

CRAWL-WALK-JOG-RUN

EVOLVING MEASUREMENT CAPABILITIES

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Quick Poll

- **How many of you are already using the following metrics?**
 - **Mean time to repair**
 - **Defect density**
 - **Defect phase containment**
 - **Earned value management**

- **Why don't more people use these measures?**

Basics of Measurement

- **Two types of measures**
 - **Base measure**
 - Lowest element that can be measured
 - An attribute and the method of quantifying it [ISO 15939]
 - Defect, requirement, staff hour
 - **Derived measure**
 - Combining two base measures mathematically
 - Percent complete, requirements volatility
- **Too many people try to jump right to derived measures before they are ready**
 - You need to walk before you can run
 - In many instances, you need to crawl before you can walk

Quick Poll #2

- **How many of you are struggling to understand the following?**
 - **How many projects do we have?**
 - **How many projects have documented schedules and plans?**
 - **What is a requirement?**
 - **What is a defect?**

- **There may be the need to step backwards before moving forward with measures**
 - **We'll use defects as the example for evolving measures**

Crawling

- **The first step in getting effective measures is to ensure the element to be counted exists**
- **Consider starting with measures that should always be 100%**
 - **What percentage of projects have plans and schedules?**
 - **What percentage of projects have documented requirements?**
 - **What percentage of projects are reporting measures?**
- **These essentially become throw away measures but are critical to get everyone's attention**
 - **People do what is inspected, not what is expected [GP 2.10]**

Walking

- **With projects starting to measure, it is time to understand the measures simply in terms of quantified raw numbers**
 - That is, how many do we have of each?
- **Generally, there will be some stratification of the numbers**
 - Total number of open defects
 - Total number of closed defects
 - Possibly even by severity/priority
- **This is nice but does not show trends**
 - Are we closing more than we are opening?
 - Are fewer defects being reported?

Jogging

- **Looking at trends moves the organization down the road to understanding measures, not just reporting them**
- **Answer basic questions**
 - Are we getting better or worse?
 - Is this normal or a unique occurrence?
 - Have we deviated significantly?
- **Probably start applying thresholds**
 - Aerial extraction
 - Industry standards
- **Likely to start eliminating “crawl” measures**

Running

- **Calculating insightful measures that previously were not available**
 - **Defect density**
 - **Phase containment**
 - **Requirements volatility**
- **Using them to actually manage the project, not simply reporting them because you have to**
- **Calculating thresholds based on past performance**
 - **Are plus and minus 10% the right thresholds?**
- **Seeing the explicit linkage to organizational goals and objectives makes the measures even more meaningful**

Evolving Defect Measures

- **Crawl: Number of projects reporting defect measurement data**
- **Walk: Number of open and closed defects on each project**
- **Jogging: Number of open and closed defects on each project compared to the last six months**
- **Running: Percent of open defects compared to company standard for release**

- **Supports organizational goals and objectives about quality of products released to customers**

Supporting Measurement Evolution

- **To evolve measures, it is important that management be involved**
 - **See inspected/expected bullet from earlier**
 - **Usually occurs through reviews**
- **It is important that managers understand how to ask the right questions during management reviews**
- **It is more important that managers understand how to react to certain responses**
 - **No shooting the messenger**
 - **No excusing a lack of data**
 - **Setting expectations but not mandating dates**
- **Look into developing question trees for managers to use when looking at measures**

Question Tree

- **Defined questions that progress through a basic evolution of the measures tied to organizational goals and objectives**
- **Receiving the preferred answer leads to the next defined question**
- **Provide appropriate responses to non-preferred answers**
 - **I don't know**
 - **We don't do that**
- **Anticipating responses keeps the manager prepared and enhances the measurement program**
 - **Leads to action items from higher level management review**

Example Question Tree

- **How many defects have been recorded for your project?**
 - Preferred response: a number given (go to next question)
 - Non-preferred response: I don't know
 - Reply: Because you are not counting or because you are not recording?
 - Not counting: When will you know how many you have?
 - Not recording: Start counting and deliver a count in your next report
- **What % are open and what % are closed?**
 - Preferred response: numbers given (go to next question)
 - Non-preferred response: I don't know
 - Reply: When will you know?

Summary

- **There are meaningful derived measures that organizations are not ready for**
- **Evolve the measures knowing that you may have to crawl before you walk, jog, and run**
 - **Some crawl measures may end up as throw away measures**
 - **Thresholds move from being set to being calculated**
- **Management is key to evolving measures**
 - **Must react appropriately in order to enhance measurement capability**
 - **Action oriented reviews**

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