Iowa Technology
The go-to guide for technology in Iowa

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>> Focus

Metrics: Friend or Foe?

By Denise Tutty, Sogeti USA

Has your software development team been feeling pressure from customers to quantify the quality of the products your team provides? As an IT organization, how do you answer these customer concerns? How do you prove to your customer that you have met acceptable service levels? Beyond that, how do you get your customer involved in quality? See page 3 for answers.

>> Events

Association of Information Technology and Management (AITM)
Tuesday, March 11th, 11:30 AM to 1:00 PM
Des Moines

At AITM's March meeting, Penny Thompson of Wells Fargo Home Mortgage will be speaking on the topic "Blended Learning as an Enterprise Solution." Penny will describe what blended learning is, the business impact, why it is effective, and the technology solutions that Wells Fargo Home Mortgage utilizes for this strategy. Free for members; $10 for non-members. RSVP required.

SITI After Hours Business Mixer
Wednesday, March 26th, 5:30 PM to 7:30 PM
Cedar Rapids

Marty Cutter, Manager of Engineering Resource Management and Lean Engineering at Rockwell Collins will speak at this event. RSVP required.

Microsoft CRM - Business Insight Event
Tuesday, March 11th, 9:00 AM to 11:15 AM
Des Moines

For mid-market businesses that want to build profitable customer relationships, Microsoft Business Solutions Customer Relationship Management delivers a solution that equips managers and employees to sell more effectively; make informed business decisions; and provide consistent service. At the launch, you'll learn how Microsoft CRM offers flexible, easy-to-use tools that increase productivity and integrate powerfully with Microsoft Outlook, Microsoft Business Solutions Financials and other business systems, within an application built to meet the budget and IT resources of mid-market businesses. RSVP required.

Business Productivity Series: Project and Visio
Friday, March 21st, 10:00 AM to 2:00 PM
Cedar Rapids

Join Project and Visio experts for an informative session on various topics related to Project 2002/Server and Visio 2002. RSVP required.

Novell exteNd - Director Portal
Tuesday, March 25th, 8:30 AM to 11:30 AM
West Des Moines

Come to this seminar to hear from Novell about the different portals on the market today, and how to bringing all of your portals into one. This seminar will cover:

- Creating a new portal for your organization
- Integrating any existing portal or portlet
- Applying a singular security policy to these portals
- Creating a single sign-on application
- Developing applications that utilize Web Services (J2EE and .NET).

RSVP required.

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>> User Groups

Iowa Technology's calendar format shows you all of the best high-tech events in Iowa at a glance. Have we missed your organization's event? Email Iowa Technology's editorial team.

March 2003

Monday	Tuesday	Wednesday	Thursday	Friday
3	4	5	6 Digital Arts Group	7
10	11 Central Iowa Computer User Group (CIACUG) Central Iowa Java User Group (CIJUG) Association of Information Technology and Management (AITM)	12	13	14
17	18	19	20 Project Management Institute (PMI)	21
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Metrics: Friend or Foe?

Denise Tutty, Sogeti USA

IT organizations often feel the wrath of a customer who is dissatisfied with the quality of IT deliverables. Customers usually can't qualify their complaints by more than a gut feel or by citing the last production problem that occurred -- and maybe its business impacts. As an IT organization, how do you answer to those concerns? How do you prove to your customer that you have met acceptable service levels? Beyond that, how do you get your customer involved in quality?

Customers are also concerned about the timeliness of deliverables. How do you know whether the software slated to release in 3 weeks will be ready? Are you sure all of the functionality is there? Will all of the bugs be fixed in time? What about the bugs you haven't yet found?

The only way to really answer these questions is to collect data and measure, measure, MEASURE! Metrics can be used to describe project status by giving insight into the readiness of the deliverable. Metrics can be used at completion of a project to judge project success, as well as, the quality of the functional teams involved in that project.

Metrics can also be used to judge process improvements for a functional group or an organization. Real data helps indicate whether the quality of the systems you are developing is improving. Metrics can also help validate whether your processes are improving and highlight areas that need improvement.

In this article, we'll discuss some of the considerations in specifying metrics.

How do you start?

To decide what metrics to use, first define your objectives for measurement. You might start with quality, productivity, or delivery goals stated in your organization's annual or five-year plan. Your mission statement might have also some organization-wide goals that you want to measure. Your project management or software development life cycle process documentation might point to other goals at the project or functional group level.

Some typical, high-level objectives for measurement are:

1. *Meet the customers' expectation for the quality of IT services.* You might further clarify this objective with one of these statements:

(more)

Metrics: Friend or Foe? (continued)

- Improve the customers' perception of the quality of our systems.
- Prove that you have met agreed upon quality and service levels.

2. *Increase insight into project status and production readiness.*
3. *Determine achievements of specific, completed projects against predefined success criteria.*
4. *Set process improvement goals for the organization and measure accomplishments toward those goals.*

Once you've defined your objectives, you'll need to figure out how to quantify some of characteristics of those goals. You will find a wealth of information on defining metrics for IT goals, since these are issues that development and support groups often face. Using the objectives defined above as examples, we will follow up with some ways to implement metrics to meet those objectives.

1. Meet the customers' expectation for the quality of IT services.

Your customer needs to specify what defines "quality" to them. You could start with defined Service Level Agreements to get some of the basic requirements. For example, there may be defined resolution rates for issues. There may be uptime and availability requirements for systems and for applications.

To get a view of their hot buttons, discuss with your customers their view of quality IT services. Try to understand what your customer values most and what types of quality issues matter most. Do they think systems are down a lot? Are they worried that business rules are incorrectly applied, causing the business to lose money? Do they worry about losing data? Do they worry that there will be a significant pain period after delivering new software in production? Do they wonder whether systems are flexible enough to handle their business needs? Maybe you'll find that some bad impressions stem from buggy software visible to them during user acceptance testing. Is timeliness of deliverables one of their biggest complaints?

You will not be able to quantify all of these issues and requests. But certainly quality characteristics, which contribute to those issues, can be described with metrics. A lot of those issues are concerns about buggy software. Using simple metrics from data in your defect tracking system, you can describe the quality of software that goes to production. For example, you can track the number and severity of defects found in production the first week or two months or six months. You can compare those numbers with the numbers recorded in system test. You can track resolution rates. *(more)*

Metrics: Friend or Foe? (continued)

Eventually, you can get to a set of metrics that you and your customer agree on will help describe the quality of systems. With that visibility, you and your customer can make more informed decisions about whether to send software to production. The data will help prioritize maintenance. You can address other issues like uptime and availability using system-monitoring tools. Many of the tools even provide root cause analysis for issues found.

2. *Increase insight into project status and production readiness.*

Typically, a project manager or lead tracks project status against a plan. A more complete picture of production readiness includes metrics about the quality of the deliverable. Simple calculations such as the number of open issues by severity are valuable, especially if you have stated goals for production readiness. Perhaps your requirement is that software has zero critical defects and only major defects with acceptable workarounds. You might also get a view of the current quality by the number of test cases passed vs. executed.

Some other, tried-and-true quality metrics show trends toward production readiness. Tracking and charting the arrival rate and resolution rates of defects (by week or by release) gives insight into whether the deliverable will be ready for production by the goal date. If the resolution rate is less than the arrival rate or the arrival rate is not rapidly decreasing throughout system test, you will need to take action to meet your date.

3. *Determine achievements of specific, completed projects against predefined success criteria.*

After completion of a project, evaluate the accomplishments of the project. Groups often perform 'lessons learned' or project post-mortems to pinpoint areas for process improvement. However, often lessons learned are based on emotional reactions to painful (or successful) personal experiences. So it's good to have some pre-defined metrics to judge success. For the project as a whole, start with measuring success against deliverable dates and budget goals.

Success criteria at the project level might also focus on a functional group that was involved in the project. For example, you could judge the effectiveness and efficiency of the test group for a project. Effectiveness can be judged by metrics that compare the number of major defects found during system test against the number that was visible to the customer in acceptance test and production. Metrics such as the number of test cases executed weekly can reflect on the efficiency of the test group, especially when this number is compared to the rate recorded for the test organization as a whole.

(more)

Metrics: Friend or Foe? (continued)

4. *Set process improvement goals for the organization and measure accomplishments toward those goals.*

Most of the metrics discussed above can be applied at different levels. When implementing metrics you need to consider whether each metric will be implemented at the project or organization level. In a practical situation, the metrics that you set as standard measures should apply to both projects and the organization as a whole. This allows you to judge the success of a project to the entire organization as a whole.

For example, after gathering data for 20 projects performed by the organization this year, you find that 7 of the projects were more than 15% over budget. Looking more closely, you find that those 7 projects were all large projects by your definition. You could start to investigate whether large projects need to be estimated or managed differently.

Quality metrics can be used to pinpoint areas for process improvements and measure success towards those goals. For example, you could see a scenario where root-cause analysis from production defects show that unclear requirements cause 45% of the defects in new implementations. Your organization could set a goal for decreasing that number to 20%, build expertise among the team, and measure that improvement.

Summary

A great deal of work has already been done to define and prove out productive, workable metrics to measure quality of IT services. A well-defined set of metrics can provide visibility into your products and processes while being unobtrusive to your teams. The insight, provided by measurement, can aid customer relations and involvement and help your teams make fact-based decisions.