

MEASURING FOR PROBLEM MANAGEMENT

Problem management covers a variety of activities related to problem detection, response and reporting. It is a continuous cycle that encompasses problem detection, documentation of the problem and its resolution, identification and testing of the solution, resolution, closing the problem, and generating statistical reports. In this article, we describe the minimum set of data and measurements required for effective problem management. Then, we list factors critical to the success of data gathering and measurement.

With the ongoing monitoring and evaluation of key indicators and metrics, the IT service organization is in a better position to ensure that the required quality of service is provided and supported through a cost-effective problem management process.

Benefits of Problem Management

Numerous benefits can be realized from a well-implemented project management discipline:

- **Solve repetitive problems** - Most repetitive problems recur simply because the right solution is not identified, or the same unsuccessful solutions are tried repeatedly by different support staff handling the same type of problem. This situation arises not because the technical support staffers are incapable of finding the right solution, but because no accurate, detailed records have been kept on what has been tried before. A well-implemented problem management discipline prevents repetitive problems from occurring.
- **Reduce number and impact of problems** — Many of the problems encountered by IT organizations have happened before, so if problem management is done correctly, the root causes of such problems can be identified, and appropriate solutions applied, preventing the problem from recurring.
- **Reduce problem resolution time** — An effective problem management discipline “remembers” past solutions to problems, so when those problems occur again elsewhere, the stored knowledge can be used to accelerate resolution, often eliminating the need for problem isolation, identification, and analysis.
- **Improve support staff productivity** — More than 70 percent of a typical IT worker’s time is spent fixing problems instead of designing and deploying new applications or systems. This crisis mode of operation can be traced directly to ineffective problem management systems.

Data Requirements

For an effective problem management discipline, the following information is necessary:

- **Problem information**
 - Date and time that the problem occurred
 - Circumstances prior to problem occurrence
 - Symptoms of the problem
 - Affected systems or applications
 - Impact on the users
- **System configuration data**
 - Hardware and software inventory
 - Configuration diagram
 - Network diagram
 - Cabling diagram
- **Escalation information**
 - Support assignments and skills matrix
 - Vendor agreements and contracts
- **Service Level Agreements**
 - Availability requirements
 - Outage duration and frequency limits
- **Resolution information**
 - Actions done
 - By whom
 - Results
 - Action plans
 - Ultimate resolution

The following measurements are recommended:

- **Number of problems**
 - By severity
 - By affected area
 - By period (daily, weekly, or monthly)
- **Problem resolution time** — The time needed to resolve the problem from the time the call was first placed. Some organizations only count the number of business hours, others count based on a 24-hour per day period. We suggest basing the count on the hours of committed system availability. If you have committed to provide 24 hour a day, 7 days a week availability, measure in terms

of continuous hours. This approach provides a fair and accurate picture of the help desk's efficiency in resolving calls.

- **Number of repeat calls** — The number of calls that represent recurrences of previously closed calls. Set a time limit to use as a basis for defining a call as a repeat call - typically one to two weeks. Your objective is to measure the quality of the help desk's fixes - more repeat calls indicate poorer problem determination and resolution skills.

Data factors that are critical to the success of problem management are:

- **All problems are recorded** - As emphasized above, insignificant problems often lead to major problems; if they are not recorded and monitored, they may cause future outages. Unfortunately, repetitive minor problems are tedious to record manually, so the help desk or individual assigned to record them may fail to log all occurrences. The solution is to automate problem detection and logging, implementing tools that monitor system status and automatically generate problem reports or tickets when necessary.
- **All information pertaining to the problem is available to the problem handler** - All too often, key information about problems and attempts to resolve them is lost when problems are passed between support staffers. This can result in repetition of past activities, and ultimately a prolonged resolution time. All activities, their results, and action plans must be logged and provided to whoever handles a problem next.

Organization Requirements

We have yet to see a problem management discipline work effectively without a help desk to serve as a central location for reporting and managing problems. The help desk serves as the interface between the users and the IT organization, offering many advantages to both IT and users:

- Users have a single entity to contact for any problem - they are not required to identify and track down the right IT staff member. This eliminates both wasted time and frustration.
- The help desk filters calls for IT support, so minor calls no longer trouble IT professionals with more urgent priorities.
- The help desk manages the problem to resolution, ensuring that others within the IT organization take required actions within appropriate timeframes.

Help desk staffers need both technical and support skills. The help desk *as a whole* should have the necessary technical skills to support the entire breadth of installed hardware and software. If your support staff does not yet possess these skills, contract with third-party service providers to step in when a problem cannot be resolved in-house.

Establish an escalation path for unresolved problems, especially for those with high severity or priority. This escalation path should cover all possible major system outages.

The following organization factors are critical to the success of problem management:

- **Owners are assigned to problems** - As managers quickly realize, “If a problem has many owners, it has no real owner.” *Someone* must be ultimately responsible for a problem’s resolution — even if his role is just to manage the resources or people needed to solve the problem. For most problems, the help desk can take this responsibility.
- **An escalation path exists for unresolved problems** Clear escalation paths for unresolved problems are utterly crucial. We have seen some IT organizations with gaps in their support structure for critical system components such as LAN infrastructure or server hardware. Ideally, your escalation paths should lead all the way to the designer or manufacturer of the critical system component. This is why we advocate establishing vendor support agreements. These may be formal maintenance contracts, or simply commitments of priority assistance in the event of a severe problem.

Tools Requirements

For an effective help desk, you need facilities or tools to receive calls, handle and resolve problems, and create reports. Here are the *minimum* tools required:

- **For receiving calls and handling the problem, you need:**
 - A room or location for the help desk staffers
 - A table, an incoming telephone line (for receiving user calls), and an outgoing telephone line (for interacting with the users after the initial call)
 - A call logging facility (e.g., spreadsheet, database program, browser-based intranet application, or commercial help desk software)
 - Space for storing call records, printed manuals, and other resources
- **For resolving the call and creating reports, you need:**
 - A computer system configured to match typical end-user equipment
 - Word processing and charting software
 - A printer
 - Manuals and references
 - Access to system resources as needed (e.g., server administration)

Tools or equipment factors critical to the success of problem management are:

- **Automatic detection of problems** - Ideally, the help desk or IT organization should often detect problems before users do. Early detection not only improves user satisfaction, it also reduces outage duration, since steps to resolve the problem can be taken sooner. This automation is most common in network monitoring where

network resources can be polled for availability, and if the resources cannot be reached, the monitor can generate an alert automatically. Similarly, automated anti-virus software can immediately detect the presence of viruses before the infection spreads to other files, computers, or systems.

- **Logging facility for all problems, with the ability to generate summary reports**
 - The greater the quantity and frequency of problems to be managed, the greater the need for computerization of logging, tracking, and reporting. Help desks that try to make do with manual monitoring and logbooks miss many important problems, or must use far more staff to keep up with the workload. The logging facility can be as simple as a spreadsheet program if the volume of problems is low. However, consider the benefits of help desk management software that provides automatic problem ticket generation, access from remote workstations, automatic report generation, and other advantages.

With a well-defined problem management process in place and supported by data, tools and organization, your IT organization will realize numerous benefits - solve repetitive problems, reduce the number and impact of problems, reduce problem resolution time, and improve support staff productivity.
