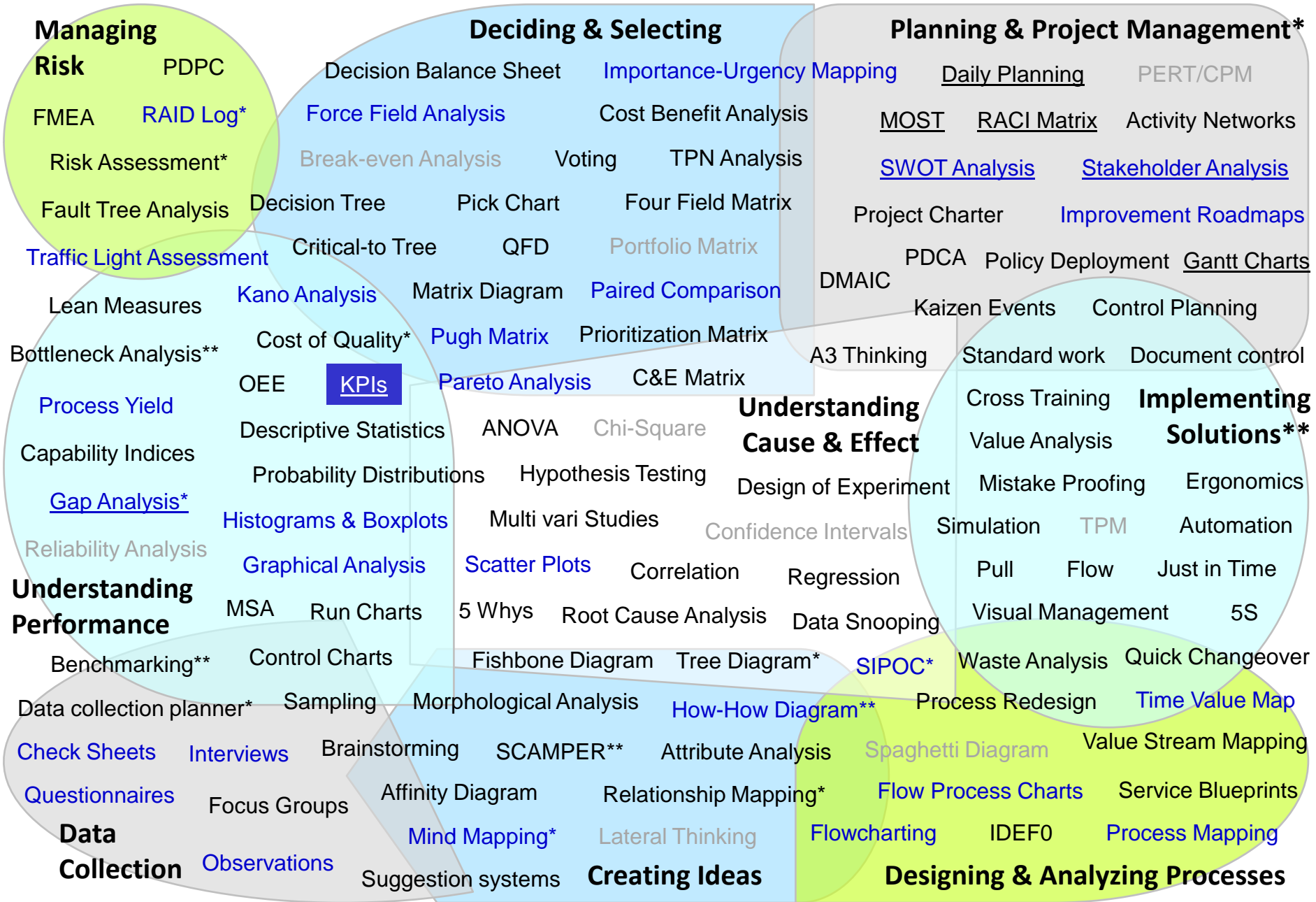


# Continuous Improvement Toolkit

## **KPIs** (Key Performance Indicators)



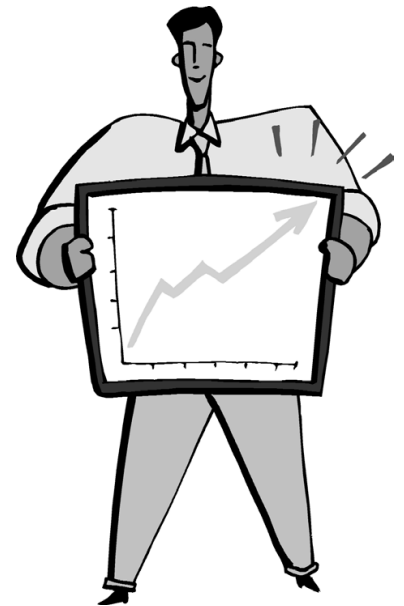
# The Continuous Improvement Map



# - KPIs

## Performance Management:

- ❑ An approach used to manage performance of an organization.
- ❑ It plays an important role in the success or failure of a business.
- ❑ **It is applied to measure the performance of:**
  - An organization.
  - A business unit.
  - A single department.
  - A project.
  - A process that builds a product or service.
  - An employee.



# - KPIs

## Performance Management:

### □ It includes activities such as:

- Planning and setting expectations.
- Developing the capacity to perform.
- Continually monitoring performance.
- Periodically rating performance in a summary fashion.
- Rewarding good performance.



# - KPIs

## Performance Indicators:

- ❑ Measurements that define and assess the performance of an organization, department, employee, etc..
- ❑ Objectives to be targeted in order to add the most value to a business.
- ❑ Choosing the right performance indicators relies upon a good understanding of what is important to the business.



# - KPIs

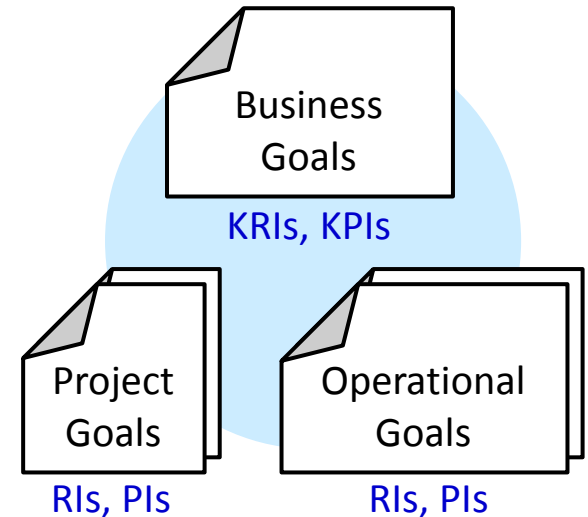
## Two Types:

### ❑ Result oriented indicators:

- Focus on the key outputs of a process.
- Related to the critical success factors.
- **Examples:** *customer complaints* and *return on investment (ROI)*.

### ❑ Process oriented indicators:

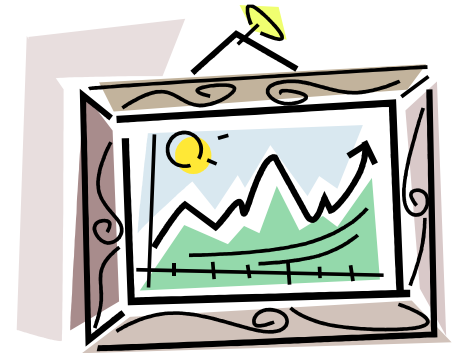
- Focus on the inputs to a process.
- **Examples:** *time to process customer order* and *late deliveries*.



# - KPIs

## Performance Indicators are Used to:

- ❑ Help organizations to understand their performance levels.
- ❑ Help setting realistic performance goals.
- ❑ Help aligning daily work to strategic goals.
- ❑ Help monitoring progress on a real-time basis.
- ❑ Help understanding the weaknesses and establishing improvement priorities.
- ❑ Determine whether an improvement is being made and maintained.
- ❑ Help benchmark internally and externally.
- ❑ Identify if staff are doing well and to help them if they are not.
- ❑ Provide a basis for recognizing team and individual performance.



# - KPIs

## Selecting the Proper Performance Indicators:

- ❑ Performance indicators should be developed based on:
  - Critical Success Factors (CSFs).
  - Voice of the Customer (VOC).

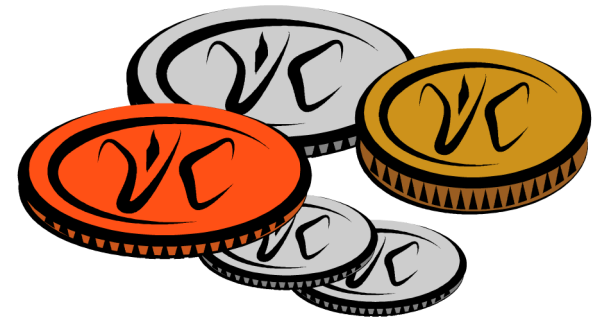




# - KPIs

## Critical Success Factors:

- ❑ Elements that are necessary for a strategy to be successful.
- ❑ CSFs selection is a very subjective exercise.
- ❑ **Examples of CSFs are:**
  - Delivery on-time and in-full.
  - Providing superior customer service.
  - Short time to market new products.
  - Management commitment.



# - KPIs

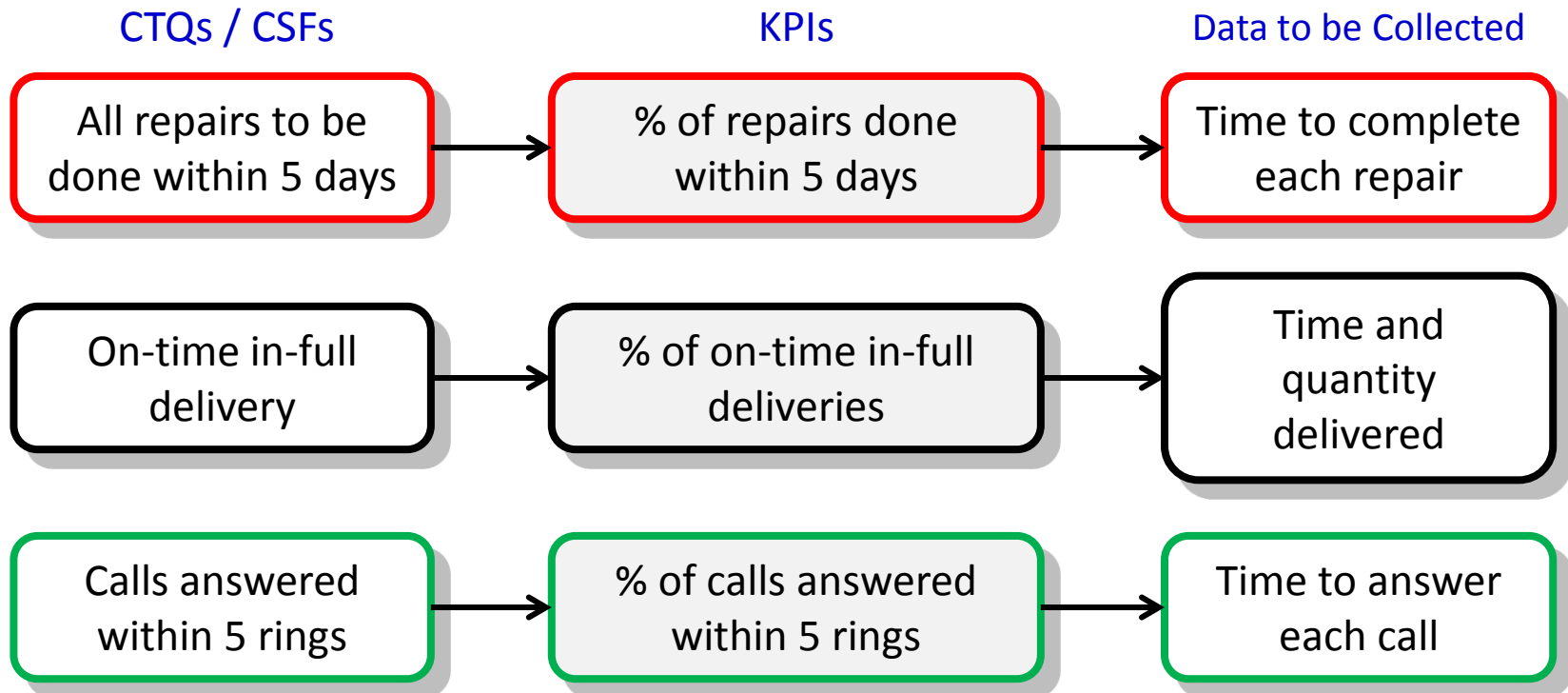
## Voice of the Customer:

- ❑ Performance indicators should reflect the Voice of the Customer.
- ❑ The **Critical-to-Quality characteristics (CTQs)** features of your customer should be then used as the basis to select your KPIs.
- ❑ Raw data needs to be collected from customers.



# - KPIs

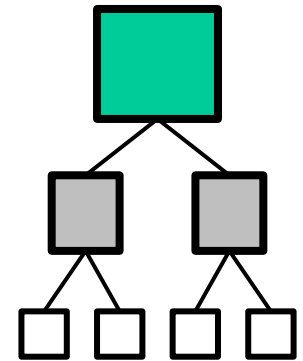
## Example - Selecting the Proper Performance Indicators:



# - KPIs

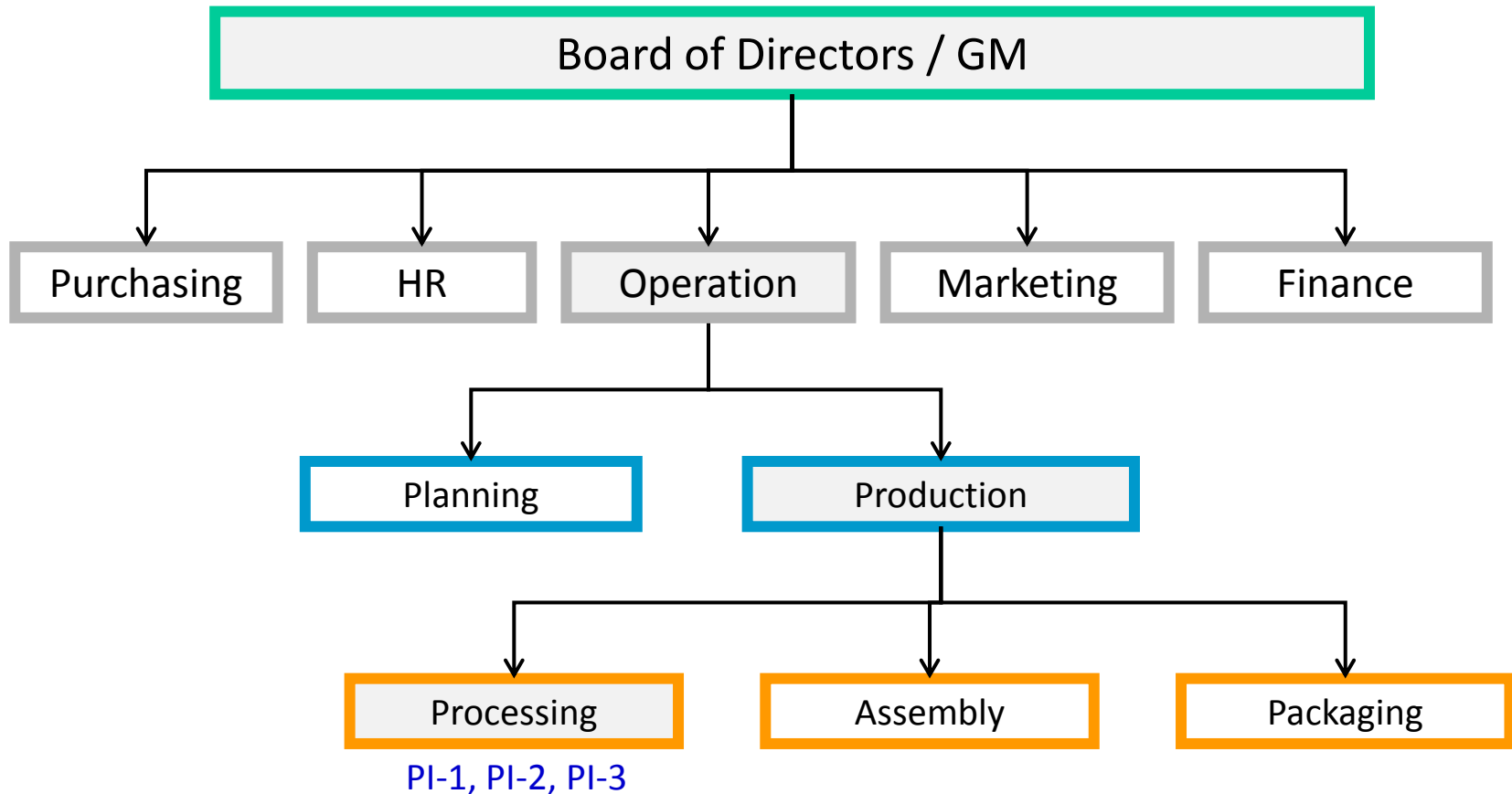
## KPI Tree:

- ❑ A visual method of displaying measures:
  - In an organization.
  - Related to a project.
- ❑ Brings all measures together.
- ❑ Provides a visual representation for which measures contribute to other measures.
- ❑ Helps aligning work with the organization strategy.



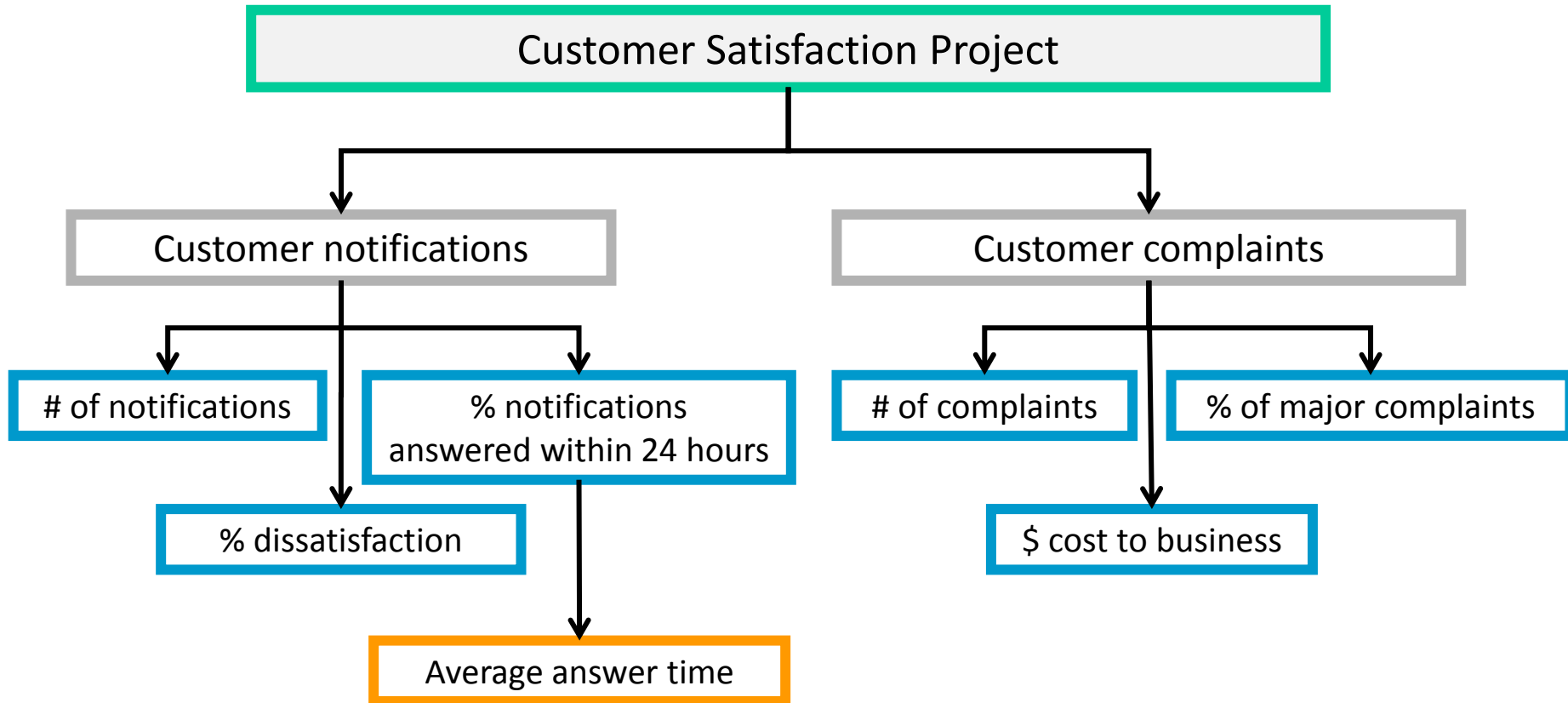
# - KPIs

KPI Tree:



# - KPIs

## KPI Tree Example:



# - KPIs

## KPI Tree:

- ❑ A successful KPI tree is the one that contains a **balance** of measures covering efficiency, effectiveness, quality, delivery and cost.
- ❑ **Effectiveness performance indicators** measure processes in the eyes of the customer.
- ❑ **Efficiency performance indicators** measure processes from business perspective.
  - Are of interest of internal customers.
  - Have close links with the 8 Wastes.



# - KPIs

## Characteristics of Effective Performance Indicators:

- ❑ Reflect the Voice of the Customer.
- ❑ Relate to critical success factors.
- ❑ Are agreed with and owned by the areas themselves.
- ❑ Are well defined and understood by all.
- ❑ Are measured regularly and consistently.
- ❑ Enable open and transparent communication.
- ❑ Are acted upon by the senior management.
- ❑ Are used for continuous improvement.





# - KPIs

## Balanced Scorecard:

- ❑ A common way to manage and monitor performance indicators.
- ❑ A report that displays a collection of performance indicators.
- ❑ It has evolved from a simple performance measurement framework to a full strategic planning and management system.
- ❑ It helps monitor performance against strategic goals.



The Four-Perspectives Balanced Scorecard

# - KPIs

## Performance Dashboards:

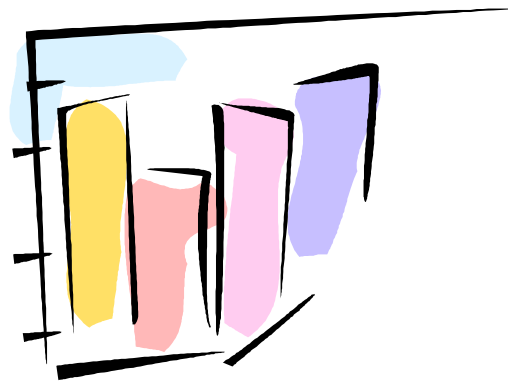
- ❑ A series of graphics, charts and other visual tools that can be easily interpreted and analyzed.
- ❑ Easily monitor the performance in an organization.
- ❑ They allow to see if the performance indicators are being met based on the goals in place.
- ❑ If not, they will visually alert that corrective actions should be made.
- ❑ They are typically limited to show summaries, comparisons and trends.



# - KPIs

## A Good Dashboard:

- ❑ Is simple and easy to understand.
- ❑ Conveys important information at a glance.
- ❑ Contains minimal distractions and visually appealing.
- ❑ Displays real-time information.
- ❑ Should be displayed on the shop floor using a screen or a bulletin boards.



# - KPIs

## Examples of Performance Indicators:

Manufacturing / Production	Purchasing and Inventory	Sales, Marketing and Shipping
<ul style="list-style-type: none"><li>• Spoilage / Rejection Rate</li><li>• Re-work Rate</li><li>• Time Spent on Product Re-work</li><li>• Total Units Manufactured</li><li>• Units per Day</li><li>• Units Per Labor Hour</li><li>• Line Efficiency</li><li>• Production Capacity</li><li>• Capacity Utilization</li><li>• First Time Right Ratio</li><li>• Rolled Throughput Yield (RTY)</li><li>• Average Change Over Time</li><li>• Material Usage</li></ul>	<ul style="list-style-type: none"><li>• Cancelled Purchase Requests</li><li>• Purchase Orders Completed</li><li>• Purchase Order Cycle Time</li><li>• Emergency Purchase Rate</li><li>• Rejected Receipt Rate</li><li>• Late Deliveries from Suppliers</li><li>• Changes in Approved Suppliers</li><li>• Unloading Time</li><li>• Stock Level</li><li>• Inventory Days Coverage</li><li>• Re-work on Procured Inventory</li></ul>	<ul style="list-style-type: none"><li>• Time to Process Customer Orders</li><li>• Time to Resolve Customer Claims</li><li>• Visits to Key Customers</li><li>• New Customers Rate</li><li>• Customer Retention Rate</li><li>• Sales Forecast Accuracy</li><li>• Market Share Growth</li><li>• Marketing Expenses</li><li>• Product Availability</li><li>• Loading Time</li><li>• Not On-Time In-Full (NOTIF)</li></ul>

# - KPIs

## Examples of Performance Indicators:

Finance and Accounting	Maintenance	Human Resources
<ul style="list-style-type: none"><li>• Net Profit Margin</li><li>• Cost of Goods Sold</li><li>• Operating Income</li><li>• Cost per Unit</li><li>• Working Capital</li><li>• Accounts Receivable Turnover</li><li>• Inventory Turnover Ratio</li><li>• Return on Investment (ROI)</li><li>• Budget Variance</li><li>• Capital Expenditure (CAPEX)</li><li>• Monthly Department Expenses</li></ul>	<ul style="list-style-type: none"><li>• Response Time to Breakdown</li><li>• Mean Time Between Failures</li><li>• Mean Time to Repair</li><li>• Spare Parts Inventory Turnover</li><li>• Work Orders Completed</li><li>• Preventive Maintenance Completed</li><li>• Repair Cost</li><li>• Repair Cost per Unit</li><li>• Maintenance / Repair Downtime</li></ul>	<ul style="list-style-type: none"><li>• Staff Turnover Ratio</li><li>• Employee Satisfaction Index</li><li>• Exit Interview Satisfaction Rate</li><li>• Internal Promotion Rate</li><li>• Labor Utilization Rate</li><li>• High Performing Employees</li><li>• Training Hours Ratio</li><li>• Training Attendance Ratio</li><li>• Absenteeism Rate</li><li>• Part-Time Employees</li><li>• Disabled Staff Ratio</li></ul>

# - KPIs

## Examples of Performance Indicators:

Health, Safety and Env.	Quality	Lean
<ul style="list-style-type: none"><li>• Recorded Safety Observations</li><li>• Workplace Inspection Audits</li><li>• Risk Assessments Implemented</li><li>• Lost Work Days</li><li>• Significant Injury Cases</li><li>• Near Miss Cases</li><li>• First Aid Treatment Cases</li><li>• Environmental Incidents</li><li>• Safety Circles Conducted</li><li>• Satisfaction with Ergonomics</li><li>• EHS Training Hours</li></ul>	<ul style="list-style-type: none"><li>• Customer Complaints</li><li>• Returns from Key Customers</li><li>• Customer Satisfaction Index</li><li>• Customer Surveys Conducted</li><li>• Defects at Customer Site</li><li>• Defects per Million Opportunities</li><li>• Defects per Unit</li><li>• Cost of Non Quality</li><li>• Quality Personnel to Total Personnel</li><li>• Quality Circles Conducted</li><li>• Audits Performed on Schedule</li></ul>	<ul style="list-style-type: none"><li>• Value Added Time</li><li>• Takt Time</li><li>• Operator / Machine Cycle Time</li><li>• Order Processing Cycle Time</li><li>• Net Available Time</li><li>• Work in Process Time</li><li>• Value Stream Ratio</li><li>• Process Cycle Efficiency</li><li>• Uptime Ratio</li><li>• Overall Equipment Effectiveness</li><li>• Muda-Free Cost</li></ul>

# - KPIs

## KPIs and Continuous Improvement:

❑ KPIs are key to the continuous improvement process.

❑ **Examples:**

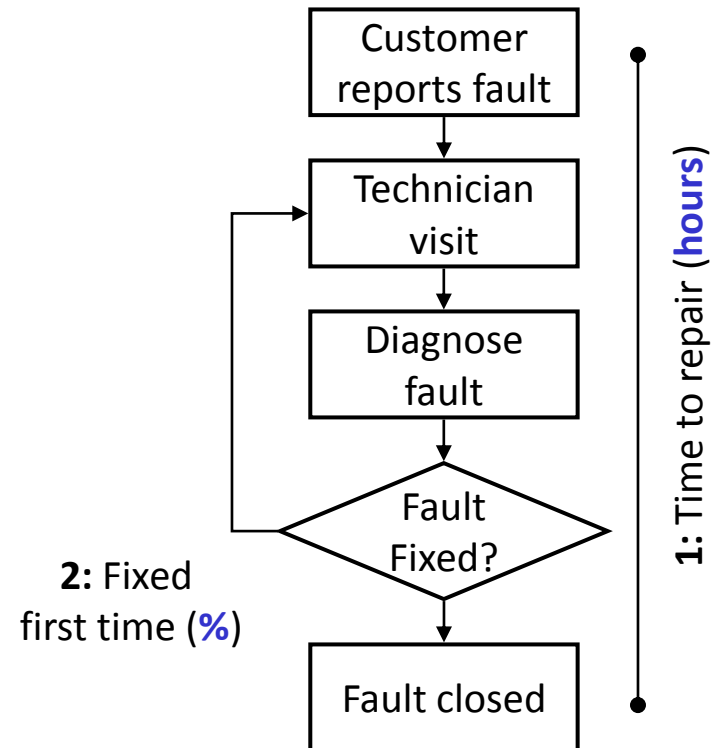
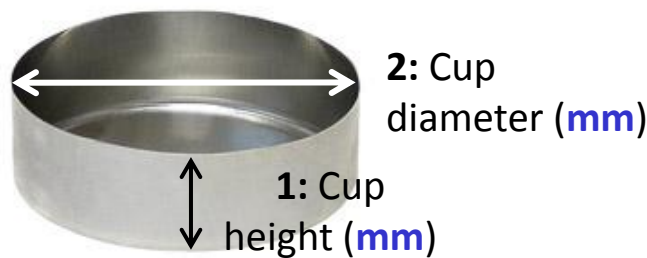
- Chartered improvement projects
- Project charters approved and signed off
- SOPs developed after improvement projects
- Completed improvement projects
- Financial department involvement in improvement projects
- Processes perform at 4.5 Sigma or higher
- Staff trained in Lean Six Sigma
- Savings resulting from an employee suggestions
- Time to respond to suggestions
- Idea conversion rate
- Kaizen events conducted
- Cross-industry benchmarking studies conducted



# - KPIs

## Operational Definitions:

- ❑ A clear and detailed description of a performance indicator.
- ❑ Ensure consistent data collection.
- ❑ Ensure standards are applied in the same manner.





# - KPIs

## Components of Operational Definitions:

Performance Indicator:	Perspective:	Unit:
Description / Formula:		
Data Source:	Measurement Instrument:	Process Diagram or Drawings:
Method of Test (How):		
Frequency (When):	Decision Criteria:	
Data Collector (Who):	Owner:	
Baseline:	Target:	

# - KPIs

## Utilizing Performance Indicators:

- ❑ Review the quality of the current data collection methods.
- ❑ Train staff on CTFs, KPIs, empowerment and process improvement methods.
- ❑ Start by a few easily understood performance indicators.
- ❑ Relate to critical success factors and reflect the voice-of-the-customer.
- ❑ Allow teams to define and select their own performance indicators.
- ❑ Have performance indicators approved by senior management.
- ❑ Measure and report only what matters.
- ❑ Monitor performance using dashboards.
- ❑ Display at workplace.
- ❑ Use them as a basis for team meetings and decision making.
- ❑ Identify and pursue improvement goals.



# - KPIs

## Further Information:

- ❑ A problem arise when managers struggle to identify the vital few performance indicators, and instead collect and report a vast amount of everything that is easy to measure.
- ❑ Many of the customer related performance indicators (mentioned earlier) are developed and managed using customer relationship management software.

