

# IFPUG

INTERNATIONAL FUNCTION POINT USERS GROUP

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## **The Monitoring and Early Warning Indicators for a software project**

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**IFPUG Board of Directors**  
**Hewlett Packard Enterprise**



# A little bit about me

## ▶ IFPUG

- Board of Directors
- Director of Certification
  - Past – Direction of Applied Programs
  - Past - Vice-chair of IT Performance Committee

Recognized leader in promoting and encouraging the effective management of application software development and maintenance activities by providing software sizing standards and other software measurement techniques.

## ▶ Hewlett Packard Enterprise

- Process, Estimating & Measurement
- RCA on Cost Model – Budget and Tracking

Hewlett Packard Enterprise  
Technology innovation that fosters  
business transformation.



# Driving a car without the wheels

**To create a Budget without Monitoring and EWI is a bit like having a car without the wheels and ability to drive.**

▶ **When driving Monitor**

- Speed
- Quality
- Early Warnings Indicators



# Root Cause Analysis for insufficient EWI & Monitoring

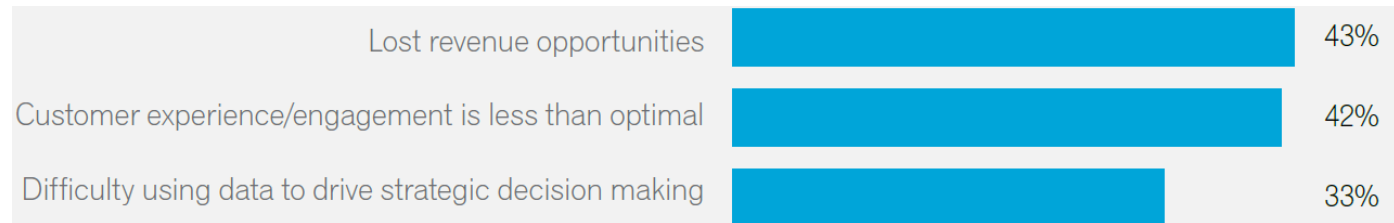
- ▶ **No collection of actuals**
  - Especially against the units used in estimates
- ▶ **Only focus on what already has happened**
- ▶ **No Task's Monitoring**
- ▶ **No tracking of Risk identified during estimates**
- ▶ **The expectation of Productivity**
  - Suddenly the un-realistic estimates comes true
- ▶ **Project Constrains impacting effort & cost**
- ▶ **Unexpected changes in influencing factors**
- ▶ **No shared repository for data collection and normalization**
- ▶ **No standard usage of tools and designs of reports**

**EWI &  
Monitoring  
expert?**

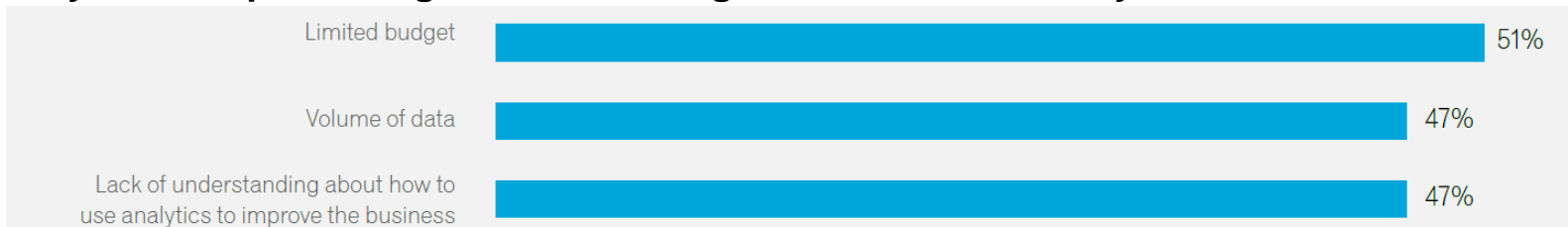


# CIO perspective

## Consequences for CIOs of inaccurate data in the last 12 months



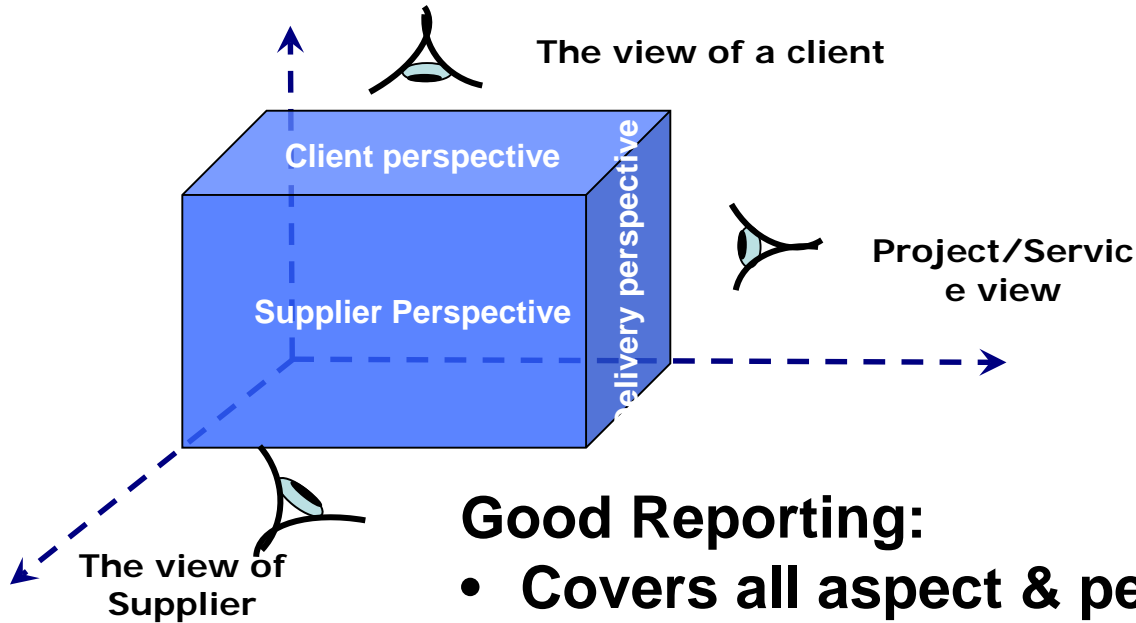
## Key barriers preventing CIOs from using data assets effectively



## CIOs cited saving from investing in data quality tools over a 12 month period



# The Monitoring and EWI Perspective



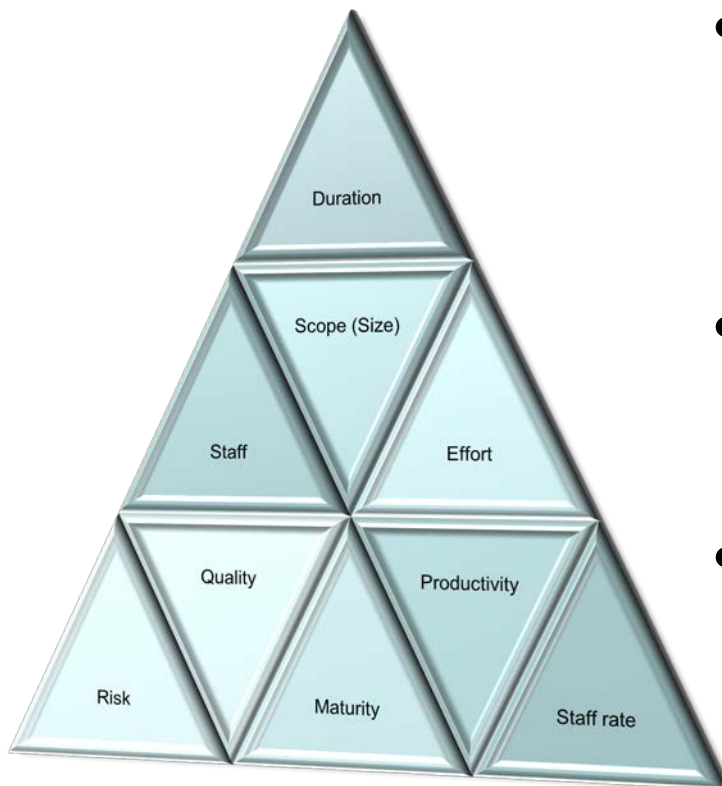
## Good Reporting:

- Covers all aspect & perspectives
- As few Reporting as possible
- All data natural output or input from process
- A simplification of the “real” world (but not to simplified)

# The Balance & Requirements

Promote confidence, understanding, acceptance

## Balance between many factors



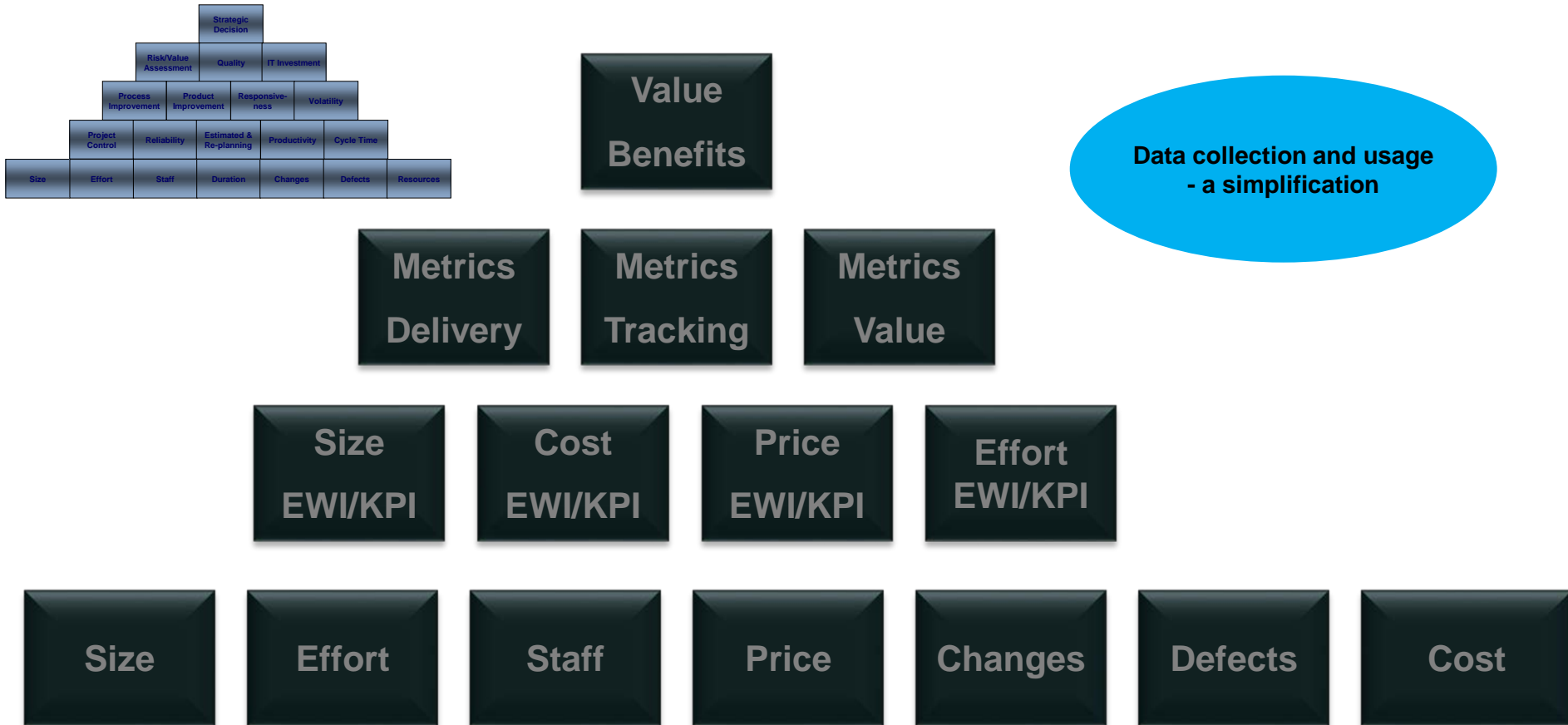
- **Confidence**
  - Accurate
  - Achievable
  - Competitive
- **Understanding**
  - Easy overview
  - As simple as possible
- **Acceptance**
  - Informed EWI and Monitoring
  - Decision making EWI and Monitoring
  - Value for Effort/Money
  - Increase ability to meet goals

Looks familiar?



# Data Collection

## Main focus EWI, Monitoring & Benchmark



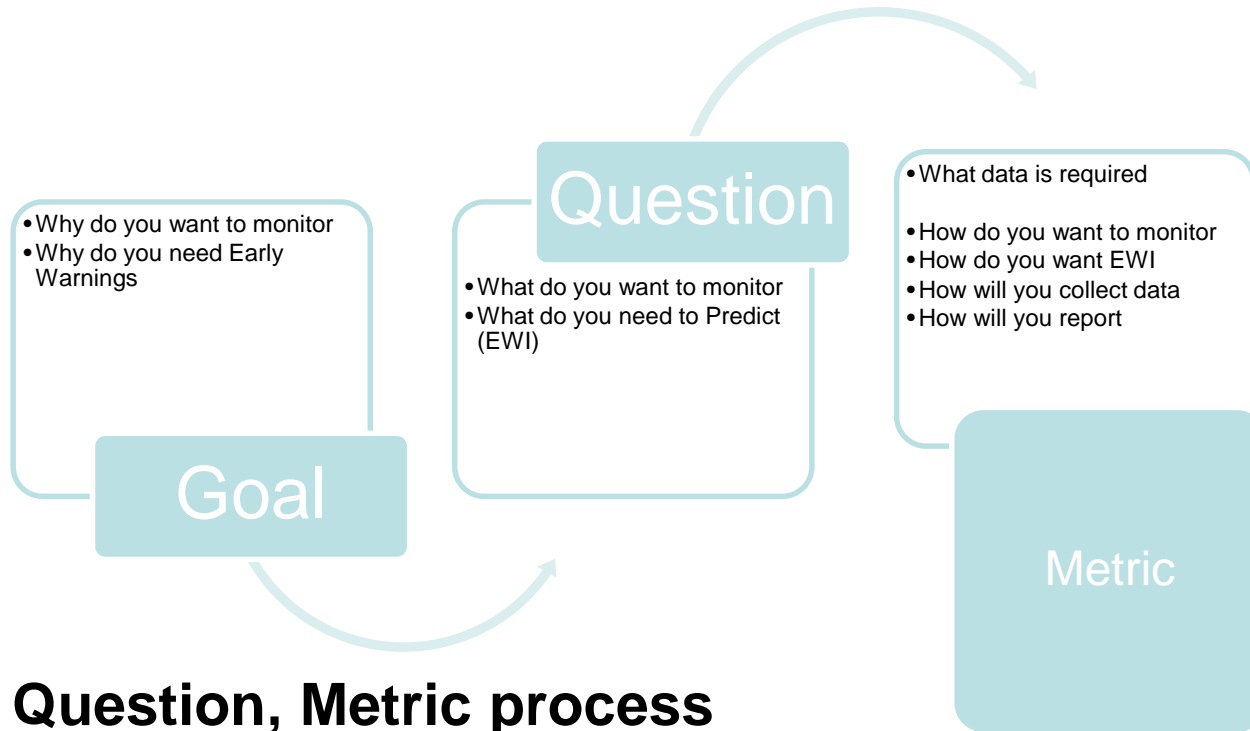


# Examples of EWI

Goal	Description	Calculation	Cal. Description	Color status
Monitor Budget	CPI (Trend) over 3 Months	Last 3 months $\Delta$ CPI $\leq -0.05$ & CPI $< 0.8$	Last 3 months the CPI is red with a decreasing trend, having decreased last 3 months more or equal to 0,05 (half range to switch between colours)	Red. Last 3 months the CPI is red with a decreasing trend, having decreased last 3 months at least by 0,05
Monitor Budget	CPI (Trend) over 3 Months	Last 3 months $\Delta$ CPI $< 0$ & $\geq -0.05$ & current CPI $\geq 0.9$ & $\leq 1.1$	CPI decreasing last 3 months at a small rate but still in good shape but with risk to move to yellow	Green . Last 3 months the CPI is decreasing by a value larger than 0 and less or equal to 0,05 , while SPI remains green and is $\leq 1.1$
Monitor Resources	Staff Variance	High Last 3 Months	Staff variance ranked from more than or equal to 20%, high -(either positive or negative) last three consecutive periods	Calculation: $[(\text{Actual Staff} - \text{Revised Baseline Staff}) / \text{Revised Baseline Staff}] * 100$ A. High. $>  +- 20\% $ last consecutive 3 periods
Montitor Effort	Estimated FTE Ratio	Variance against expected FTE ration	Ration of Hrs against expected Hrs per FTE	(Estimated Hrs/FTE) vs 130 $\geq 1.1$ And $< 1.2$
MonitorQuality	Pre-Release Defect Reporting	Pre-Release defect collected, performed and reported	That Pre-Release defects is reported	Last 5 months Defects Detected = 0 (Suspecious Project)   (New Development, Enhancement, Std Appl. Implementation and Integration Type Only)
Monitor Progress	Late Phase Start	That project is progressing as expected	To identify possible issues later in the project (Re-plan indicator)	Design Late Start   Phase Not Completed
Monitor Scope	Scope Creep Mgt.	That Change Request impact scope	Identify against threshold of CR	Incorporated Requirement Change Since Last Estimate Date $> = 5$ and $< 10$
Monitor Productivity	Estimated productivity FP per Person Month - Industry rating	That productivity is not optimistic	Estimated productivity is not higher than 30% above industry	FP $> 0$   Estimated Productivity (Design to Release) versus Industry Productivity $[2.037 * (\text{FP}^{0.251})] \geq 1.15$ and $< 1.3$



# How to get there – Monitoring and EWI

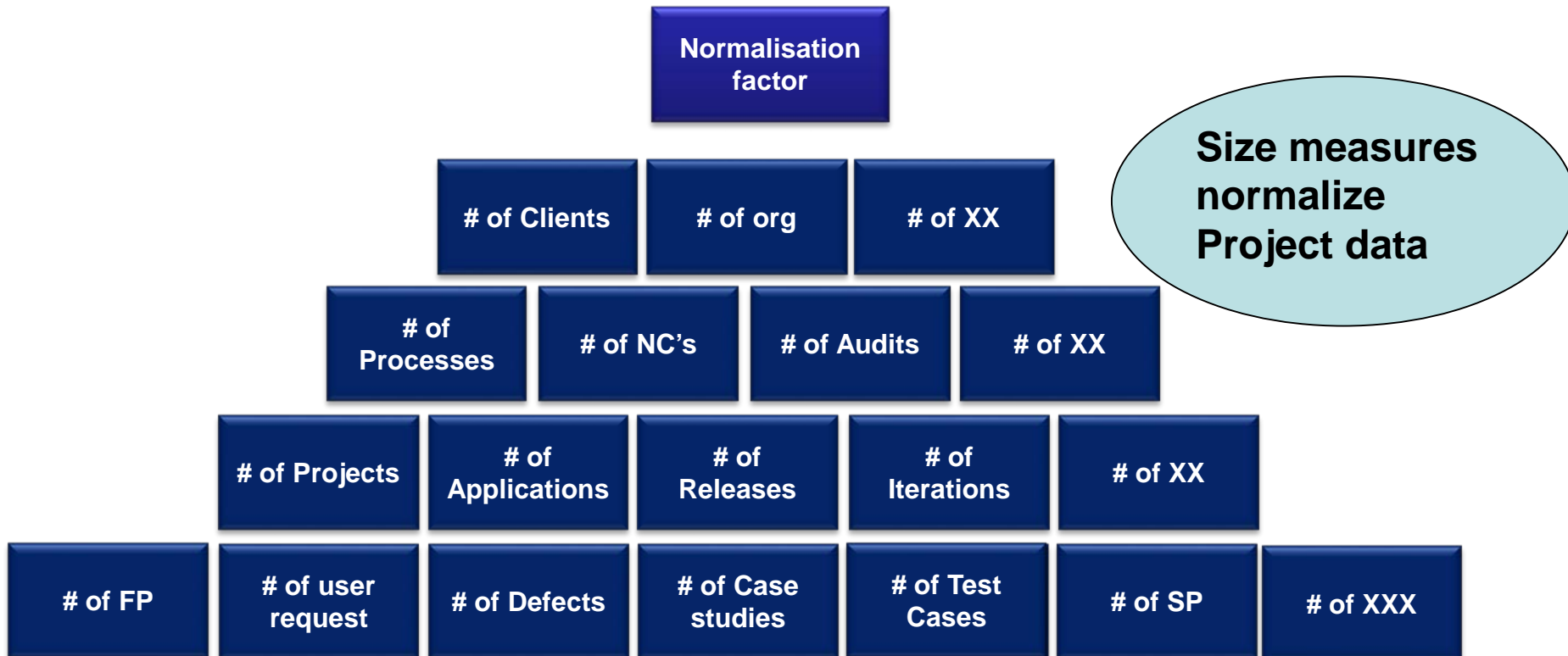


## Goal, Question, Metric process - Iterative

**Key stakeholders:**  
Management  
Data experts  
Measurement Experts



# What is Size in a Monitoring and EWI



## Issues: Poor or In-sufficient

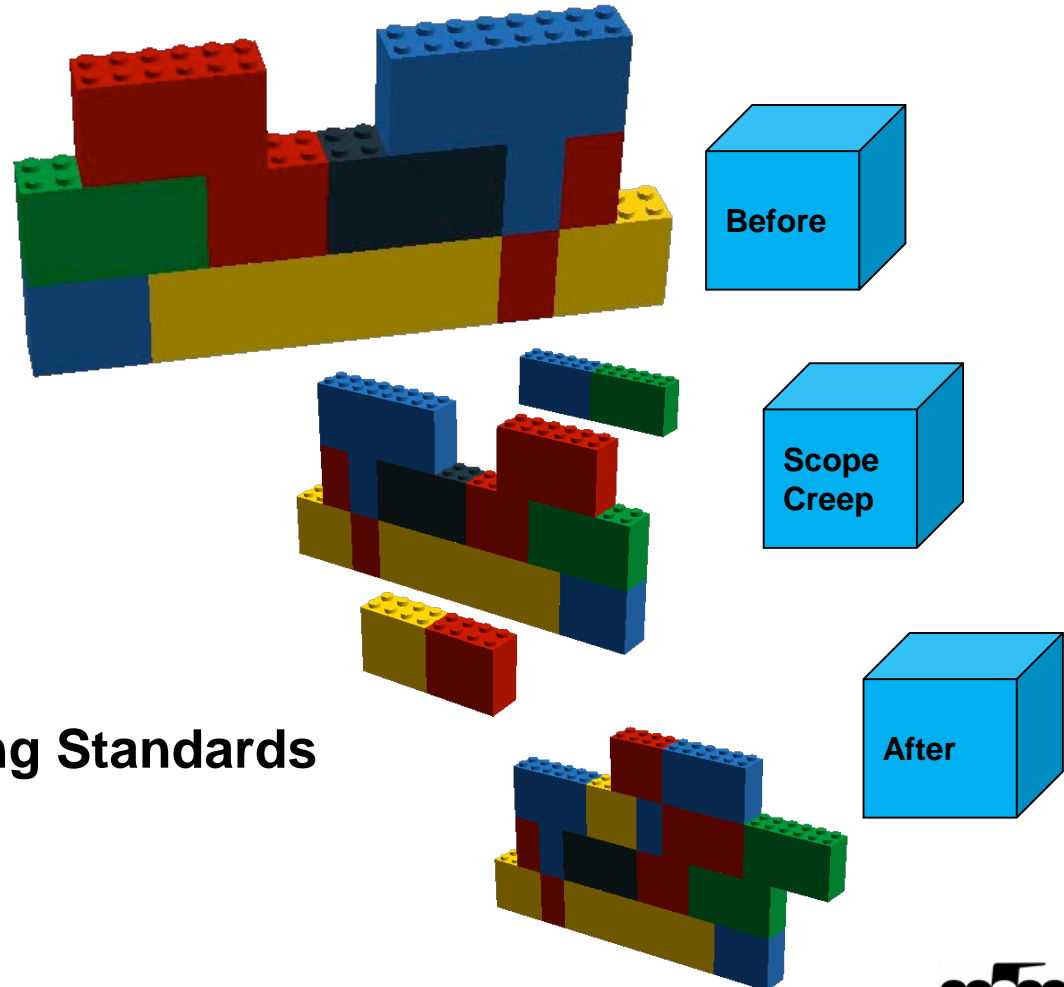
- Collection of data
- Change Management Process



# From Scope Black box to Quantitative measure

## Quantitative Scope

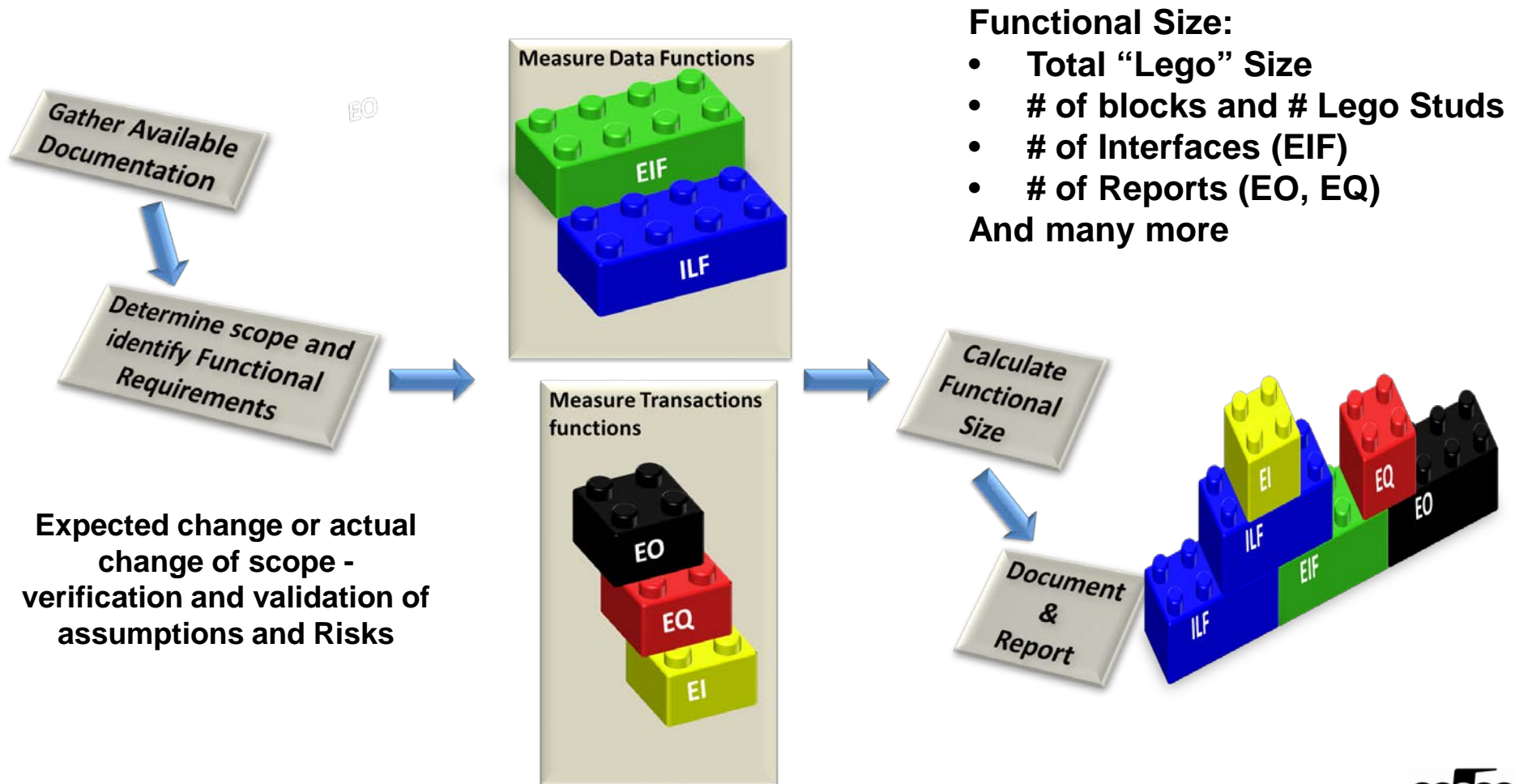
- ▶ Scope to # of
- ▶ Sizing Standards
- ▶ Scope crepe Monitoring
- ▶ Thresholds acceptable



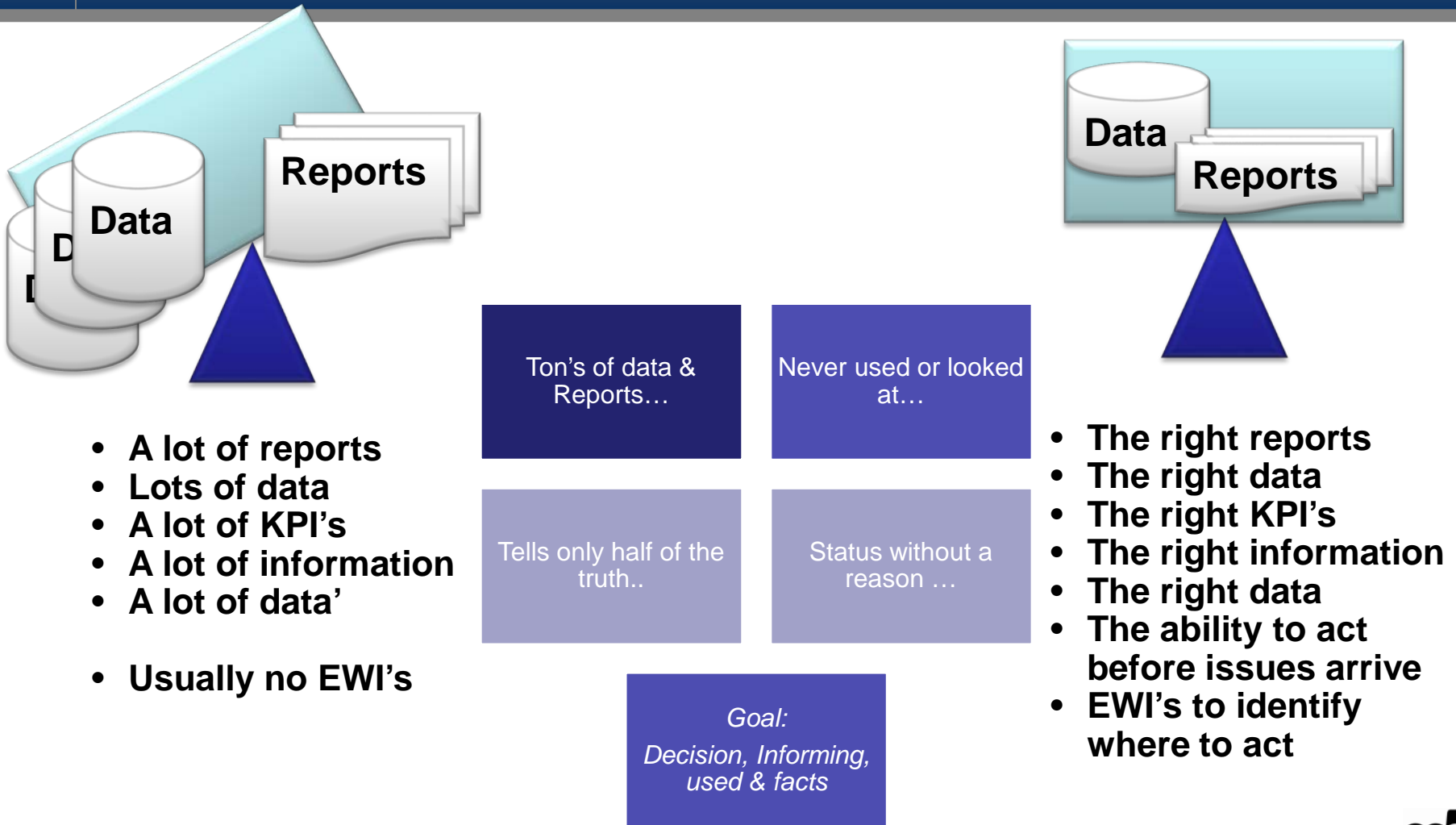
Using Sizing Standards



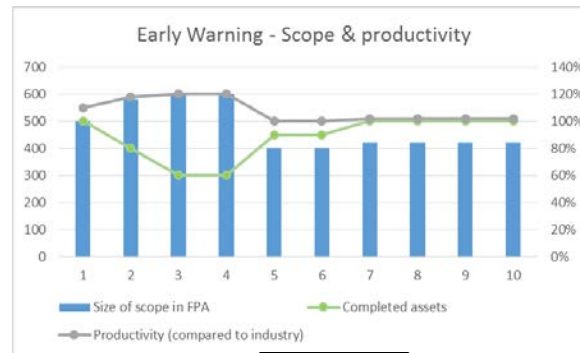
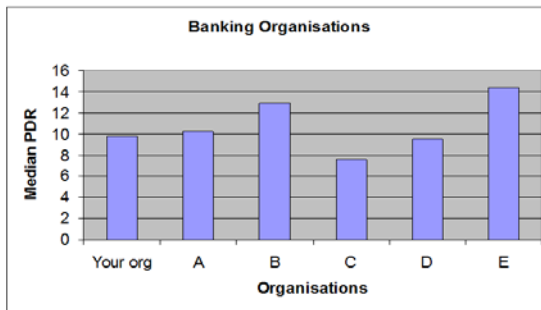
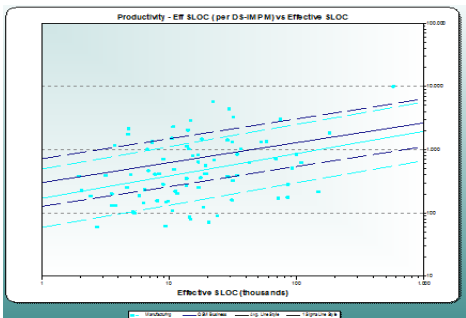
# IFPUG Function Point Analysis (FPA) - The Scope Process



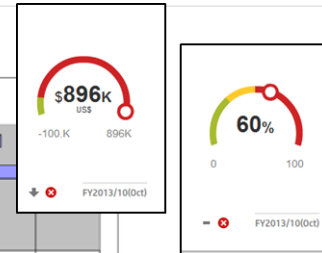
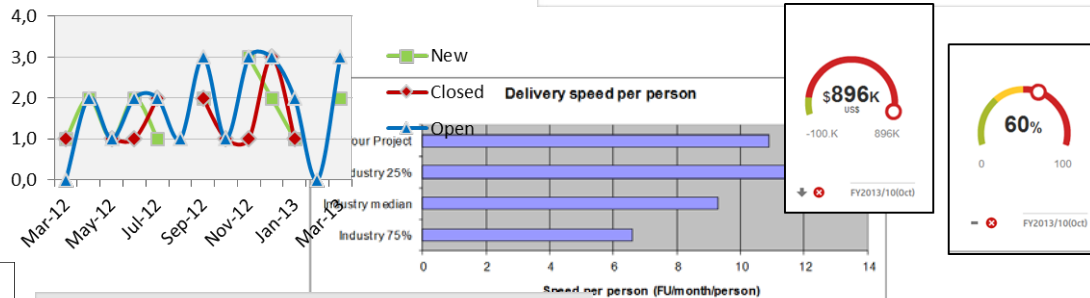
# The output - A Balance (Score Card) perspective



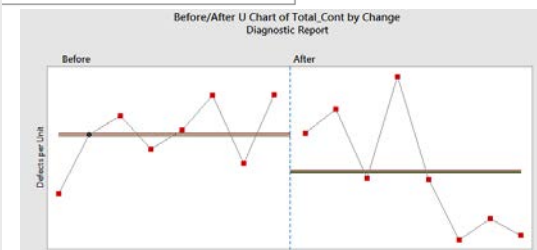
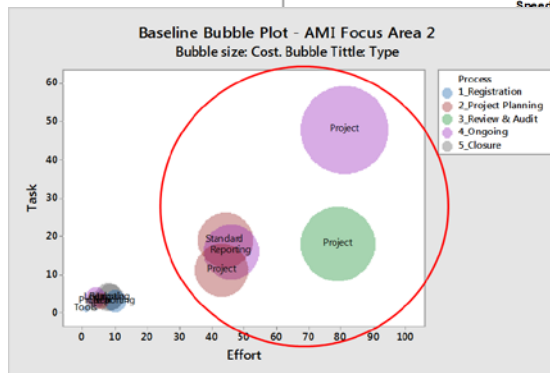
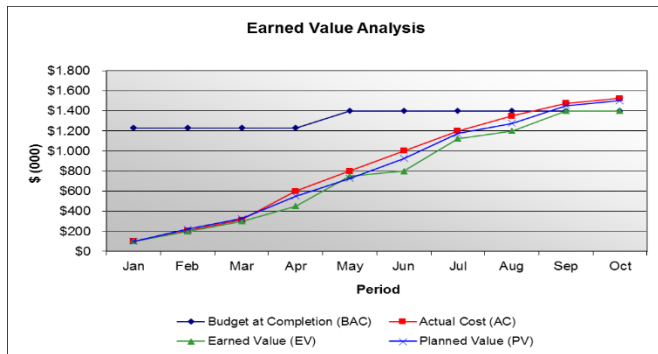
# Monitoring graphs



## Escalation Volumes



- ▶ One graph is not the truth!
- ▶ Maximize the different graphs
- ▶ Trend over time
- ▶ Graph perspective supports EWI

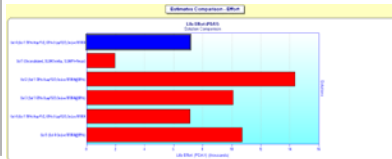
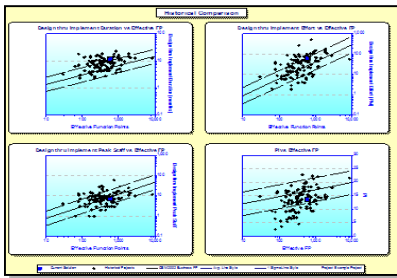
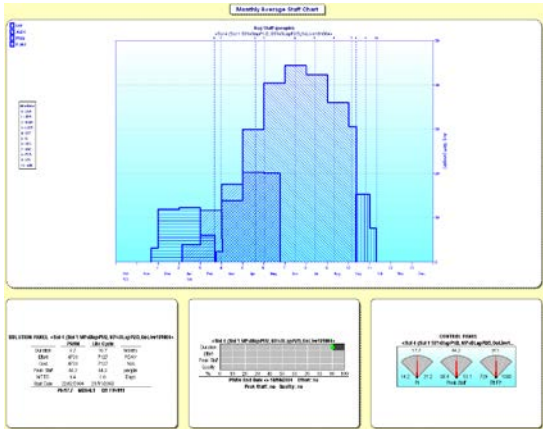


# Parametric Monitoring

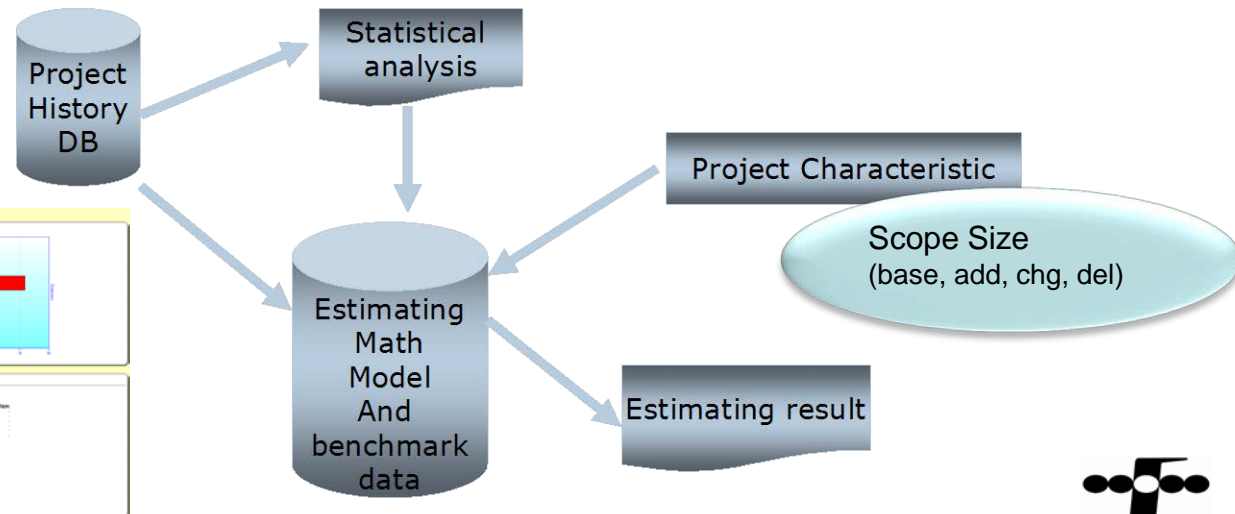
- Use the Parametric Monitoring for Monitoring and EWI.

***Gives you the power to...***

- **Develop realistic, data-driven cost, effort and duration comparison**
- **Sanity check plans against your history and industry trends**
- **Scenarios to see impact of new changes, constrains and assumptions**



The figure is a data table with columns for project details, including project name, start date, end date, and other metrics.

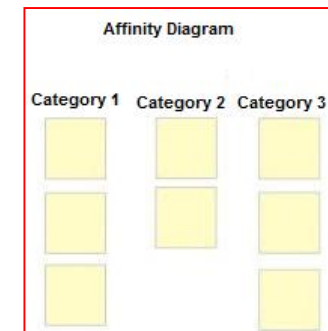
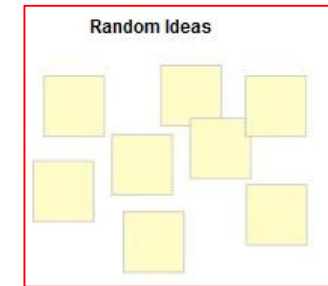
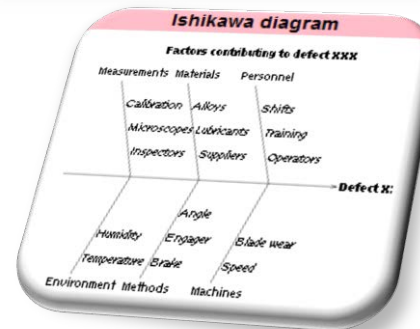
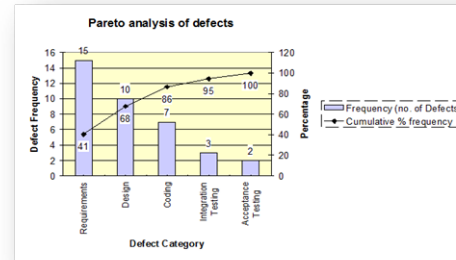




# What to do when you have the data - Cause Analysis Tools

## Cause Analysis:

- ▶ Pareto Analysis
- ▶ 5 Whys
- ▶ Brainstorming
- ▶ Affinity Diagram
- ▶ Fishbone Diagram



# Maximise it

## Remember to:

- ▶ **Identify what the goal of the monitoring and EWI**
- ▶ **Use size measures to normalise monitoring and EWI**
- ▶ **Internal or external size definition**
- ▶ **Identify the critical reports - simplify**
- ▶ **Report with added value – not just one perspective**
- ▶ **Use EVM method against other than cost**
- ▶ **Do not stop at measurement and reporting – RCA**
- ▶ **Perform actions against metrics**



# \*Final Statement

**Estimates and initial budget will change over time**

**Monitoring and EWI identify when actions should be taken**

**Aligning Monitoring and EWI performance with Goals of the Management**

**Increase benefit and awareness by ensuring easy to understand reports**



# Thanks for listening

