



Step-IN Theme Conference on Test Measurements and Metrics

Metrics in project level vis-à-vis Metrics at organization level

High Impact Global Product Engineering Solutions

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Agenda

- Understanding Metrics at all levels
- Metrics definition and processes
- Case Study on metrics analysis

Target Audience



- Test Leads
- Engineering Managers
- Business Managers
- Metrics Council Group

Where does this apply?

- Achieving Organization goals
- Consistent process compliance
- Planning for new proposals/projects
- Trend Analysis

Understanding Metrics at all levels

Test Leads / Test Managers are responsible to collect the data and project the metrics and trends along with the Managers' analysis to the senior management and the council leads / members

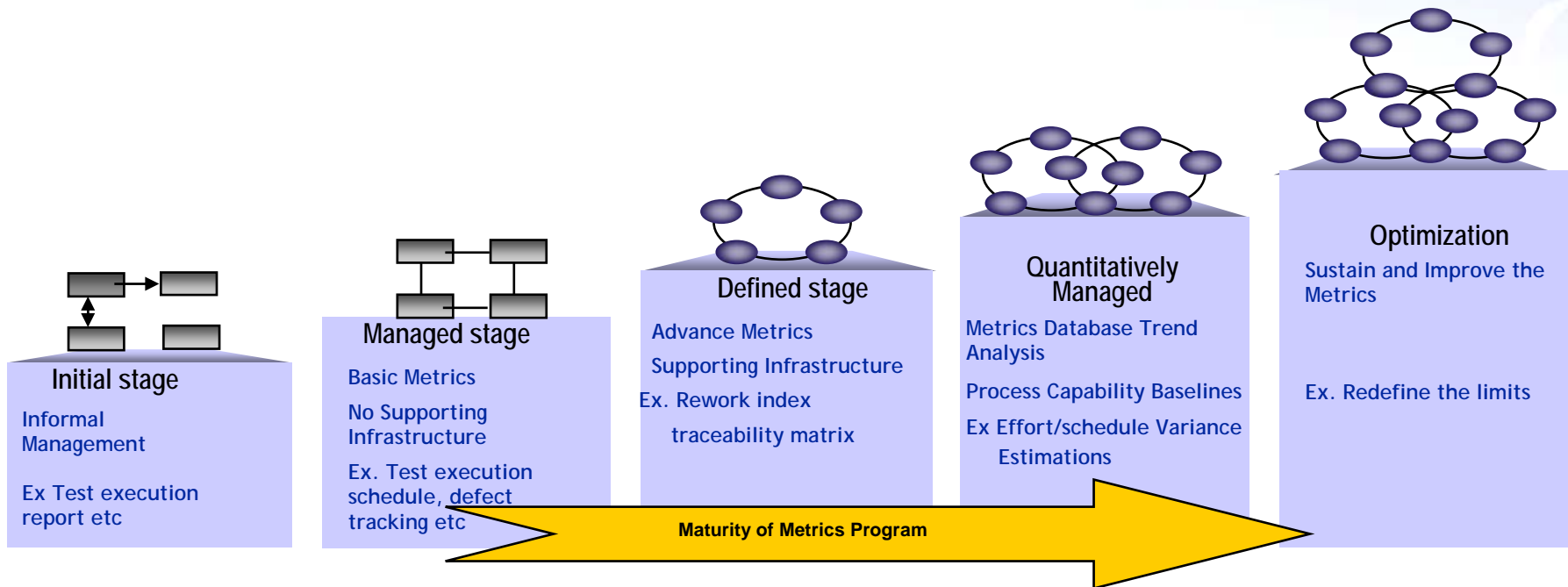
- Metrics for Leads: The leads collect and analyse the data for productivity, effort variance, estimations etc
- Metrics for Project Managers: The Project Managers have participation for collecting and analysing the overall project metrics (Ex. Estimations and Re-Estimations, Project Trend Analysis, Effort/Schedule Variance, Overall Rework Effort Index, Overall Quality Effort Index etc)

Metrics at Organizational Level



- Metrics for Senior Management:
 - Overall projects trends
 - The voice of the client (customer satisfaction)
 - On Time Delivery Index (OTD)
 - QA Process Compliance Index (PCI)
 - Attrition of test team
 - Average ROI
 - Average Project Duration
 - Cost of Quality

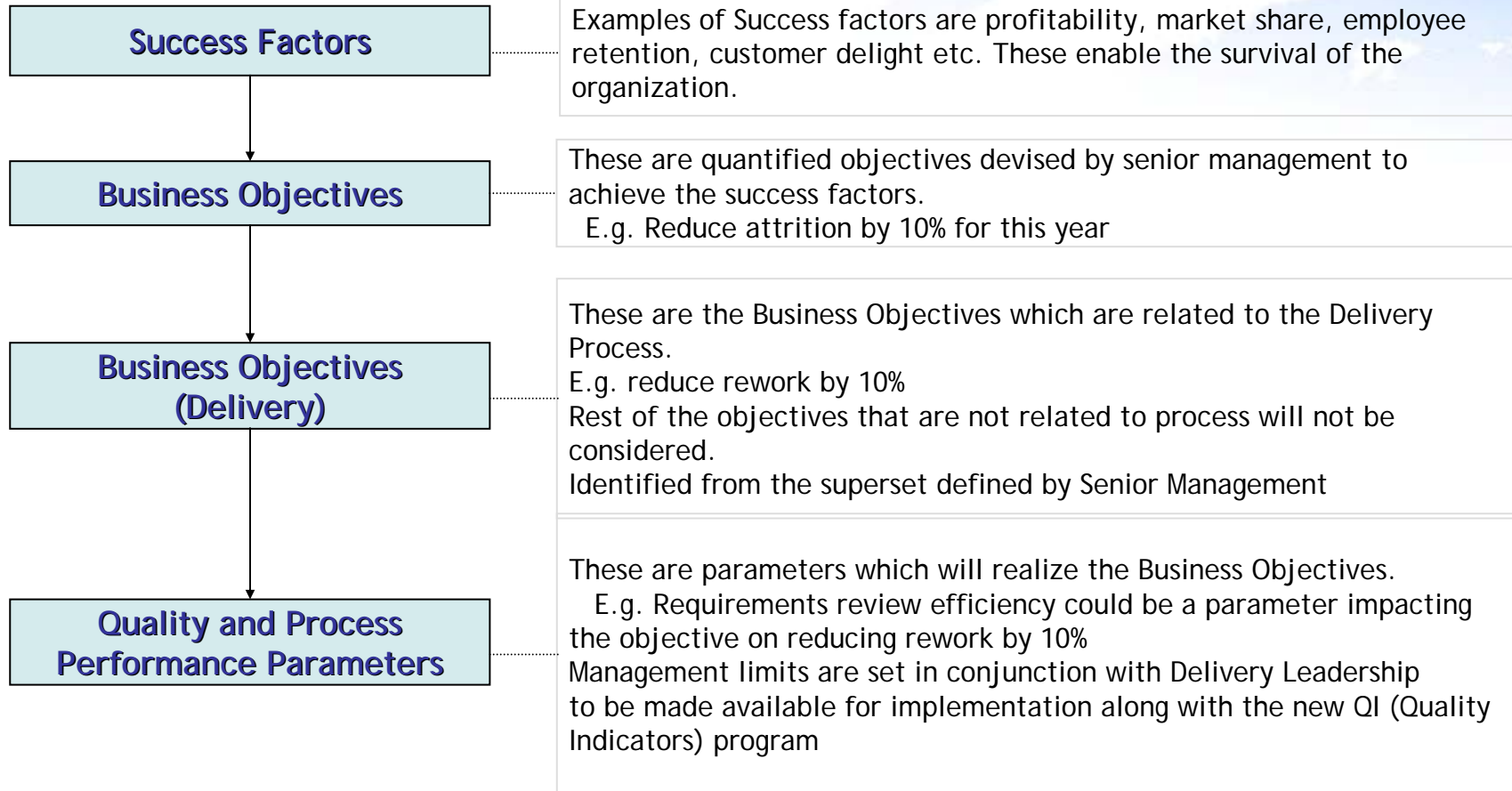
Maturity of Metrics Program



The metrics program is a continuous improvement program

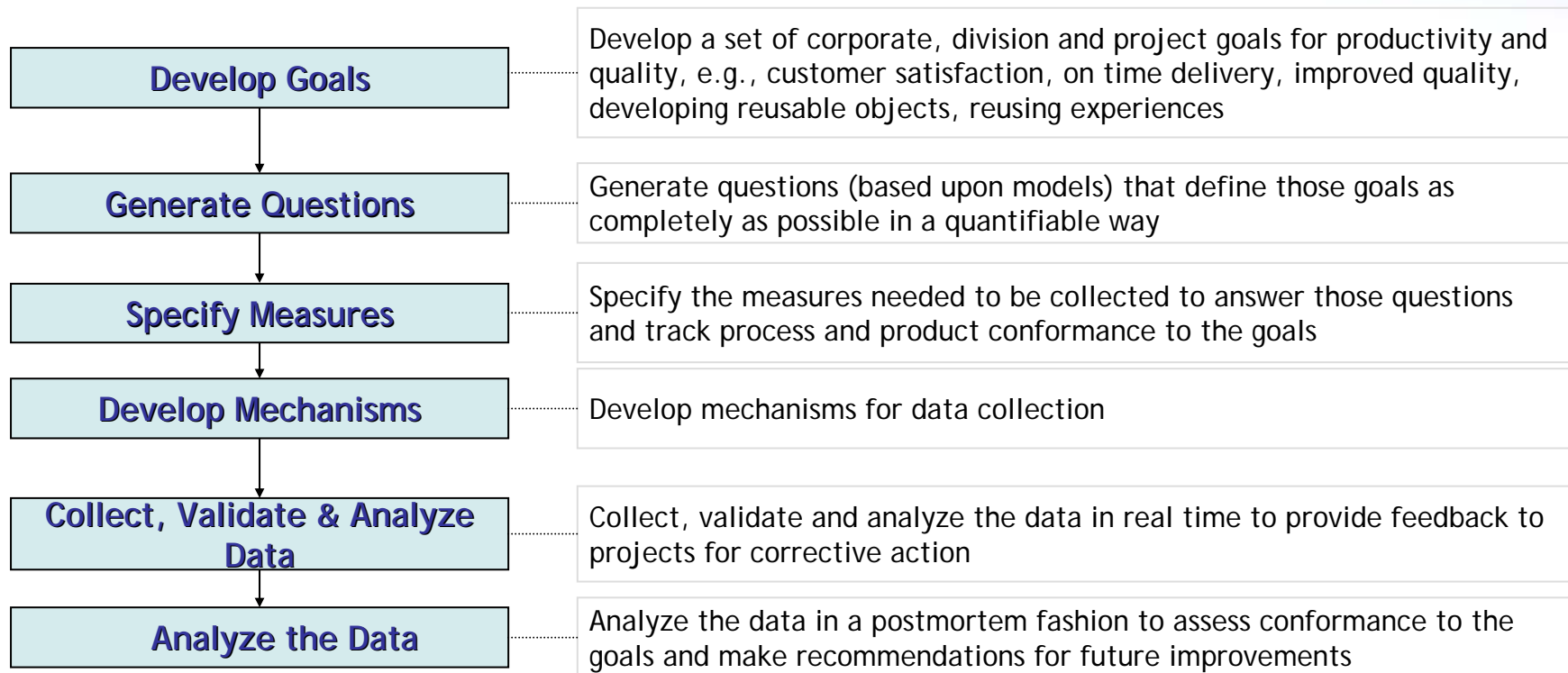
Metrics definition and processes

How are Metrics Defined at Organizational Level?



How are Metrics Derived at Organizational Level?

Goal-Question-Metric Paradigm



How are Limits Defined at Organizational Level?



- Organizational Process Capability Baseline (PCB)

- Control Limits

 - Ex. Defect Density - (Defect/KLOC) - Lower Limit:18, Upper Limit: 22
 - Defect Severity Index (QA Defects) - Lower Limit: 0, Upper Limit: 1.75

- Specification Limits

 - Ex. Time to Find a Defect (QA Testing) - Lower Limit:2, Upper Limit: 4
 - Time to Fix a Defect (QA testing Defects) - Lower Limit:2, Upper Limit: 5

- Management Limits

 - Ex. Overall Effort Variance - Lower Limit: -5, Upper Limit: 5
 - OnTimeDeliveryIndex (OTD) - Lower Limit: -95%, Upper Limit: 100%

Case Study

Case Study on Metrics Analysis

Below is the case study of a project, which involves design, development and testing at offshore (by a vendor).

Project Manager's analysis was required, where there was a variance. This variance cause was reviewed by the process team as well as the delivery leadership regularly



Sample Quality
Indicator

Conclusion

- Metrics collected at Project level yields to define the organizational limits
- The limits defined at organizational level would be helpful to review the metrics for every current project and analyse the trends, update or improve the limits (if required)
- The historical data from the Metrics collected for every project stored in a process database at a company level, should be reviewed and analysed further for estimations and planning of upcoming projects (in similar domains)

Conclusion Contd...

- Models should be developed that are capable of predicting process or product
- The Project Manager's analysis for any variance in their respective ongoing projects would benefit the management to understand the situation within each project and would let them take corrective actions at the proper time
- Metrics Council, part of Organizational Process Improvement Group, should take ownership of all metrics related activities, rollout the plan, responsible for executing the plan, review the new metrics and update the existing ones.

Any Questions?

Thank You

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