# Integrating
# ASSET Management
# with
# Enterprise Systems Management
# &
# Information Technology Projects


## Bob Baird
## Consultant
### Strategic Operational Solutions Ltd.



This document outlines the strategic value of developing and integrating Asset Management as one of the primary Enterprise Systems Management disciplines. Integrating Asset Management with Change Management and Problem Management provides the base triangle for all enterprise management. Integrating Asset Management with the remaining disciplines provides a proactive, end-to-end seamless infrastructure.

# Table of Contents

## INTRODUCTION

**For the purposes of this document an Information Technology (I/T) asset refers to hardware or software purchased to provide business value. These assets are represented within an I/T enterprise as managed or unmanaged elements.**

**All information technology enterprises consist of elements that make up the network, desktops and servers. The combination of enterprise elements creates the I/T infrastructure that provides information technology services and value throughout the business.**

**The objective of Enterprise Systems Management is to manage all elements to sustain the level of service agreed to, while implementing adequate change to maintain the business advantage gained by using information technology.**

**The objective of Enterprise I/T Projects is to create positive change to the I/T infrastructure that meets business needs, which may include adding function, creating stability or cutting costs.**

**In both cases Systems Management and I/T projects, the actions of the deliverable affect those I/T elements earlier described. The fundamental requirement is to have or create an accurate list of all enterprise elements that make up the infrastructure. Without this list neither Systems Management nor the I/T Project have any real information on which to base the predictable or measurable impact of their deliverables.**

**The creation, delivery and maintenance of this list is commonly described as Asset Management.**

## Elements Come in Many Flavours

### Understanding Network Elements

**The elements that make up the network each serve a unique purpose, but when combined, they create the base infrastructure that acts as the highway for electronic information. The common elements are as follows:**

- **Routers – control traffic flow and ensure the correct delivery of data**

- **Switches – can act as routers, but generally control flow within an area.**
- **Hubs – can fulfil a similar function as switches, but normally with less automation.**
- **Dial-in Controllers – Manage the telephony to I/T enterprise connectivity.**
- **Bridges – an older form of connectivity between multiple network loops or local area networks.**
- **Fire Walls – Control traffic flow by analyzing who has access and who does not. This is primarily a security function.**

### Knowing the Desktop Elements

**The desktop computers or commonly called workstations form the vast majority of the enterprise elements. Primarily these elements are directly connected to the infrastructure via special cards that reside inside the computer. However, there are many desktops that do not connect directly to the network. These machines may have a modem using dial-in access. Others can connect via wireless communications or even by satellite.**

### Desktops come in many sizes and shapes.

- **Actual desktop machines that sit on a desk.**
- **Tower machines that sit on the floor.**
- **Laptop machines designed for portability.**

### Looking at Server Elements

**Servers deliver functionality and data to the desktop. They are normally business critical elements that house all business data.**

**Servers also come in many flavours categorized by operating system or technology. The following are examples of servers:**

- **NT Servers –**
- **UNIX Servers –**
- **MAC Servers –**
- **VMS Servers –**
- **Novell Servers –**
- **Main Frame Servers -**
- **And many more –**

## UNDERSTANDING ELEMENT MANAGEMENT

### Defining Managed Elements

**Managed Elements are those that actively participate in asset management by sharing their knowledge about themselves. This data is either pulled from the element or is pushed by the element to a central repository. In either case the data is collected in a central location and transformed into meaningful information about each element.**

**The following information may be gathered from a desktop or a server:**

- **Type, make, model, and serial number of the box.**
- **The Hard drive size, utilization and memory size.**
- **Applications and operating software names and version levels.**
- **The name and ID of the last person using that element.**
- **The present Internet Protocol (IP) address assigned to that element.**

**The use of this data varies from task to task, but generally it enables real time monitoring and managing of elements that turns them from unmanaged into managed elements.**

### Managed Vs. Unmanaged Elements

**A managed element provides information used to ensure it can be monitored and maintained from a central location.**

**An unmanaged element offers no capability to be centrally monitored or maintained. It exists as an unknown entity on the network.**

**All I/T elements have the ability to introduce problems and changes into the enterprise that may damage the infrastructure. Unmanaged elements create a much larger risk, as there is no known information to mitigate the risk.**

### Correlating the Past / Present / Future

**The value of managed verses unmanaged is similar to the analogy that if you do not have a known past, it is very difficult to determine who you are and impossible to predict or manage what you may become.**

**The same is true for any I/T element. Systems Management requires a past and a present history of all elements to perform any proactive prediction or real-time management. Without the basic history and knowledge of the configuration and physical location of elements, Systems Management will not work. In a similar manner, any enterprise-wide project may be in for major surprises if a full understanding of what is in the enterprise does not exist. A good example of this is the number of servers that are documented as part of the network compared to the actual number of servers that have been created with change management.**

### Reach Out and Touch Someone

**Any asset management solution depends on gathering an inventory of the elements that are part of the enterprise. This includes elements connected to the infrastructure and may also include elements owned by the enterprise, but not logically attached to the infrastructure.**

**There are two ways of gathering information: electronically or manually. Both methods have positive and negative factors.**

**Collecting information manually involves a wall-to-wall inventory gathered by people going through every building, floor and room finding the equipment, writing down the data and documenting it to a single repository. The largest benefit comes in ensuring that all elements are uncovered. The largest downfall is proving that all elements are uncovered and that nothing moved or was changed during the inventory capture. This method is also very costly and is almost always inaccurate within weeks.**

**Collecting information electronically involves using tools and processes that reach out and touch the desktops, servers and network components. Modern tools have the capability of distributing a probe to all machines. The probe gathers data on software and hardware that is transferred to a central repository. It can be gathered as often as desired to maintain accuracy. One challenge is to gather peripheral equipment such as printers, monitors, and scanners attached to either servers or desktops. The primary challenge is ensuring the probe is active in all elements that can connect to the network.**

### Make sure you Touch Everything

**The power of network management can enable you to touch everything. Network management tools can scan the whole network from one spot without using probes in each element. The information is limited, but it does ensure an accurate list of every element connected to the network. It**

**also includes enough information to provide a logical location and a close physical location.**

**Both parts, the network data and the probe data can be kept in a database that is easily manipulated to provide the needed reports.**

### Know What and Who You are Managing

**It is equally important to understand who is using the network and what elements they are using. Normally companies keep accurate human resources documentation that includes names, computer Ids, phone numbers, locations, and more.**

**This human resources data can be correlated to the element data to complete the picture of who and what is in the enterprise.**

### Keep in Touch with the I/T Environment (Asset vs. Event Management)

**The asset management solution provides an accurate account of all elements that have connected to the infrastructure. The information is as accurate as the last capture, normally every twenty-four hours. If multiple copies of the database are kept, then it is possible to slowly build historical data. This information is very useful in systems management and project management. However, even more accurate information is required for proactive Problem & Change Management. The ability to keep in touch with the environment and activities in the environment becomes a struggle.**

**Event management is a normal function provided by many systems management tools. The information provided includes instant reports on element problems and footnotes or automation detailing how to deal with the event. Secondly, changes that occur either within an element or within the network are automatically reported to a central station. This information can be used to verify managed changes and to control unmanaged changes.**

**The combination of Event Management and Asset Management form a comprehensive solution for ensuring the success of both Systems Management and I/T project management.**

## Using Asset and Event Management

### Understanding Systems Management

**I/T requires a set of disciplines to describe the activities involved to effectively control an I/T infrastructure that makes up the service delivery for the enterprise. These disciplines are commonly referred to as Systems Management. Usually these disciplines are documented in some**

**form of methodology. Vendors have their own view of how this should look.**

**Regardless of vendor preference or methodology, the fundamental disciplines are:**
**Top (4)**

- **Asset Management**
  **(what is being managed)**
- **Problem Management**
  **(handling problems)**
- **Change Management**
  **(how to manage changes)**
- **Customer Support or Help Desk**
  **(who is the primary client contact & interface)**

**Extended List (but not exhaustive)**

- **Security Management**
- **Operational Services**
- **Managing Availability using Asset Management**
- **Managing I/T Continuity (Business Resumption Planning)**
- **Managing Performance & Capacity Planning**
- **Application Design & Maintenance**

**Each discipline has four components that must work in harmony:**

1. **Organizational Requirements: must be defined and documented as input for the final solution.**
2. **Processes: are required to ensure and end-to-end seamless flow of control for the organization to follow. A process is definable, repeatable and above all measurable.**
3. **Information or Data Requirements: must include all the requirements for the process to work and the accessibility for the organization to make effective use of the information.**
4. **Tools Requirements: must be defined as per the needs of the other three components. The tools should be chosen to match the Systems Management requirements and not the other way around.**

PROBLEM MGMT

## Integrating Problem Management

**Problem management can be described as the actions necessary to detect, report, correct and manage the impact of any issue that negatively affects the availability of an I/T service.**

**Problem management requires a proactive approach to minimize impact and maximize availability. The integration of Problem Management with Asset & Inventory Management provides much of this function.**

**The Problem Co-ordinator and all other functions use Event Management to detect and report a specific problem. In some cases automation can be invoked to bypass or correct a problem. The Asset Management system can provide information as to who owns the element, where it is located, and any hardware or software related questions.**

CHANGE MGMT

## Integrating Change Management

**Change management can be described as the actions necessary to control the possible impact of any change to the delivery of I/T services, while still allowing business growth through managed change.**

**Asset Management information plays a vital role in Change Management as all changes must be done to an element. The members of the change team need to know the logical and physical address plus vital statistics information about the element. If the change requires a software rollout to many workstations, then it would be mandatory to know which of the workstations are not capable of handling the new configuration. In a similar manner, after the rollout it is to ensure what and how many workstations actually received the update. All of this and more can be taken from the Asset Management System.**

HELP DESK

## Integrating the Customer Support Centre

**The Support Centre is the primary contact for the client and the interface between the client and the service vendor. The client's perception of service and value all starts here.**

**There are two methodologies in providing service, reactive or proactive. The reactive method provides service upon demand and reacts with tools that are also passive. The mean time to fix is usually longer and the client's perception of service is probably neutral depending on history.**

**The proactive approach to service is based on tools and processes that allow the Support Centre to be aware of the problem before the client is even aware. When the client calls there is no delay as the Support Person is aware of who is calling, their environment, the hardware and software the client uses, the last time they called and probably some knowledge of the problem they are encountering.**

**The level of service provided and the perception of value held by the client depends on the expertise of the Support Centre staff and the tools they use.**

## Understanding In-depth Automated Systems Management

SECURITY MGMT

### Security Management and the Enterprise

**Security Management is a hot topic today and is probably only second to the Year 2000 issues. I/T Security is comprised of a number of policies and procedures to which people must adhere. However, a bigger issue is the employees and contractors that do not adhere to the policies. There are also non-employees, hackers, who make an effort to bypass the security. There are not enough I/T security police to manually monitor these infractions.**

**The Asset Management system provides a true picture of elements today and an updated picture every day. Simple comparisons day-by-day provide the big picture of anything that changes hardware or software.**

**Event Management plays a role here too. Events are captured according to policies incorporated in automation. Major changes of any kind have the potential to be a security risk. Similarly problems should be examined to ensure no security has been breached.**

OPERATION

### Operational Services for the Enterprise

**I/T Operations involves the day-to-day management and house keeping of the I/T Enterprise. Asset management provides Operations with the day-to-day picture of all of the managed elements within the enterprise. The combination of Asset and Event Management allows operations to manage and maintain the enterprise proactively.**

AVAILABILITY MGMT

### Managing Availability

**Availability Management is a measured process. The meaning of the measurement and its value to the business is most often measured against Service Level Agreements stating what performance and availability is to be delivered. Enterprise-wide availability can only be understood if a**

**clear vision of all the elements in the enterprise are known, identified, and tracked.**

### Managing I/T Continuity

**Business Resumption Services (BRS) is comprised of planning, designing and executing the recovery of I/T services following a disaster or other circumstances that caused extended availability outages to mission critical applications. The processes involved in keeping the service current demands access to an accurate list of all managed elements including hardware and software.**

**The Asset Management System provides this service and assists BRS to stay current and ready for any event.**

PERFORMANCE MGMT

### Managing Performance & Capacity Planning

**Performance Management is a set of processes used to track not only availability, but also the level of availability delivered to the client. Capacity Planning is the quality improvement process resulting from the proactive measurement of performance and the actions taken to ensure service delivery.**

**Performance measurements and the analysis of the data requires a full and up-to-date view of the enterprise and all the managed elements. Asset Management, when integrated with Performance Management provides a current picture and a clear vision of what to measure, how to measure it, and the possible implications of one element to the other elements.**

**Event Management can be used to proactively create alerts on performance that may vary from the service level agreement.**

APPLICATION
DESIGN & MAINTENANCE

### Managing Application Design & Maintenance

**This discipline requires some unique processes and some common processes. Change Management within Application Design and Maintenance must consider version control and software distribution. However, Application Design and Maintenance must also play within the bounds of Enterprise Systems Management, especially Change Management.**

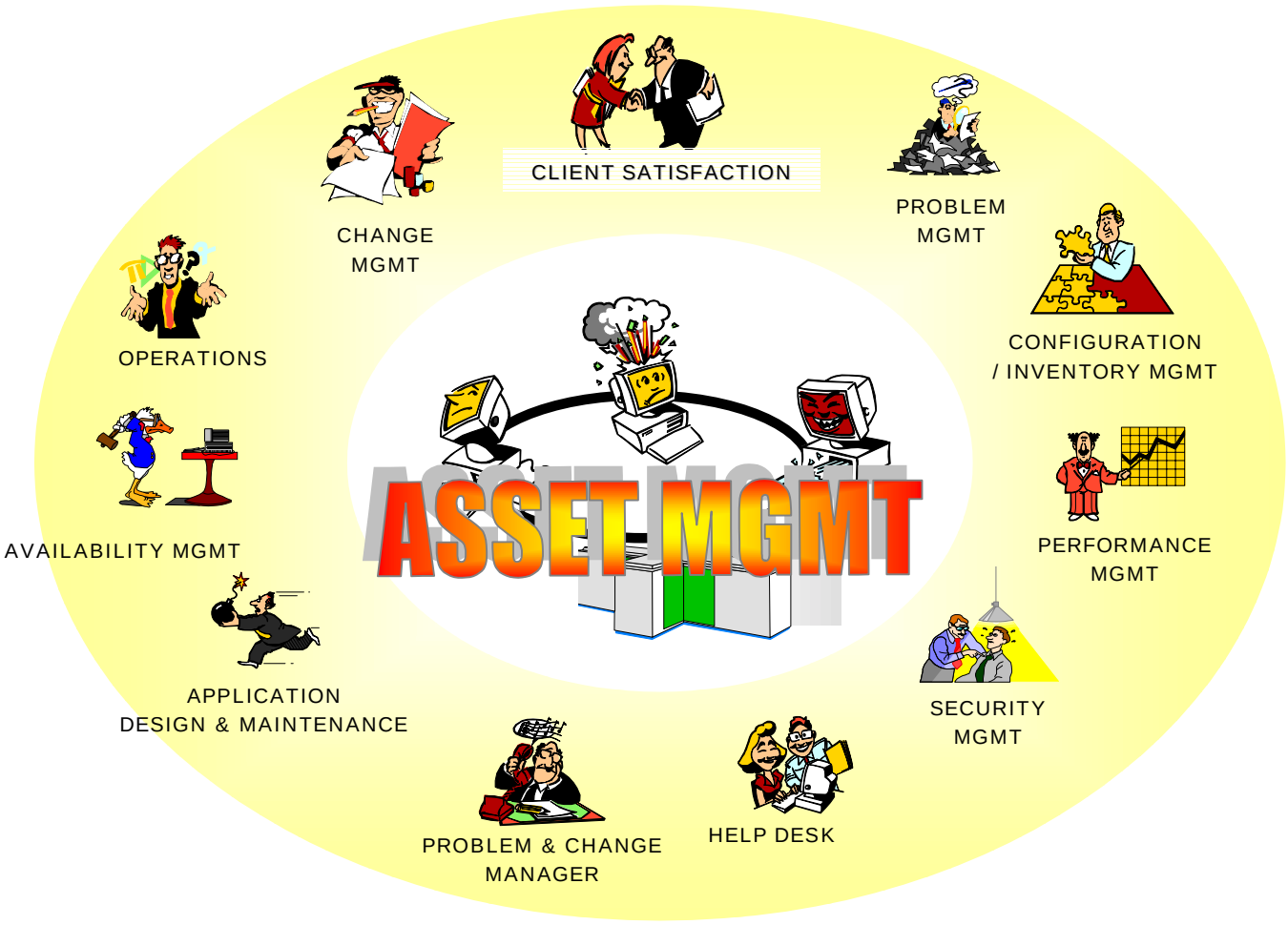
**Application Design and Maintenance also requires an accurate picture of the enterprise and all of the managed elements to ensure accurate distribution, ongoing maintenance and tight control.**

**Once again, the Asset Management System can provide this data and keep it current day-by-day.**

## Summarizing Enterprise Systems Management & Asset Management

**Enterprise Systems Management includes monitoring, measuring and managing activities related to the elements that make up the I/T infrastructure. Asset Management provides the data required to understand what is monitored, measured, and managed.**

**Asset Management is the focal point of Enterprise Systems Management. All of the various Systems Management disciplines use a combination of Organization, Process, Data and Tools to perform a function. Asset Management helps manage the smooth integration of the Systems Management discipline.**



## Managing I/T Enterprise-Wide Project Management

### Understanding the Project Scope

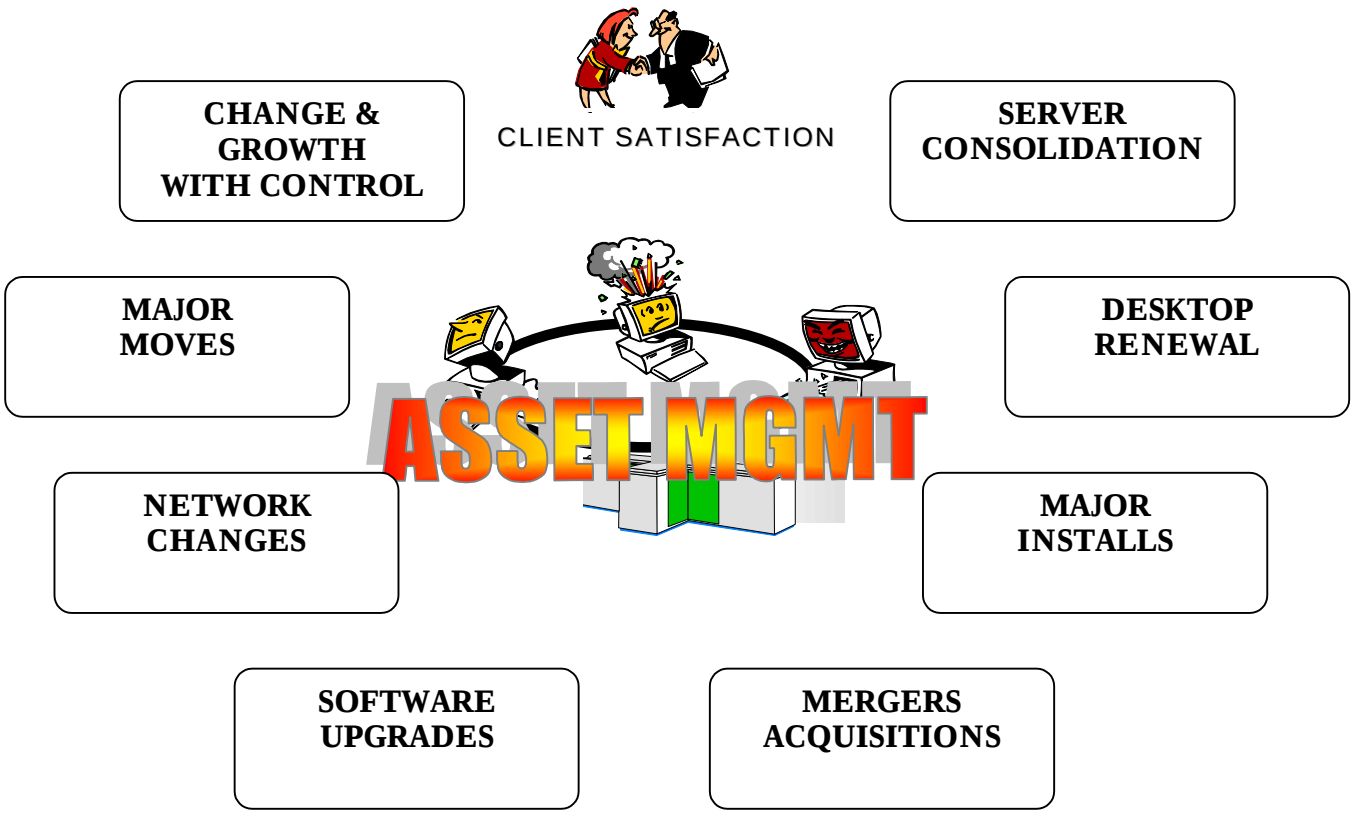
**An I/T enterprise-wide project is defined as the design and delivery of a new service that alters the business processes for a majority of clients. The scope of the project must include the ability to understand the 'who, what, when, where and how many' of the elements are being affected.**

### Do you Really Know What's Out There

**A proactive, real time Asset Management System provides many of the answers. If the questions, and the answers are not considered, the project is at risk. The risk can result in either delivery problems or financial loss to the project.**

**The world of wide spread network centric or distributed computing offers a unique challenge as most companies have distributed budgets and distributed purchasing. This has resulted in not knowing how many assets there are, who has them, where they are or if they are still being used for business purposes.**

**Controlled growth issues, server consolidation, technical upgrading and many other projects cannot be completed without Asset Management.**



## PUTTING IT ALL TOGETHER

### The Big Picture

**The big picture is the I/T Enterprise. The Enterprise is the delivery of I/T services. I/T services are the whole reason that the Enterprise exists and it must be maintained and protected at all times.**

**The Asset Management System is the primary deliverable of the big picture and it should play an integral part in delivering service to the client.**

### Think Integration

**Integration is the glue that binds all of the Systems Management disciplines together to deliver value. Each of the disciplines operating on their own, would only cause mass confusion and degraded service.**

**Any Enterprise-wide I/T project has to work with accurate data in order to deliver value on time and within budget. Without Asset Management services the project has a high risk of failure.**

**The integration of Asset Management with the Systems Management disciplines provides the seamless communication of accurate data. This information and the processes around it ensures continuity between disciplines. There are no gaps, there are no overlaps and service is delivered.**

### Think Business Value

**Finally, the ultimate goal is to provide I/T business value. Systems Management can provide the overall control required to deliver business value. I/T projects can provide I/T business value by delivering new functionality.**

**Asset Management can provide the big picture information with the detailed data to ensure end-to-end Enterprise Management.**

**The true measure of business value comes down to the client's perception and satisfaction with the services provided. Communications is the key and Asset Management is really just a part of delivering communications between the enterprise and the Service Provider.**