
A FOOL WITH A TOOL IS STILL A FOOL!

The HP OpenView's Approach To Implementing A Service Management Solution Through People, Process & Technology

White Paper

NOTE:

This white paper was developed with input from the original ITIL set of documentation. Although the process terms have been updated to reflect the new names, and the process definition have been revised slightly, some of the definitions may not be 100% accurate.

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HP OPENVIEW

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Introduction

There are a lot of clients (both of HP and other vendors) that have implemented tools in hopes of solving business problems, only to discover that the root cause of the problem ends up being process related.

This paper identifies ways in which IT can start to maximize their effectiveness by identifying a process for IT to mature into a valued business partner in the organization. This development starts with the realization that perhaps communication with the rest of the organization is a good thing, and ends with the development of a set of processes that when allied with tools empowers IT to provide a quality, customer focussed service at an agreed upon price.

This paper, based upon ITIL processes, will enable the reader to understand the daunting task of implementing these processes, and how tools can be used to automate and control the processes

Background:

A 1997 Gartner Group (Stamford, CT) study found that 18 months after the date of purchase, only 25 percent of respondents had successfully implemented enterprise-management solutions. After 36 months, the number of successful installations climbed to only 30 percent. These numbers show that putting business-process-oriented, end-to-end management in place is an expensive and challenging operation. Enterprises with thousands of employees will likely pay hundreds of thousands, if not millions, of dollars for a comprehensive platform-based solution, not including consulting and installation fees or the time that employees spend evaluating, deploying, and debugging. Clearly, a successful implementation will need support from top-level executives, and experienced program managers should be in charge of planning and execution.

Expectations will have to be managed carefully to prevent disillusionment, yet the benefits of the system will need to be promoted to fund a project of this scale.

IT managers who enter into an enterprise-scale management project with their eyes open to the pitfalls can avoid becoming another statistic. To justify a large expenditure on enterprise management, it's important to identify particular problems with quantifiable costs, such as excessive downtime resulting from specific faults, or inefficiency that could result from poor system performance. (Network Magazine, 12/98 "In search of Integrated Management, Steve Steinke)

Phase one in maximizing the effectiveness of IT is to distinguish between System Management and Service Management. These two roles are totally different and yet quite often IT departments try and use the tools of System Management to implement Service Management solutions.

System Management tools are focussed on supporting the IT infrastructure components. System Management is often comprised of a management station and a set of monitoring agents. These agents either take corrective actions on the managed nodes or report events back to a master console. Once at the master console other agents may take action, an operator may take action, and/or the event will be logged.

Service Management is focussed on the business customer's requirements. This implies that the customer's requirements are known and not assumed. It is designed around maximizing availability, responsiveness, cost effectiveness, and a quality service to the customers At an agreed upon cost level.

Although both System and Service Management environments can exist independently, in order to maximize the levels of customer satisfaction a strong foundation needs to be established using System Management tools. As the ultimate goal is to achieve Service Management it is imperative that Systems Management tools have a true Service Management view. This means that tools should be able to view the environment as the customer sees it - a true end to end view.

All too often today we see environments where clients are trying to fix problems, either partially or fully, through the implementation of technology, only to discover that the problem, in some form or another, still remains. Even if the problem does get addressed it is sometimes difficult to realize a return on the investment made in the tools and the effort of the implementation. Quite often, because the real needs of the organization have not been fully identified, and the chosen tool not fully investigated, the implementation often proves to be more of an effort than the problem merits, and in a high percentage of these cases the implementation of the tool fails.

The root cause of these failures often lie in the fact that the real problem that needs to be addressed is actually a symptom of a lack of processes. Information Technology departments have sprung up to support an exponential growth in client-server environments. IT does not have the time to manage their environments. IT continues to act in a very reactive operations-focused manner, never having the time to stop and fully understand what the business requires of the IT department. Or the reverse is true, with IT management remaining at the fifty thousand foot level without a practical roadmap for operational implementation. Tools are implemented to manage at the component level without regard to how each of the components interrelate, and how the action of the individual components affect the level of service delivered to the business users.

Most IT shops are viewed, both by their users, as well as internally, as implementers and managers of technology. For IT to be successful this mold has to be broken and a paradigm shift realized. IT has to become a valued business partner to the organization, a department that makes direct contributions to the success of the business. These contributions can come in several forms, examples being:

- increased productivity,
- improved time to market,
- improved customer satisfaction,
- improved profitability,
- etc.

In order for IT to move into the role of a valued business partner several tightly coupled steps have to be taken. IT has to be able to provide a reliable, high quality service for an acceptable fee. This is not achieved through tools alone; *any fool can implement a tool!* The tools need to be implemented alongside proven processes that will leverage off of them. Processes that support the business objectives.

IT is very willing to implement the technology and tools, however may be hesitant to implement processes. It would be easy to assume that proven IT processes do not exist, however quite the contrary is true. IT processes have existed for a number of years. In-fact, in most mainframe shops they are stringently followed, well documented, proven, and are once more becoming a requirement in the client-server environment. One such set of processes is fully documented and is know as the "IT Infrastructure Library", or simply "ITIL".

WHAT IS ITIL, AND WHY SHOULD I USE IT AS THE BASIS FOR MY IT MANAGEMENT INFRASTRUCTURE?

The Processes:

The Central Computing and Telecommunication Agency (CCTA) in the United Kingdom developed ITIL, to help organizations improve the way they use IT. The IT Infrastructure Library was developed in the 80's by a collaboration of subject experts, practitioners, consultants and trainers, and it is linked to a user group, the "IT Infrastructure Management Forum LTD".

The goal of ITIL is to identify the processes that need to be in-place to provide a quality, optimal level of service, with added value to the IT customer, at a justifiable cost. ITIL identifies twenty-four service modules each of which address the organization of service delivery in the area of supply of automated information systems, grouped into the following management areas: Service Support, Service Delivery, Environmental Strategy, Office Environment, Computer Operations, Environmental Management, Software Support, and Networks. Of the twenty-four modules, ten are critical to the success of the IT organization, and focus on the management of the IT infrastructure. These are grouped under Service Support and Service Delivery, and are:

SERVICE SUPPORT	SERVICE DELIVERY
Configuration Management	Service Level Management
Help Desk	Capacity Management
Problem Management	IT Service Continuity Management
Change Management	Availability Management
Release Management	Financial Management for IT Services

The definition of quality, as formulated by the International Organization for Standardization (ISO), states "*Quality is the totality of features and characteristics of a product or service that bears on its ability to meet a stated or implied need (ISO 8402)*". This very definition implies that before a quality service can be delivered, the needs of the business community for which the service is being delivered have to be known, which in-turn implies that the IT department is communicating with the business units.

What is the IT infrastructure that needs to be managed?

- Hardware
- Software
- Processes
- Documentation
- People

ITIL should be used as the basis for the management infrastructure because it is a tried and proven set of documented processes that can be either implemented alone or as a full suite. There is nothing extreme in these processes. They make sense and given the time, IT managers would intuitively derive a similar set of processes.

The Processes that need to be in place to manage the Infrastructure:

Service Support

In order for business to function effectively IT should be fully aware of their customers service requirements. In addition IT customers need to know what services they can and cannot expect from their IT provider. This implies that IT needs to understand what services are required, what the impact of an interruption in service means to the business, and how best to support the business unit in an ever changing environment. IT needs to be able to balance the stability of the service with the flexibility of the system, and be able to provide quality service to the business units. In order to achieve this balancing act, a set of proven processes need to be in-place to control the environment through the inevitable changes, thus minimizing the effect upon the supported business. These processes are:

- Configuration Management
- Help Desk
- Problem Management
- Change Management
- Release Management
- Service Level Management
- Capacity Management
- Availability Management
- IT Service Continuity Management
- Financial Management for IT Services

The following sections review these processes.

Service Support

In order for business to function effectively IT should be 'dialed in' to their service requirements. This implies that IT needs to understand what services are required, what the impact of an interruption in service means to the business, and how best to support the business unit in an ever changing environment. IT needs to be able to balance the stability of the service with the flexibility of the system, and be able to provide quality service to the business units. In order to achieve this balancing act, a set of proven processes need to be in-place to control the environment through the inevitable changes, thus minimizing the effect upon the supported business. The following sections review these processes.

Configuration Management:

The objective of Configuration Management is to manage all of the components of the IT Infrastructure by identifying and recording each Configuration Item in a Configuration Management DataBase (CMDB).

A second objective of Configuration Management is to be able to report on the Configuration Items (CIs) (1). This includes such management information as problem history, change history, revision information, status information, relationship information, etc.

The activities associated with Configuration Management include:
Identification:

This is the process of locating and labeling all of the CIs. This includes hardware, software, documentation (on applications as well as processes), as well as people (although the labeling of people can be quite tricky!).

This activity involves freezing the environment, or taking a baseline, and entering the CIs into the CMDB.

Control:

Once the CIs have been entered into the CMDB it is imperative that all new or changed CIs get recorded into the CMDB. In order to control the environment processes need to be in place for change management. Only approved changes (by the change management processes) can be made to the IT infrastructure, and all changes to the CIs must be logged in the CMDB.

Additionally, baselines can be recorded in the CMDB to identify stable points in time. These baselines can then be used as a stable environment to which the IT infrastructure can be returned in the event that the quality of service delivered by IT can no longer be delivered, for example in the event of a disaster where a contingency plan needs to be enacted.

Status Accounting:

This activity involves updating the status of the CIs as changes occur. These changes might be in the form of upgrades, changes in versions, changes in use (i.e. development to test to production to archive), or any other changes that affect the C.I.

Verification:

This activity is essentially an audit of the CIs ensuring that the content of the CMDB reflects what is actually out on the shop floor. Any discrepancies will need to be investigated, and the Configuration Management process or the responsible related process tuned.

Management Information:

Management Information is a key activity used to justify the existence of the Configuration Management process. These reports will include such information as:

- Condition of, and developments in , the IT infrastructure;
- Summary of components that are not functioning well for each supplier or development group;
- (graphical) representation of (a part of) the IT infrastructure;
- configuration data for determination of costs;
- CIs involved in a change to the infrastructure;
- Growth in IT infrastructure;
- Results of verification of CMDB;
- Degree of mutation in the infrastructure.

(1) A Configuration Item is any item in the IT Infrastructure that needs to be managed. CIs may vary widely from organization to organization. A PC might constitute a C.I., or the level of required management might necessitate each of the components (memory card, LAN card, keyboard, etc) in the PC to be individual CIs

Help Desk

The Help Desk is the day-to-day point of contact for all users within the IT organization. This is where they can report their complaints, queries, comments and input in regards to their IT services. As such, Help Desk needs to be accessible and responsive to the customer base. The Help Desk also serves as the focal point for the customers to gain access to IT and, as such, they are responsible for showing the value of the IT organization to the business customers. Help Desk is also responsible for restoring service to the business community as quickly as possible. This restoration of service may come in the form of guidance, a fix, or a workaround to a particular incident. Help Desk is not responsible for analyzing the incident beyond determining if it is a known problem. This in-depth analysis is the responsibility of the Problem Management process.

Several activities are associated with the Help Desk process. These include:

Communication & Promotion:

The Help Desk staff must be fully aware of all of the services that IT offers, and how these services have been designed to help the business users. Help Desk staff is responsible for promoting these services in such a way as to maximize their effectiveness, and subsequently the success of the business units.

Managing Incident Control:

All calls that come in to the Help Desk, irrespective of their source, are logged as incidents. The responsibility of the Help Desk is to ensure the continuity of agreed upon service levels. Any disruption in services must be restored as soon as possible. A disruption in service usually means a breakdown in the business process supported by the service. Incident control means that incidents are recovered as quickly as possible.

Incident Control can be divided into a number of tasks:

- Incident recording & alerting;

Incidents might be reported by business users, IT users, or automated tools. Regardless of the method of reporting, all incidents need to be recorded as soon they are detected. This is important in preventing any further progress, and serves important information in diagnosis. The symptoms of the incident, along with the possible related CI, must all be recorded.

- Initial support and classification;

This step assigns a level of priority to the incident based upon the impact (how many business users are affected by the incident), the urgency (how much impact does this incident have), and the expected effort (what resources and for how long will be required to address this incident).

- Investigation & diagnosis;

The incident needs to be closed as quickly as possible, either with education, a solution, or a workaround. This activity will determine if other resources need to be brought in to resolve the incident, or whether this is a known problem for which a solution already exists.

- Resolution and recovery;

This activity is a natural progression from the investigation and diagnosis, and results in the incident being resolved. The resolution will be recorded in the incident database, and may result in a change request being generated to alter a C.I. in some way.

- Incident closure.

This activity can only be performed once a solution has been found, implemented and the customer is satisfied that the service has been restored to agreed upon service levels. Business user agreement, usually in the form of feedback, is required before the incident can be closed.

Management Information:

Not only can information on the effectiveness of the Help Desk be reported, (i.e. number of calls, number and time to close calls), but also information pertaining to customer and business needs can also be highlighted. For example, training requirements, product reliability, product functionality and business needs.

All of this information is available from the incident database.

Problem Management

The objective of problem management is to identify and remove errors in the IT infrastructure in order to ensure maximum stability in IT services.

Several activities are associated with Problem Management. These include:

Incident Control:

For incidents identified in the Help Desk process that can't be linked to an existing problem or known error, or for which there is no routine or procedural solution, a resource from Problem Management will need to get involved. This involvement will entail defining the problem for the incident, finding a temporary solution through research and diagnosis, and documenting the incident and solution.

Problem Control:

Similar to the Help Desk activities for managing an incident, Problem Management needs to perform several activities to ensure the speedy resolution to the problem. Once again these sub-activities include:

- Problem identification and recording;
- Classification;
- Allocation of staff and resources;
- Research and diagnosis.

Error Control:

When the cause of an incident has been identified through the research and diagnosis of the problem, the result is a known error. Error control is responsible for removing errors and minimizing the consequences of existing errors. Error control must therefore create a solution for each known error. This solution will often involve making changes to the infrastructure, and will therefore have to involve both Change Management as well as Configuration Management. The known error can only be closed once the changes have taken place and it has been established that the cause of the incident has been removed.

Proactive Problem Management

Once known errors have been identified and closed by the changes to the C.I., then Problem Management can investigate how other CIs will be affected, and make the appropriate 'request for change' so as to avoid similar incidents and problems occurring in the future.

Management Information.

Management reports will be generated detailing information pertaining to time, resources and costs required to solve problems, reliability and resilience of components in the IT infrastructure, the frequency and duration of incidents and problems and the resulting impact of the incidents and problems on the business.

Change Management

The objective of Change Management is to ensure that standardized methods and techniques are used for efficient and immediate handling of all changes, so that change related problems are reduced or altogether prevented.

The definition of change is 'an action that results in a new status for one or more IT infrastructure Configuration Items'.

All changes that affect the status of a C.I. must be managed and controlled through the Change Management process.

Several activities are associated with the Change Management process. These include:

Classification:

All requests for change need to be formalized, entering the system as an RFC (request for change) which documents what the change is, why it is required, when it is required and what the change will effect. All of this information is required so that the change can be evaluated. Once received, the RFC is further evaluated, prioritized and categorized. The classification is given to the change based upon urgency, the consequences of the change, the staff and resource requirements to implement the change and the cost associated with the change.

Assessment & Planning:

Once the RFC has been classified, the change will be put before the Change Manager, the Change Advisory Board, or the IT Executive Committee. It is these individuals, or teams, that will determine if and when the change will be dealt with.

Coordination:

Once approved in the assessment and planning phase the formally authorized RFC can start to be realized. This realization involves the building, testing, definition of back-out plan, and implementation of the change.

The coordination of the change finishes after the change has been fully implemented and reviewed. The change has achieved the desired results, and if the change has corrected an error, the recorded error can be regarded as being repaired.

Provision of Management Information:

This includes such statistics as:

- the number of requested changes
- the number of successful changes
- the number of changes backed out
- problems resulting from change
- costs associated with the change
- the number of urgent changes.

All of this information can be invaluable in identifying areas in the IT infrastructure that are affecting the business processes.

Release Management:

The objective of Release Management is to secure all software configuration items, guaranteeing that only tested and correct versions of authorized software are made available for operation.

In order to control the versions of software a Definitive Software Library (DSL) has to be built. This DSL might be either a physical or a logical vault. Whichever the form, it is a location where authorized versions of software (both in-house developed as well as externally purchased software) are stored. It is from the DSL that software is released for testing, production, and archival.

The activities associated with Release Management include management of the DSL, ensuring that correct versions of the code are made available, and ensuring that only one copy of the code is available in any one environment at a time. Additionally, Release Management is responsible for the distribution and implementation of the correct number of copies in the systems within a given environment. As with all of the other operational management processes, Release Management is also responsible for the production of management reports, including such topics as deviations from planning and budget, software CIs not accepted, number of successful releases, number of urgent releases, etc.

Service Delivery

Having delivered at the operational level, it is now important to deliver on the tactical level. How is the level of service sustained and improved upon? How can this level of service be maintained in the face of adversity? How much does the level of service cost, and what is the cost of change? How is new business introduced into the existing environment with minimal impact? All of these issues need to be addressed in-order to maximize customer satisfaction and allow IT to be a valued business partner.

Service Level Management:

The objective of Service Level Management is ensuring agreement to, and monitoring of an optimal level of IT service in close cooperation between the provider and the customer, at a justifiable cost. This implies continued interaction between the service provider and the service recipient.

Service Level management focuses on the level of service from a business perspective, not an IT perspective. End-to-end management of the service is monitored, managed and reported, and although the utilization of the individual components (CIs) is important, it is the level of service provided to the business unit which is key.

In order to provide a level of service to the business units it is imperative that IT understands what services can be provided. This is achieved by developing a service catalogue. This catalogue defines the default services provided as well as the default levels and options. It is this catalogue that is used to inform the clients of the services that they can expect, along with default levels of at which the service can be delivered.

There are three main activities associated with Service Level Management, these are:

1. *Defining the process:*

This activity includes the planning and implementation of the process, as well as how future enhancements will be integrated into the service.

2. *Executing the process:*

This activity includes the negotiation, definition, and development of the Service Level Agreement (contract between the service provider and service recipient), as well as the monitoring, reporting and reviewing of the process. Monitoring of the service needs to be done from a customer's perspective and any discussions regarding the findings of the monitoring will be discussed with the customer.

3. *Controlling the process:*

This activity involves verification of the level of service being delivered, as well as actions to enhance the level of service.

Several different agreements may need to be in-place before service level agreements can be made with the customers. These include underpinning contracts with the external suppliers (for

example between an external service provider and the IT department), operational level agreements with internal IT departments (i.e. Network Management), and other service level agreements between the business user and the IT department.

Management Reports on the level of service are included in the Service Quality Plan, the goal of which is to support the control of service delivery.

Capacity Management:

The objective of Capacity Management is to support the optimum and cost effective provision of IT services by helping organizations to match their IT resources to the business demands. Put simply, Capacity Management ensures provision of the right resources, at the right time, in the right place, at the right cost.

It is important that IT organizations effectively utilize the available resources, and that future business demands are known and planned. In order to achieve this goal several Capacity Management activities need to be performed. These include:

Performance Management

The IT infrastructure is not a static environment. Changes happen constantly, and in-order to effectively utilize the resources the infrastructure needs to be monitored and fine-tuned.

Workload Management

This activity deals with reviewing the workloads on a system and ensuring that they are at an optimal level. If the workload were to become too high, the levels of service supplied to the business users would suffer, potentially jeopardizing the agreed upon levels of service.

Application Sizing

Before any changes are implemented to the infrastructure, it is important to understand the ramifications. The introduction of a new application is not an exception to this rule. Application sizing determines what the resource requirements of the new application will be, and determines if the current infrastructure can support the implementation.

Resource Management

This activity determines how the current resources are being utilized, and identify when additional resources need to be acquired to maintain the required levels of service.

Demand Management

Workloads can be better controlled in terms of available capacity by using the available information on current workloads and consulting customers on these matters.

Modeling

Modeling techniques can be used to determine what capacity requirements will be based upon future demands or changes to the IT infrastructure.

Capacity Planning

The information maintained in the Capacity Data Base (CDB) and that derived through the modeling process is used by capacity management to carry out it's planned function. The capacity planning process describes the way in which such a plan should be drawn up and how often it should be maintained.

Management reports will be produced on a regular basis identifying how the current resources are being utilized and how to improve on the efficiency of the environment. These reports also identify

what enhancements will be required to maintain or improve the levels of service in light of planned changes in the business requirements.

Availability Management:

The objective of Availability Management is to guarantee optimal level of availability of IT services with the correct use of resources, methods, and technology.

Because businesses are becoming increasingly reliant on IT in order to remain competitive, it is imperative that IT is able to either avoid, or minimize, unexpected down time. In order to achieve this goal certain processes need to be in-place. Availability Management provides better insight into which resources and measures are necessary to guarantee optimal availability. This in-turn allows the available resources to be more efficiently utilized.

Availability Management focuses on availability, reliability, maintainability, serviceability, resilience, and security. All of these requirements are focussed upon in the following actions:

Realization of Availability Requirements

Once the user's requirements are known, through the negotiation and development of a Service Level Agreement, the specific availability measurements for the required infrastructure can be established.

Compiling Availability Plan

This plan defines what the availability requirements are and how they can be achieved with both the current and future infrastructures. Additionally, the plan includes a number of scenarios with respect to future availability requirements.

Monitoring Availability

In order to determine how well the availability management process is performing, and how it compares to the agreed upon levels of service, the availability of the IT infrastructure needs to be monitored.

Monitoring Maintenance Obligations (Serviceability)

To ensure that availability is maintained it is imperative that preventative maintenance is performed. External service providers usually supply this. The delivery of service to the contractual obligations needs to be monitored on a regular basis.

Management Information

Periodic reports are given on: requests to improve availability, adaptations made to the availability plan, deviations from agreed service levels, and deviations from contractual (maintenance) obligations with external parties.

IT Service Continuity Management:

The objective of IT Service Continuity Management is planing to cope with, and recover from, an IT crisis (i.e. loss of service for protracted periods), which require that work is moved to an alternate system in a non-routine way. A plan that describes the process to return to a normal level of service once the IT crisis is resolved must also be developed.

Studies have shown that 90% of organizations would be bankrupt within five days of a disaster if their information sources were to fail completely. Statistics have revealed that within 2 years of the recent bombing of the World Trade Center in New York City, 75% of the businesses that were directly affected were out of business as a direct result of not having a contingency plan in place.

It is illegal for financial institutions to operate without a tried and tested contingency plan in place. Senior IT management is liable if such plans if not in place. Do I need to say more?

Several actions are required to develop a contingency plan. These include:

Risk analysis

Determining what the assets are, their liability, and the vulnerability. Based upon this information a full risk analysis can be performed.

Risk Management

This consists of identifying and selecting counter-measures for the risks. This includes such options as:

- Do nothing
- “Fortress” approach
- Reciprocal arrangement
- Return to clerical procedures
- Cold start fixed
- Cold start portable
- Hot start internal
- Hot start external
- Hot start mobile

Management of the contingency plan

Once the contingency plan has been set up it must be regularly tested, evaluated and adjusted.

Testing of the contingency plan

This is needed to demonstrate the effectiveness of the counter measures in practice. Tests should be scheduled and happen regularly and after all changes that have an impact on the plan.

Management Information

Reports need to be circulated that identify items such as: incidents from which crisis could have (or have) arisen; changes influencing the contingency plan; results of contingency plan tests; and, costs of counter- measures.

Financial Management for IT Services:

The objective of Financial Management for IT Services is to provide insight into, monitoring of and, if necessary, recovery of the cost of IT services from the customer. This process provides relevant financial business information that enables the optimal balance between price and quality to be found at each organizational level.

Without cost management it is not possible to define Service Level Agreements.

The activities associated with Financial Management for IT Services are:

Budgeting and Accounting

This activity is focused on understanding the current costs associated with the IT infrastructure, these costs might be divided into both running costs and recovery costs. This mandatory role is in place to identify what the cost of service provision is, what the recover costs would be, and to track how money is spent throughout the operating year.

Costing

This activity focuses primarily on the IT organization in order to provide detailed information on the costs incurred within the IT organization.

The goal of costing is to identify how much money is allocated to and will be spent to meet specific business objectives and whether the proposed expenditures are feasible and economic.

Charging

This activity focuses on the customers of the IT organization in order to recover the costs of the IT organization or to promote the customer's awareness of these costs.

Several goals may be accomplished through the use of charging, these include:

- Recovery of IT expenditures;
- Shaping customer behavior;
- Cost awareness; and,
- Competitive bidding for customers who are deciding whether to utilize in house IT services or external suppliers.

Management reporting may include:

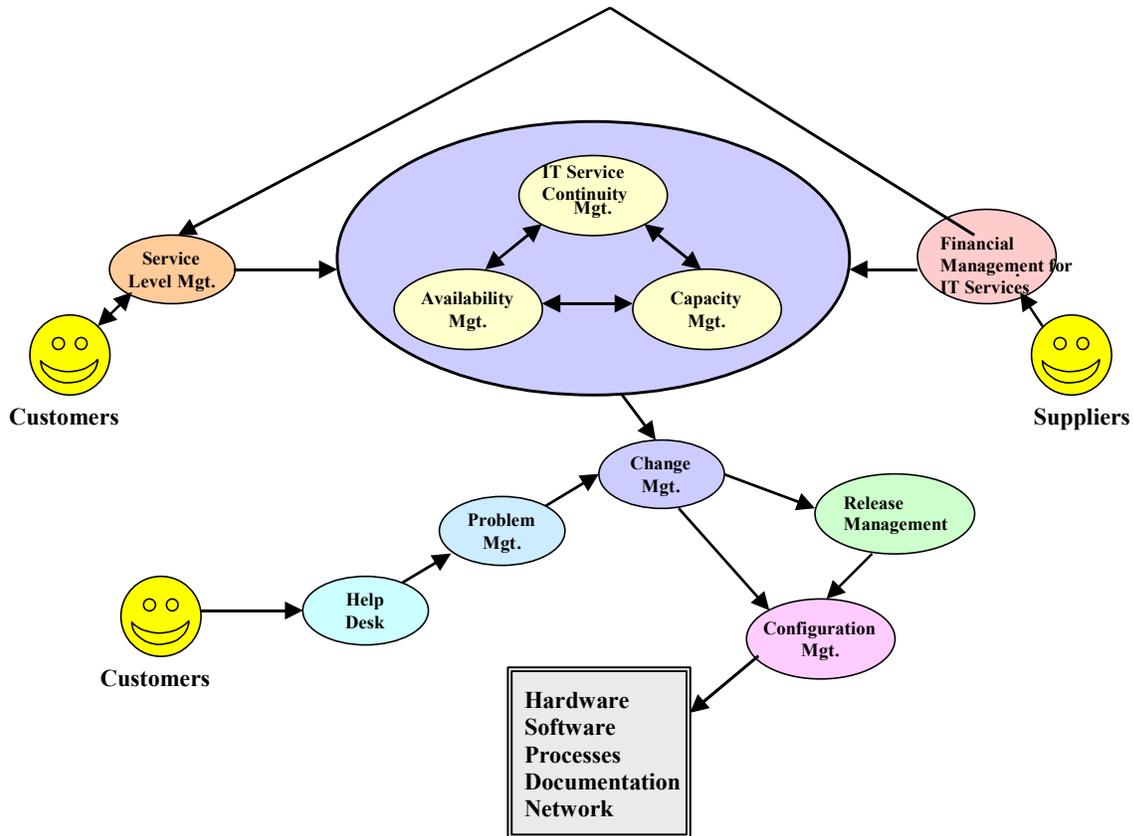
Percentage of CIs with incorrect financial data

Total cost of CIs comprising an end-to-end client application

Percentage of change management decisions where cost impact is omitted

Percentage of cost predictions that are incorrect

Process integration:



The process diagram above illustrates how the ITIL processes fit together and the flow of information between them. ITIL defines the roles of these processes and presents the organization with a common framework for promoting understanding and communication of implementation goals. It is up to each individual IT organization to determine the specifics of how the processes function and the tool requirements for the processes. These processes might well end up being a combination of both automated as well as manual processes. A decision might be made not to implement certain processes, or parts of processes. All these are choices that the various IT departments need to assess.

IMPLEMENTING ALL OF THESE PROCESSES MAY SEAM LIKE A VERY DAUNTING TASK, WHERE DO I START?

Eating an elephant is a major undertaking; the only way it can be accomplished is one mouthful at a time! Most major projects can be overpowering and the only way to tackle them is to break it down into manageable steps that have tangible gains and to move forward one step at a time.

It would be an overwhelming task to try and implement all of these processes at once. The first step is to determine the business goals of the organization and to identify where the most pain is being experienced.

In order to determine these goals IT will need to start talking with the management teams and business groups to understand the strategic and tactical goals of the company as well as the customer (previously referred to as IT user) community. Once the requirements are known, both in terms of what services are required, when they are required, how they need to be delivered, and the value of the services, IT can then match these services up with the services that they are capable of providing. These IT services may already be defined, they may need additional enhancements, may need redefinition, or even need to be developed. IT can now start to identify what services are crucial for supported organizations to attain the corporate objectives. IT now knows what they need to provide to start to become a valued business partner.

The specific customer requirements will now need to be prioritized. This prioritization is the responsibility of the customer, NOT IT. IT can have input into this process (in terms of costs to implement, time to implement, supportability, adaptation to technology, etc), but the ultimate goal is for the customer to tell IT the order of importance of their requirements.

Having determined the specific customer requirements, it is now possible to decide where to start. Parts of the infrastructure (people, processes, and technology) might already be in-place. A gap analysis will need to be performed. The supportability, flexibility, robustness, capacity, cost of the current infrastructure will need to be considered to determine whether or not it will support the customer's requirements. If changes will need to be made then the customer will need to be informed as to the cost, both in terms of dollars as well as time to implement and support, will be involved in the decision as to how to proceed. This may involve reprioritization or even rescheduling the delivery of certain services.

In addition to identifying the short term requirements, thought should also be given to where the organization is going. What the long-term goals are, and how the current environment, along with the proposed environment will fit into this long-term vision.

As mentioned earlier, the implementation will involve people, processes and technology. It is important to recognize all three components. Just like a three-legged stool, if one of the infrastructure components (legs) is not in-place then the solution will fall over. The infrastructure needs to be developed and tuned to support the customer's requirements. The following section will cover how this infrastructure is built.

How to implement the 'three legged stool':

Having chosen the infrastructure that will have the best return on investment, a procedure now needs to be developed to roll it out. The procedure is essentially the same, irrespective of the ITIL process being implemented.

In order for the roll out to be successful, several steps will need to be taken. These steps fall into the following categories:

- **Plan**
- **Do**
- **Check**
- **Analyze**

What follows below is by no means an exhaustive list of tasks to be performed, however it is designed to highlight some of the major tasks that if not performed could be detrimental to the implementation of the infrastructure.

Plan

As with most implementations, it is the planning phase that needs to be well thought out and implemented. Without thorough planning the implementation is destined to be plagued with problems, and its chances of success limited.

When planning the project care should be taken to identify the current areas of pain, areas where the implementation of the new tools and processes will have immediate effect. If possible these areas should be visible and addressable within a two to three month period. By providing these quick fixes on a regular basis the project will gain momentum, the project team members will feel a great sense of achievement, and the recipients of the service will continue to support and promote the overall project.

As IT moves into the new paradigm the goals, objectives, measures of success, and the reward system for the people aspect of the equation need to be readjusted. People in the support roles need to be measured on customer satisfaction issues. It is far better to implement a solution that avoids customer dissatisfaction than to be able to fix the customer issue quickly after it has become a problem.

A number of methodologies have been developed to assist the integration of tools into the developing processes. Amongst these is the HP OpenView PRIME methodology, commonly used during the implementation of the HP OpenView IT Service Management Solution. It includes the running of workshops to design processes, the incorporation of best practices, and covers the options for the implementation of the HP OpenView IT Service Management Solution to support the resulting IT environment.

State the objectives of the project.

What is the overall objective of the project, the measures for success? How will you know when you have reached your stated objective.

State the business requirements.

What business requirements will this implementation project accomplish.

Obtain management support and sponsorship.

In order for a project to be successful, higher levels of management have to be supportive, both in terms of resources as well as finances. Management support is essential to resolve issues that will undoubtedly arise as the new paradigm is implemented.

Identify the project manager.

Due to the complex nature of the implementation of people, processes, and technology, even the simplest of projects will prove to be quite complex. Many of the processes interrelate, requiring the skills of an experienced project manager. If one is not employed the implementation of the infrastructure may be severely delayed.

Identify the key tasks.

When implementing any of the ITIL processes certain steps will need to be followed. It is important to identify these steps as soon as possible.

Identify the project team members.

Specific skills will be required to implement certain tools and processes. Team members with these skills need to be identified and their time booked as soon as possible.

Identify the timelines and milestones.

Meaningful and measurable milestones need to be identified on the project plan. These milestones should be accomplishable within a four to six week window. By keeping the timelines short, both contributors and beneficiaries will be able to see the accomplishments. This will contribute to a positive feeling regarding the project.

Start awareness campaign.

It is important to ensure that all affected parties are aware of what is being implemented. People are a very important part of the customer service solution. The support staff has to believe in the infrastructure that they are supporting. They are involved not only in the implementation of the solution, but also in the support and enhancement of the solution after it has been deployed. For these reasons it is very important to involve all parties in the development of and knowledge transfer as it pertains to them, both directly and indirectly, in the implementation of the architecture.

It is in the planning phase that mass education has to take place. This is best performed through a series of workshops, seminars, and presentations. The initial session should be introduced by high level management, not just from the IT side of the organization, but also by a senior business manager. This will show commitment and foster teamwork within the business units. Management should then continue to play a promotional role as the project progresses.

Identify organizational roles and responsibilities in support of the process.

Determine how the implementation and plan for their use of the new processes will affect the users and organizations.

Define user acceptance criteria.

Identify success criteria from a user prospective. This should be done with input from the user community.

If testing needs to be performed, the users need to be heavily involved in the development of the acceptance criteria.

Do

Identify & document business processes and how they will interface with the IT process.

This may well be an iterative process, and one that will require further interfacing with the customers.

This documentation will be used in the implementation and training plans.

Choose supporting tools.

As mentioned in a later section, the tool selection is critical for the long-term success of the project. Tools need to be chosen that will integrate into the new infrastructure, and that will allow for the anticipated growth in the environment.

Functionality is an obvious necessity, as is supportability, availability, and performance. In addition the learning curve for use of the tool should be considered, as well as the amount of in-house expertise that will be required to implement the tool.

Training.

Because of the potential change in focus this training should not just be focussed on technical aspects, it should also cover interpersonal skills training. IT staff may be moving into roles with a high level of customer interaction to which they may not be accustomed.

Additionally, the customers of the service will need to be trained on how to effectively use the service, what they should do in case of a problem, and how to give feedback on the service (both positive as well as negative).

Publicize implementation.

Workshops, seminars, and presentations should also be used to impart knowledge as well as to collect information. Determining how the current processes work, the strengths and weaknesses of the current processes, the concerns with the proposed new processes, and where the new processes will fit into the existing process flow.

As the implementation continues to move forward, these workshops and sessions should continue, but will start to become more information sessions than information gathering sessions.

Switch over to new system.

Go live!

This should only take place after rigorous testing. The switchover plan may involve a set period of time when the two systems (old and new) are run in parallel.

It is very important that plans exist to roll out the new system if necessary.

Check

Review the process now it is operational for efficiency, effectiveness, and integration with other related processes.

Once the new infrastructure is in place more time needs to be spent to ensure that it is working satisfactorily. Previously documented tests are now performed to ensure that this is the case.

Fine-tune the process and tools.

This is a time to perform minor changes to the environment to ensure optimum efficiency.

Complete user acceptance.

It is important that the users of the infrastructure, the customers, all agree that the infrastructure meets their previously documented goals. The implementation of the infrastructure can not be formally declared a success until the customers have agreed and signed off on it.

Analyze

Review ways in which the process can be improved with minimal investment in terms of time, effort, cost, and resources.

Once the infrastructure is in place it is time to review it and determine how it can be improved. These improvements ideally should be made at minimal cost, however if the benefits warrant it then additional outlays may be acceptable.

Ensure that the process and tools are meeting the needs of the business customers.

Customers needs change technology changes. In order for the infrastructure to continue to meet the customers needs it will need to be constantly reviewed and enhanced as appropriate.

HOW DO I SELECT THE TOOLS?

In order to support the ITIL processes several different types of tools are required, the one commonality in all of the tools is that they should be capable of providing a service level view of the environment.

There are tools to facilitate the ITIL processes such as Help Desk, Problem Management, Change Management, etc. These tools are only of use if the underlying business processes are in place. It is the role of these tools to ensure that the flow of information is maintained to the right people at the right time. These tools also need to be able to produce management reports to highlight how effective the new processes are, and identify where potential improvements may be realized. Adequate time must be spent defining the business objectives that the tools will be used to achieve. A wise person once said, "There are many roads that will take you where you are going if you don't have a destination in mind."

In order to feed the ITIL processes, several other data gathering tools are required. For example, in order to populate the Configuration Management Database, an automated tool should be used. An automated tool should also be used in order to determine if one of the Configuration Items is experiencing problems. This tool should have the ability to generate an incident report to Help Desk. Tools are also required to allow the support staff at the Help Desk, and Problem Management staff to perform analysis on the troublesome CI. Tools also need to be chosen that will allow for Availability Management and Performance Management, as well as Cost, Change, Software Control and Distribution, and Contingency Planning.

Once the management environment becomes live, it is important to identify the returns on the investment. Tools are therefore required that enable the production of management reports.

Hewlett Packard OpenView is one of the few companies, if not the only company that supplies a fully integrated set of tools that meet all of these requirements.

Tools such as HP OpenView IT Operations, Service Navigator, Network Node Manager , IT Administrator, Desk Top Administrator, MeasureWare, as well as ManageX are all available and fully integrated to provide the data gathering and monitoring components required.

Hewlett Packard OpenView IT Service Management suite of tools provides the facilitation of the ITIL processes Help Desk, Problem Management, Change Management, Configuration Management, and Service Management.

HP OpenView ITSM Asset Manager provides the Cost management perspective.

Tools such as MeasureWare, GlancePlus, and PerfView (Analyzer and Planner) provide the Capacity Management views.

Availability Management is provided through Hewlett Packard's Service Guard, OmniBack, Mirrored Disk and other high availability technologies.

HP OpenView also brings to the table a proven track record of experience with organizations who have achieved success with the implementation of the IT Service Management business processes and the full suite of integrated tools in support of these business processes.

Lastly, but by no means any less important, is the availability of management reporting tools. Tools such as OpenView Service Reporter which give web based reports on system availability, service level compliance, and distribution and type of CI errors and failures. PerfView Analyzer gives

detailed performance reports. HP OpenView IT Service Management Solution who also supplies a plethora of reports pertaining to the types of problems reported, time to fix problems, number of change requests, etc.

Tool selection:

All of the ITIL processes are tightly integrated. It is therefore important that any tool that is chosen to supply information to the ITIL process; for example, incident reporting into Help Desk needs to be intelligent enough to integrate with the tools used to support the other ITIL processes. In the example of the tool that reports the incident, it also needs to be able to integrate with the tools used to investigate the incident by Help Desk and Problem Management. As the tool is able to check for changes in state of the Configuration Items and can therefore communicate with the CIs, it should be this tool that is also used to inventory the CIs and to populate the Configuration Management DataBase. As this tool is constantly monitoring the CIs, it can also be used in the on-going gather auditing information on the CMDB. As Service Level Agreements are developed and documented, there should be links between the tool used to define the service levels and the tool used to monitor that the contracted level of service is being met. The tool that monitors the level of service needs to be able to integrate into the tool that will automatically generate an incident at the Help Desk. This automated approach will allow for Help Desk to proactively notify the customers of the potential problem. This action will reduce the number of duplicate calls coming to the Help Desk from the customer community and will allow the Help Desk to start the corrective action prior to the users experiencing problems.

Tools need to be chosen that will allow the IT support staff to view the system not only from a technical point of view, but also from their customers point of view. For example, customers are only interested in the end-to-end transaction time of their unit of work. Customers don't care if the transaction had to go through an application server, over a LAN to a database server, and back over the LAN to the application server, before receiving a response on their PC. All the customer sees and knows is that the business transaction that was just submitted has not been completed. The System Management tools need to be able to view this business transaction, allowing the support teams to address the issues from the customer's perspective. Additionally the tools need to be able to report on activity, utilization, and incidents from the business perspective.

Management reporting

As previously mentioned, management reports are crucial to ensure the success of an IT management infrastructure. The tools chosen should have good reporting functionality, they should provide reports with minimal impact to the systems resources, be totally automated, and allow for the reporting medium to be both hard and soft, with the ability to post information on secure web sites. Ideally the reporting interface should be standard throughout the management packages in order to avoid the requirement to learn several interfaces.

Why Service Management projects fail to succeed.

Potential problems with implementing the processes and tools:

Focusing on technology not the business.

In the past, the role of IT was to manage the IT environment, ensuring that the hardware was kept up and running. IT was also responsible for investigating new technologies and implementing these new technologies into the environment. IT was seen in many organizations as a necessary evil that was the only source of data processing. Times have now changed, and if the users do not like the level of service received or the cost of the service they are being provided, they will look to outsourcing services for their processing. This change in the customer's attitude has meant that IT needs to fully understand what the customers requirements are and to implement tools and services that can satisfy the customers requirements at an acceptable cost. IT can no longer purchase and implement technology solutions if they do not address business needs.

Before making the technology purchase the users requirements have to be identified by the client and taken into consideration when deciding on the tool, as well as when prioritizing which components of the tool should be implemented first. Once more, the implementation should be structured such that returns on the investment are quickly realized.

Risk of failure from venturing into uncharted waters.

The target area of implementation also needs to be considered. It would be easy to justify staying away from areas of great pain, however these are the areas where the most gain can also be made. These tend to be areas with great visibility and as such will lend credence to the value that IT provides to the business following the successful implementation of the technology.

No limit to Scope.

One of the reasons that a high percentage of the system management implementations fail is because the implementers tried to implement everything at once. If several IT professionals were gathered in a room and each asked to pick the most important ITIL processes that should be installed, each one would pick a different process. Each IT professional would have sound reason as to why they picked their chosen process. However, without talking to the customers and determining where the most pain is experienced, where the best return on investment is, what the issues are that the customer needs fixed, it is impossible to identify the correct customer solution. In most shops, IT has not spoken with their customers. They don't know what the right solution is and they therefore take their best guess. This assumption is often wrong, so little value is seen, the return on investment is low, and as the project continues and more and more resources are consumed for an apparent small gain, it does not take long for the customers to start looking for their own solutions and for senior management to start to reconsider where they want to spend their money.

Lack of Commitment.

Senior management sponsorship of the project is also critical. Without it, projects have a tough time weathering the storms that are sure to beset any major IT projects. If sponsorship does not exist, the IT initiatives can start to be viewed as 'something else that IT is shoving on us...why should we accept this new way of doing things?' Management sponsorship tells the developers and implementers of the process that they have the full support of the organization. It lets the recipients of the new service know that this is the company's new way of doing things, it has been well thought out, and the business dictates that this is the right way of doing things.

IT Service Management implementation projects are typically projects that deal with a significant change in the way of doing business. They are initiated to improve the stability of the IT infrastructure while maintaining a balance of flexibility, and are inherently catalysts of ongoing quality improvement processes within the organization. A committed approach to managing

change must be fully supported by the senior management in order to guarantee a successful implementation. Most often, the change involved is a shift of focus within the IT shop from an inward view to an outward, customer-directed view. Organizations who have enjoyed successful IT Service Management implementations are the ones that managed the project from both a technical approach and from a strong people management aspect.

User buy-in.

Promotion of the project is often overlooked and if absent can spell trouble for the project. Promotion and advertising can go a long way to getting the user community on board and eager to try the new environment

Lack of knowledge.

Quite often, the magnitude of the problems associated with an IT Service Management implementation are not fully comprehended or are underestimated. Instead of breaking the problems down into workable chunks and developing an implementation strategy with a modular approach, the approach is taken of implementing too much over too long a time period. What generally happens with this type of approach is that many pieces of the solution are implemented, though not quite fully enough to satisfy any one complete business problem. Instead, the approach should be to break the business problem down into manageable pieces that can be fully addressed within a six to eight week window. This approach will ensure that the implementation team is achieving their goals and the customer base will see real strides forward in getting their problems addressed within short time windows.

Limited tangible ROI.

One area where IT shops start to lose face is in justifying their expenditure for System Management tools. This is usually because they have a hard time quantifying the return on the expenditure. There may not have been adequate thought given to what the business problem was that needed solving, - nor is management reporting used effectively during and after the implementation to highlight what the effect has been on the business problem after the tool was implemented. If the system management tool has been justified based upon business criteria, then the return on investment should be apparent. For example, if history has shown that before the management tool was implemented, parts of the IT infrastructure were unavailable for 'x' hours per month, with a productivity cost of '\$y/hour'; and after the management tools were implemented the unavailable hours went down substantially to 'z', then not only was there a savings of $(x*y)-(z*y)$, but the number of widgets that could be produced has risen by a factor of $(x-z)/(\text{time to produce a widget})$, additionally more difficult to quantify metrics such as user satisfaction, user moral, value of IT will also have risen. It is therefore necessary to be able to produce management reports that show these improvements in terms of business impact, with real dollar savings attached.

The format of the reports should be governed by the management team that wants to review them, and should be flexible enough to allow for changes as the business processes evolve. These management reports are key in justifying why IT is a value business partner, and why continued investment in IT is critical to the overall success of the business.

Timelines to implement the processes:

PROCESS	TIME TO IMPLEMENT
Help Desk	6 to 24 months for sophisticated, extensive solution
Change Management	1 to 3 months inclusive of the procured support tools
Configuration Management	4 to 12 months from inception to completion
Problem Management	2 to 4 months for product evaluation and system design
Release Management	A matter of weeks rather than months providing configuration management is in place
Availability Management	6 to 9 months for a green field site. Depends upon the number of procedures and system requirements.
Capacity Management	9 to 12 months
IT Service Continuity Management	6 to 12 months including testing
Financial Management for IT Services	Approximately 6 months to set up plus a 3-month parallel test run, in line with the fiscal year.
Service Level Management	2 to 6 months for existing services

WHY BOTHER, IT SEAMS LIKE A LOT OF WORK--

WHERE IS THE PAYOUT?

It is true. The implementation of ITIL processes, and the tools to support them, is a lot of work. The payouts however are tremendous. The IT organization moves from a cost center to a valued business partner contributing to the success of the company. IT departments develop from the reactive, high pressure, thankless organizations into a highly responsive, proactive, customer-aware service providers. IT has input into the way business grows. Because IT is aware of the business problems, they can investigate ways that the business groups can better use technology to move ahead.

The improvements in the way in which IT function can also affect other non-IT related issues such as time to market, competitive advantage, customer satisfaction, improved customer service. All of these can result in significant improvements to the financial performance of the company.

In these days of downsizing and outsourcing, any IT organization that has proven processes and tools in place will be able to demonstrate greater levels of productivity, and a higher level of customer satisfaction.

If the customers were receiving the levels of service that they require at a price they are satisfied with, why would they want to consider outsourcing? However if the IT department doesn't know what the users want how can they ever hope to be able to provide it?

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