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Organizational metrics program

how to avoid measuring an average color of fruits

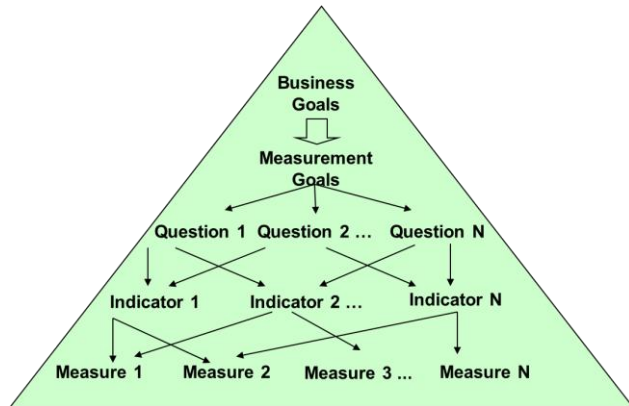
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MOTOROLA MOBILITY

Metrics Gathering. Why?

Organization
Unified Process model



Establish set of metrics in all projects

Vs.



Organization
Heterogeneous environment

- projects are parts of distributed programs
- projects following different process models
- term "project" - team with its area of responsibility in the assigned activity (-ies)



Establish set of metrics in all projects

Faced Problems

-  *How to gather and track metrics in heterogeneous environment?*
-  *How to make metrics gathered at project level visible and valuable to the senior management?*

Our aim

Establish metrics in all projects through finding a common

“**DENOMINATOR**” that can:

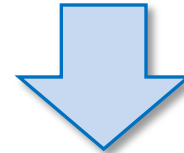
- tie projects
- provide an instrument for quantitative project management

Metrics Program at Project Level

Project Type

Vs.

Activity Type



- Code/test development
- Test execution
- Test automation
- Bug fix
- Agile (SCRUM)

Examples of Basic Metrics

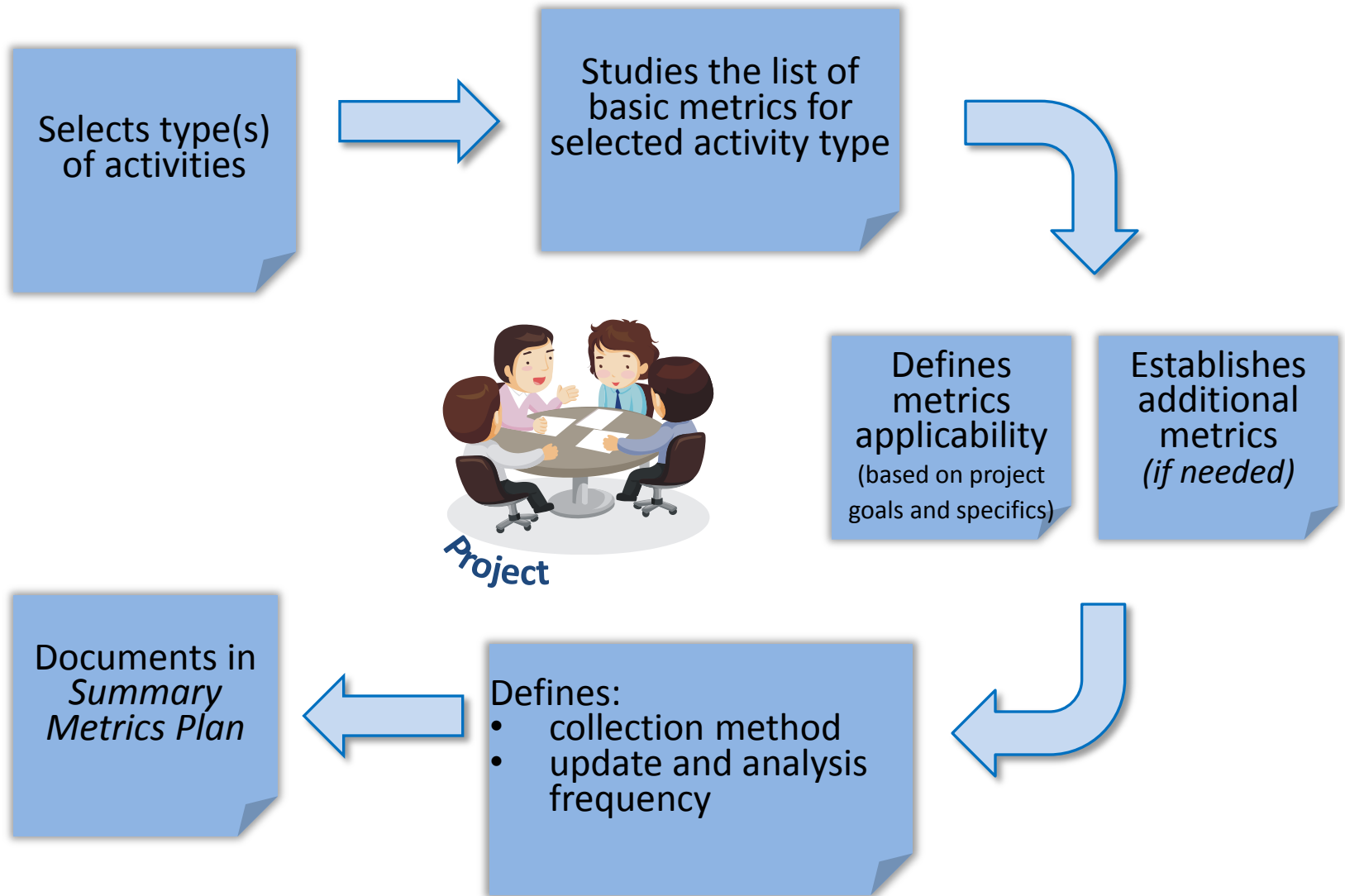
Activity	Basic Metrics
Test Execution	Number of Escape Defects
	Execution Productivity
	Number of defects submitted during test cycle
	CR Rejection Ratio
	...
Bug Fix	CR Closure Rate
	Age of open CRs
	Number of open/closed CRs
	CR Productivity
	Fix-on-Fix
...	
Agile (SCRUM)	Sprint Velocity
	Scope Completion
	Team Velocity
	Escaped Defects
	...
Other Types	...

To evaluate defect submission efficiency of test team

To track open critical bugs and close them within the limited number of days

Data for analysis: how to prevent functionality breakage by related fix

Metrics Selection



Summary Metrics Plan (example)

Project Information

Selected Activity Type and Metrics Applicability

Metrics Update Frequency

Project	Project Status	Activity type	Metrics	Applicability	Applicability/Tailoring Comments	Implementation Status	Due Date	Implementation Comments	Update frequency	Goals/forecasts /specific limit	Management review
Project A	active	Bug Fix	Age of open CRs	Tailored	Age of open customer's bugs	completed	1-Feb-12	Defect tracking tool dashboard is used	each time dashboard is opened	not more than 30 days	X
Project A	active	Bug Fix	# of open CRs	Yes	Done for bugs and new works by components	completed	1-Feb-12	Defect tracking tool dashboard is used	each time dashboard is opened	N/A	
Project B	active	Bug Fix	Age of open CRs	Yes		completed	25-Mar-12	spreadsheet is used	weekly	No	
Project B	active	Bug Fix	Fix on Fix	No	Defect tracking tool don't provide possibility to mark "fix on fix" bugs, the decision not to track this metrics was agreed with PL	N/A	N/A	N/A	N/A	N/A	
Project B	active	Bug Fix	Project Specific	Yes	Bug resolution efforts in hours	completed	25-Mar-12	spreadsheet is used	weekly	No	
Project C	active	Test Execution	Escape Defects	Tailored	Only critical bugs from higher levels of testing and from customer's testing are tracked	completed	10-Nov-11	spreadsheet is used	monthly	Zero escaped defects	X
Project C	active	Test Execution	CR Rejection Ratio	Yes		completed	10-Nov-11	spreadsheet is used	bi-weekly	5% of rejected bugs	X

Metrics Implementation Info

Related goal/specific limit and Management review applicability

Metrics analysis and review at organizational level

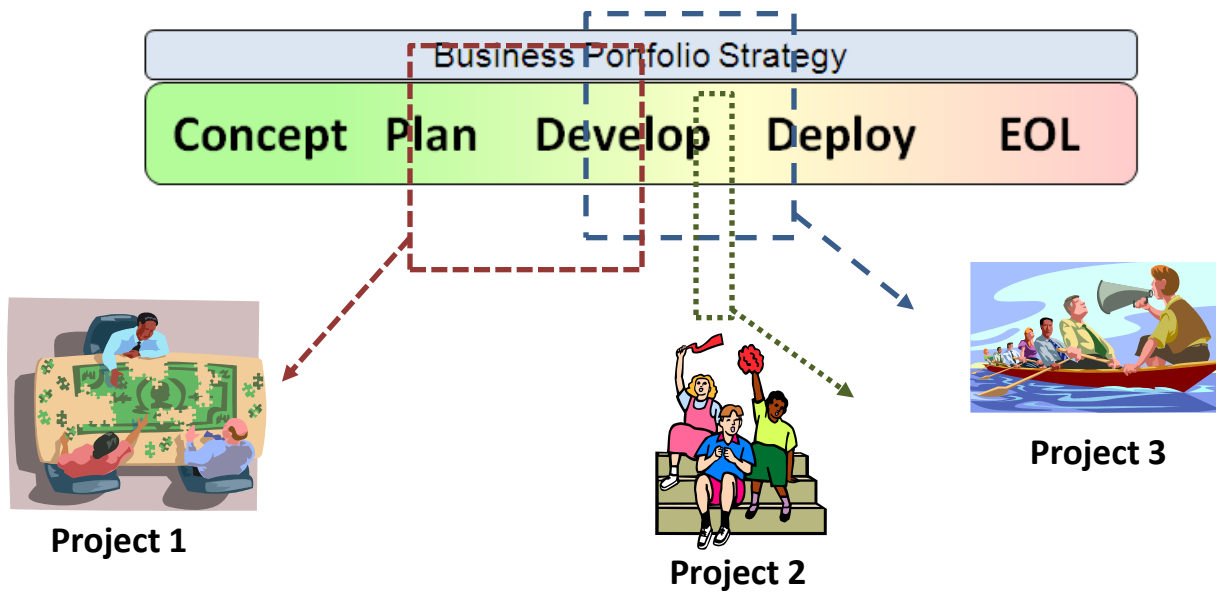
Make metrics analysis done at project level visible and valuable to the senior management



Management wanted:

a simple, concise report on projects/programs metrics activities in the terms that are understandable for them and that can be compared somehow

Corporate Product Development Framework



Metrics Dashboard

- Unified picture from different sources
- “Traffic light” indication of project health based on key metrics status
- Metrics selected as per criteria:
 - Goals/thresholds are established
 - Root cause analysis is conducted
 - Other: potential goals/thresholds can be established for trial metrics, e.g. important but new metrics

Metrics Dashboard (Example)

Red indicates change actions with high priority

Yellow indicates a need for improvement actions

Project/ Team	Metrics	Metrics Indicator/Goal	Link to chart					Comments
				Feb	Mar	Apr	May	
Project 1	Customer's open bugs age	all releases, opened not more than 30 days	Link to metrics	Red	Green	Yellow	Green	May: No new customer's bugs for the reviewed month Apr: Two bugs with age more 30 days: Their analysis showed that their closure is impacted by other teams, the problem is escalated to be resolved ASAP. Mar: No open customer's bugs with age > 30 days Feb: There are open customer's bugs with age > 30 days. The analysis is conducted. Action plan is defined.
Project 1	Escaped defects	Only critical bugs are analyzed	Link to metrics	Yellow	Green	Green	Green	Apr-May: No new data for analysis Mar: Analysis of new potential escaped defects was conducted. No escaped defects are defined. Corrective actions from previous month are closed. Feb: Potential escaped bugs were analyzed, part of defects were accepted as escaped. Action plan was defined.
Project 2	CR rejection rate	goal: not more than 5% of rejected bugs	Link to metrics	Not Rated	Green	Green	Green	Mar-May: Number of rejected CRs is not above limit of 5% Feb: The metrics is under implementation, no rating is applicable.

Not Rated – explaining comments should be provided, e.g. it is a new metrics and there are no data for analysis

Green indicates satisfactory progress of the analyzed metrics

Analysis is done by PMs monthly

Summary

- Establishing organization Metrics Program by **activity** type in heterogeneous environment Data being collected can be used as a basis for organization history database
- Metrics Dashboard use has increased visibility, clarity and value of measurement and analysis process to the senior management in the highly distributed integrated environment

Thank you!
Questions?