

# Preparing for Systems Management

By: Harris Kern's Enterprise Computing Institute

Whether you manage a large IT organization, or a small one, you need some form of systems management discipline. Even small systems can be complex, so you need a way to manage these systems to ensure their availability, performance and security. Otherwise, they won't provide much value to your business.

Systems management covers all aspects of an IT operation, from design and procurement of IT hardware and software to its implementation, problem resolution, security, and much more. In this article we will examine the key elements of systems management and how to identify the requirements for systems management

## Key Elements of Systems Management

To prepare for systems management we first need to understand the key elements. Systems management is the combination of processes, data, tools, and organization needed to manage a system efficiently and effectively. Processes deal with how to perform the task. Data refers to the information required to perform the process. Tools are the equipment needed to perform the processes. Organization refers to the people that support the process and how they are set up to do so.

Systems management is not merely a set of procedures for running a system, rather, it integrates all four elements mentioned above. We have seen too many IT organizations develop exhaustive procedures, yet fail because they have not tackled all four key elements. To illustrate, let us review examples of implementations that lacked one or more of these elements:

*Process element ignored* - Many help desks have no escalation procedures. Obviously, this leads to many complaints by users (and their management), when severe problems do not receive appropriate attention and support. To add insult to injury, in many cases, IT management only becomes aware of these problems when users complain.

*Data element ignored* - Often, help desks fail to adequately identify the data they need to gather from users. One help desk had more-than-adequate staffing, and clear procedures for handling calls. However, nobody quite knew what information to request, and there was no standard form for recording details. Whenever the caller's problem was passed to technical support, the support person usually had to call the user again for more information. Problem resolution was delayed, productivity suffered, and users were dissatisfied. Eventually, users decided that calling the centralized help desk was a waste of time, and began calling support specialists directly.

*Tools element ignored* - This is the most common systems management mistake IT organizations make - they erroneously believe you can simply throw bodies at the problem. One organization's help desk was in total disarray because the help desk staff was demoralized. We discovered they had no computerized means of recording and tracking calls - they were simply using a paper-based logbook. When management asked for weekly reports, the help desk staff needed a whole day simply to sort and filter their call records. Adding staff simply led to more paper shuffling, and even more lost call information.

*Organization element ignored* - Many IT organizations seem to think that you can have an effective help desk simply by seating people in front of a phone to answer user calls. They fail to recognize that it is also important to *organize* the people making up the help desk. Organizing a help desk includes identifying the appropriate staffing and skills requirements, creating clear reporting lines within the help desk organization, and distributing responsibilities efficiently amongst the help desk staff. Without the right people and the proper organizational structure, there is little chance that calls will be handled properly, and there may be little cooperation among the help desk staff. Calls will most likely pass from one person to another without ever getting resolved adequately.

## **Understanding the Systems Management Requirements**

To deploy the optimal systems management infrastructure, you must first thoroughly understand the system you intend to manage. Knowing the technical aspects of your system is not enough. To design a cost-effective, practical systems management infrastructure, consider the following points:

*How critical the system is to the business* - Greater criticality requires better systems management. Consider how much of the business will be affected if the system is not available, in terms of lost productivity, increased expenses, lost business opportunities, and erosion of customer satisfaction.

*Size of the system to manage* - Expect your systems management infrastructure to be increasingly complex as system size increases. Size can be gauged in terms of the amount of resources (hardware, software, people, etc.) being utilized, the amount of data being processed, or the number of users being served.

*Complexity of the system* - The more complex a system, the more difficult it is to manage. Complexity is a measure of the number of different resources interacting and working with each other. A system can be complex for many reasons. For example, it may be complex because multiple operating systems are in use, or because many types of users are sharing the same set of applications (e.g., customers, suppliers, managers, and staff). When multiple components are shared, there is greater risk of dysfunction or reduced performance due to competition for scarce resources.

*Distribution of system components across different locations* - Increasingly, components are distributed across servers and workstations in different buildings, cities, or even countries. Components that are widely dispersed are more difficult to manage effectively. System management processes associated with dispersed components are likely to be slower and more prone to failures.

*Ownership of resources* - It becomes more difficult to coordinate systems if many different owners have the final say as to what is done, simply because you must get permission from many different people and coordinate all their decisions and actions. In a highly distributed computing environment, it is common to have different owners for the workstations, servers, communication facilities (often owned by a telecommunications company or service provider), and many others.

*Security requirements* - Systems and information assets that must be protected introduce new complexities, such as access control and authentication, making them more difficult to manage.

*Skill sets* - When devising a systems management infrastructure, consider not only the skills of the IT organization, but also those of users. As systems become increasingly distributed, management responsibilities may also be distributed, and everyone involved is likely to need new skills and training.

*New technologies* - Consider forthcoming technologies and your organization's long term IT goals, so the systems management infrastructure you design will not be made obsolete by rapid change.

*Environmental dependencies* - It may be difficult or impossible to control the external environment in which your systems operate, but you can limit the impact of changes in the external environment on the operations of your systems. For example, if the power supplied to your equipment is prone to outages, you can deploy backup power generation facilities and establish procedures for switching to them.

*Standards* - You cannot deploy the right tools without considering corporate hardware and software standardization policies. Also consider company operations rules, such as security guidelines and employee management standards.

### **Summary**

In this article we described the initial steps you need to take in preparing for systems management. We examine the key elements of systems management that are needed to manage a system efficiently and effectively: the combination of processes, data, tools, and organization. We also examined the key points that need to be considered in designing a cost-effective, practical systems management infrastructure. The next step is to identify the key system management disciplines and develop a plan to implement them